IN THE MATTER OF
THE INDUS WATERS KISHENGANGA ARBITRATION

-before-

THE COURT OF ARBITRATION CONSTITUTED
IN ACCORDANCE WITH THE INDUS WATERS TREATY 1960
BETWEEN THE GOVERNMENT OF INDIA
AND THE GOVERNMENT OF PAKISTAN
SIGNED ON 19 SEPTEMBER 1960

-between-

THE ISLAMIC REPUBLIC OF PAKISTAN

-and-

THE REPUBLIC OF INDIA

PARTIAL AWARD

COURT OF ARBITRATION:

Judge Stephen M. Schwebel (Chairman)
Sir Franklin Berman KCMG QC
Professor Howard S. Wheater FREng
Professor Lucius Caflisch
Professor Jan Paulsson
Judge Bruno Simma
H.E. Judge Peter Tomka

SECRETARIAT:

The Permanent Court of Arbitration

18 February 2013

AGENTS, COUNSEL AND OTHER REPRESENTATIVES OF THE PARTIES

AGENT FOR PAKISTAN:

Mr Kamal Majidulla
Special Assistant to the Prime Minister for
Water Resources and Agriculture

AGENT FOR INDIA:

Mr Dhruv Vijai Singh
Secretary to the Government of India
Ministry of Water Resources

CO-AGENTS FOR PAKISTAN:

Mr Khalil Ahmad
Ambassador at Large

Mr Mohammad Karim Khan Agha
Prosecutor General
National Accountability Bureau

Mr Mirza Asif Baig Mirza
Pakistan Commissioner for Indus Waters

CO-AGENTS FOR INDIA:

Mr Y.K. Sinha
Additional Secretary (PAI)
Ministry of External Affairs

Dr Neeru Chadha
Joint Secretary & The Legal Adviser
Ministry of External Affairs

Mr G. Aranganathan
Indian Commissioner for Indus Waters

COUNSEL FOR PAKISTAN:

Professor James Crawford SC
University of Cambridge
Matrix Chambers

Professor Vaughan Lowe QC
University of Oxford
Essex Court Chambers

Mr Samuel Wordsworth
Essex Court Chambers

Ms Shamila Mahmood
Senior Legal Consultant
Government of Pakistan

COUNSEL FOR INDIA:

Mr Fali S. Nariman
Senior Advocate
Supreme Court of India

Mr R.K.P. Shankardass
Senior Advocate
Supreme Court of India

Mr Rodman Bundy
Eversheds LLP**, Paris**

Professor Stephen C. McCaffrey
McGeorge School of Law
University of the Pacific

Professor Daniel Barstow Magraw
Johns Hopkins University

Mr S.C. Sharma
Advocate, Supreme Court of India

REPRESENTATIVES FOR PAKISTAN:

Mr Aamir Shoukat
Chargé d'affaires
Embassy of Pakistan

Mr Faris Qazi
Deputy Commissioner for Indus Waters

REPRESENTATIVES FOR INDIA:

HE Bhaswati Mukherjee
Ambassador of India to the Netherlands

Mr Darpan Talwar
Senior Joint Commissioner (Indus)
Ministry of Water Resources, Technical Adviser

REPRESENTATIVE FOR THE GOVERNMENT OF AZAD JAMMU AND KASHMIR:

Mr Sardar Raheem
Secretary of Irrigation and Agriculture

EXPERT WITNESSES FOR PAKISTAN:

Mr Vaqar Zakaria
Managing Director
Hagler Bailly Pakistan

Mr Syed Muhammad Mehr Ali Shah
Principal Engineer
NESPAK

Dr Gregory L. Morris
GLM Engineering COOP

Dr Jackie King
River Ecology and Environmental Flow Specialist
Southern Waters

TECHNICAL EXPERTS FOR PAKISTAN:

Mr Manzar Naeem Qureshi
Power Economics Expert
Hagler Bailly Pakistan

Mr Saleem Warsi
Flow Measurement Expert
Water Resources and Power Development Authority

Dr Jens Christian Refsgaard
Geological Survey of Denmark and Greenland (GEUS)

Mr Hans Beuster
Hydrologist
Beuster, Clarke and Associates

Dr Cate Brown
River Ecology and Environmental Flow Specialist
Southern Waters

Mr P.K. Saxena
Director
Central Water Commission, Technical Adviser

Mr Balraj Joshi
General Manager
NHPC Ltd., Project representative

EXPERT WITNESSES FOR INDIA:

Dr K.G. Rangaraju
Hydraulic Engineering Consultant & Former Head of Civil Engineering, IIT, Roorkee

Dr S. Sathyakumar
Scientist
Wildlife Institute of India, Dehra Dun

Mr Jesper Goodley Dannisøe
Senior Project Manager
DHI (Water & Environment), Denmark

Dr Niels Th. Jepsen
Senior Scientist
Section for Freshwater Fisheries Ecology,
Technical University of Denmark

TABLE OF CONTENTS

FIGURES AND MAPS

GLOSSARY OF DEFINED TERMS

1954 Proposal	Proposal by the World Bank for a "Plan for the Development and Use of the Indus Basin Waters" dated 5 February 1954 (Annex PK-2)
Baglihar (or ***Baglihar*** **Determination**)	Raymond Lafitte, Determination of Neutral Expert on the Baglihar Project dated 12 February 2007 (Annex PK-230)
Commission	The Permanent Indus Commission established by Article VIII of the Treaty
Commissioners	The Pakistani Commissioner and the Indian Commissioner
Counter-Memorial	India's Counter-Memorial dated 23 November 2011
Court	The Court of Arbitration in these proceedings as constituted pursuant to Article IX(5) and Annexure G of the Treaty
CWPC	India's Central Water and Power Commission
CWPC Letter	Letter from the Chairman of the CWPC to India's Ministry for Irrigation and Power dated 16 May 1960 (Annex IN-54)
Dead Storage	As defined at Paragraph 2(a) of Annexure D to the Treaty, "that portion of storage which is not used for operational purposes."
Dead Storage Level	As defined at Paragraph 2(a) of Annexure D to the Treaty, "the level corresponding to Dead Storage"
EIA	Environmental impact assessment
First Dispute	As stated in Pakistan's Request for Arbitration, the dispute between the Parties as to: Whether India's proposed diversion of the river Kishenganga (Neelum) into another Tributary, i.e. the Bonar-Madmati Nallah, being one central element of the Kishenganga Project, breaches India's legal obligations owed to Pakistan under the Treaty, as interpreted and applied in accordance with international law, including India's obligations under Article III(2) (let flow all the waters of the Western rivers and not permit any interference with those waters) and Article IV(6) (maintenance of natural channels)
First Meeting	Meeting convened by the Court with the Parties on 14 January 2010 pursuant to Paragraph 14 of Annexure G to the Treaty
ICOLD	International Commission on Large Dams
Indian Commissioner	Commissioner for Indus Waters appointed by India pursuant to Article VIII(1) of the Treaty

Kishenganga/Neelum River (or **Kishenganga/Neelum** or **River**)	The river called the "Kishenganga" by India and the "Neelum" by Pakistan
KHEP	Kishenganga Hydro-Electric Project
11 March 2009 Letter	Pakistani Commissioner's letter to the Indian Commissioner dated 11 March 2009 (Annex PK-194)
MCM	Million cubic metres
Memorial	Pakistan's Memorial dated 27 May 2011
Morris Report	Expert report by Dr Gregory L. Morris submitted by Pakistan with its Reply; "Response to Items A, B and C in Chapter 7, Counter-Memorial of the Government of India"
Neutral Expert	The neutral expert appointed pursuant to Annexure F to the Treaty who rendered the Baglihar Determination
NJHEP	Neelum-Jhelum Hydro-Electric Project
Order on Interim Measures	Order on the Interim Measures Application of Pakistan dated June 6, 2011
Pakistani Commissioner	Commissioner for Indus Waters appointed by Pakistan pursuant to Article VIII(1) of the Treaty
Parties	The Islamic Republic of Pakistan and the Republic of India
PCA	Permanent Court of Arbitration
Rejoinder	India's Rejoinder dated 21 May 2012
Reply	Pakistan's Reply dated 21 February 2012
Request for Arbitration	Pakistan's Request for Arbitration dated 17 May 2010
Run-of-River Plant	As defined at Paragraph 2(g) of Annexure D to the Treaty, "a hydro-electric plant that develops without Live Storage as an integral part of the plant, except for Pondage and Surcharge Storage."
Schleiss Report	"Note on Second Dispute regarding Drawdown Flushing," expert report by Prof. Dr Anton J. Schleiss submitted by India with its Rejoinder

Second Dispute	As stated in Pakistan's Request for Arbitration, the dispute between the Parties as to: Whether under the Treaty, India may deplete or bring the reservoir level of a run-of-river Plant below Dead Storage Level (DSL) in any circumstances except in the case of an unforeseen emergency
Storage Work	As defined in Paragraph 2(a) of Annexure E to the Treaty, "a work constructed for the purpose of impounding the waters of a stream; but excludes (i) a Small Tank, (ii) the works specified in Paragraph 3 and 4 of Annexure D, and (iii) a new work constructed in accordance with the provisions of Annexure D"
Treaty	Indus Waters Treaty 1960 Between the Government of India, the Government of Pakistan and the International Bank for Reconstruction and Development signed at Karachi on 19 September 1960, 419 U.N.T.S. 126
VCLT	Vienna Convention on the Law of Treaties, 1969, 1155 U.N.T.S. 331
World Bank	International Bank for Reconstruction and Development

I. PROCEDURAL HISTORY

A. THE INDUS WATERS TREATY AND THE INITIATION OF THIS ARBITRATION

1. On 19 September 1960, the Government of the Republic of India and the Government of the Islamic Republic of Pakistan (the "**Parties**") signed the Indus Waters Treaty 1960 (the "**Treaty**").[1] The Treaty was also signed by the International Bank for Reconstruction and Development (the "**World Bank**") in respect of the World Bank's role under certain provisions of the Treaty. Instruments of ratification were exchanged between the Parties on 12 January 1961; the Treaty entered into force on that date with retroactive effect as of 1 April 1960 as stated in Article XII(2).

2. Article IX of the Treaty provides for a system for the settlement of differences and disputes that may arise under the Treaty. Article IX states in part:

> *Article IX*
> SETTLEMENT OF DIFFERENCES AND DISPUTES
>
> (1) Any question which arises between the Parties concerning the interpretation or application of this Treaty or the existence of any fact which, if established, might constitute a breach of this Treaty shall first be examined by the Commission, which will endeavour to resolve the question by agreement.
>
> (2) If the Commission does not reach agreement on any of the questions mentioned in Paragraph (1), then a difference will be deemed to have arisen, which shall be dealt with as follows:
>
> (a) Any difference which, in the opinion of either Commissioner, falls within the provisions of Part 1 of Annexure F shall, at the request of either Commissioner, be dealt with by a Neutral Expert in accordance with the provisions of Part 2 of Annexure F;
>
> (b) If the difference does not come within the provisions of Paragraph (2)(a), or if a Neutral Expert, in accordance with the provisions of Paragraph 7 of Annexure F, has informed the Commission that, in his opinion, the difference, or a part thereof, should be treated as a dispute, then a dispute will be deemed to have arisen which shall be settled in accordance with the provisions of Paragraphs (3), (4) and (5);
>
> Provided that, at the discretion of the Commission, any difference may either be dealt with by a Neutral Expert in accordance with the provisions of Part 2 of Annexure F or be deemed to be a dispute to be settled in accordance with the provisions of Paragraphs (3), (4) and (5), or may be settled in any other way agreed upon by the Commission.
>
> [. . .]

[1] *Indus Waters Treaty 1960 Between the Government of India, the Government of Pakistan and the International Bank for Reconstruction and Development*, 19 September 1960, 419 U.N.T.S. 126 ("Treaty").

(4) Either Government may, following receipt of the report referred to in Paragraph (3), or if it comes to the conclusion that this report is being unduly delayed in the Commission, invite the other Government to resolve the dispute by agreement. [. . .]

(5) A court of Arbitration shall be established to resolve the dispute in the manner provided by Annexure G

(a) upon agreement between the Parties to do so ; or

(b) at the request of either Party, if, after negotiations have begun pursuant to Paragraph (4), in its opinion the dispute is not likely to be resolved by negotiation or mediation ; or

(c) at the request of either Party, if, after the expiry of one month following receipt by the other Government of the invitation referred to in Paragraph (4), that Party comes to the conclusion that the other Government is unduly delaying the negotiations.

[. . .]

3. In turn, Paragraph 2 of Annexure G to the Treaty provides in relevant part as follows:

2. The arbitration proceeding may be instituted

[. . .]

(b) at the request of either Party to the other in accordance with the provisions of Article IX (5)(b) or (c). Such request shall contain a statement setting forth the nature of the dispute or claim to be submitted to arbitration, the nature of the relief sought and the names of the arbitrators appointed under Paragraph 6 by the Party instituting the proceeding.

4. Through a **Request for Arbitration** dated 17 May 2010, Pakistan initiated proceedings against India pursuant to Article IX and Annexure G of the Treaty.

5. In its Request for Arbitration, Pakistan stated that the Parties had failed to resolve the "Dispute" concerning the Kishenganga Hydro-Electric Project (the "**KHEP**") by agreement pursuant to Article IX(4) of the Treaty. Pakistan identified "two questions that are at the centre" of the dispute in the following manner:

a. Whether India's proposed diversion of the river Kishenganga (Neelum) into another Tributary, i.e. the Bonar-Madmati Nallah, being one central element of the Kishenganga Project, breaches India's legal obligations owed to Pakistan under the Treaty, as interpreted and applied in accordance with international law, including India's obligations under Article III(2) (let flow all the waters of the Western rivers and not permit any interference with those waters) and Article IV(6) (maintenance of natural channels)?

b. Whether under the Treaty, India may deplete or bring the reservoir level of a run-of-river Plant below Dead Storage Level (DSL) in any circumstances except in the case of an unforeseen emergency?[2]

[2] Pakistan's Request for Arbitration, para. 4.

6. These disputes will be referred to, as in the Request for Arbitration, as the "**First Dispute**" and the "**Second Dispute**," respectively.

B. THE CONSTITUTION OF THE COURT OF ARBITRATION

7. The Court of Arbitration (the "**Court**") was established pursuant to Article IX(5) and Annexure G of the Treaty. Paragraph 4 of Annexure G calls for the appointment of seven Members of the Court.

8. On 17 May 2010, Pakistan appointed His Excellency Judge Bruno Simma and Professor Jan Paulsson as arbitrators in accordance with Paragraphs 4 and 6 of Annexure G.

9. On 16 June 2010, India appointed His Excellency Judge Peter Tomka and Professor Lucius Caflisch as arbitrators in accordance with Paragraphs 4 and 6 of Annexure G.

10. In the absence of a standing panel of umpires as provided under Paragraph 5 of Annexure G or an agreement on the remaining umpires as specified in Paragraph 7(b)(i) of that Annexure, the Parties proceeded to select umpires in accordance with the procedure set out in Paragraph 7(b)(ii), which provides:

> (ii) Should the Parties be unable to agree on the selection of any or all of the three umpires, they shall agree on one or more persons to help them in making the necessary selection by agreement; but if one or more umpires remain to be appointed 60 days after the date on which the proceeding is instituted, or 30 days after the completion of the process described in sub-paragraph (a) above, as the case may be, then the Parties shall determine by lot for each umpire remaining to be appointed, a person from the appropriate list set out in the Appendix to this Annexure, who shall then be requested to make the necessary selection.

11. The Parties called upon three of the persons provided in the Appendix to Annexure G—the Secretary-General of the United Nations (for selection of the Chairman), the Rector of the Imperial College of Science and Technology, London, England (for selection of the Engineer Member), and the Lord Chief Justice of England (for selection of the Legal Member)—to appoint the umpires.

12. On 12 October 2010, the Secretary-General of the United Nations appointed Judge Stephen M. Schwebel as umpire and Chairman of the Court in accordance with Paragraphs 4(b)(i), 7 and 8 of Annexure G.

13. On 12 December 2010, the Lord Chief Justice of England and Wales appointed Sir Franklin Berman KCMG QC as umpire, in accordance with Paragraphs 4(b)(iii) and 7 of Annexure G.

14. On 17 December 2010, the Rector of Imperial College London appointed Professor Howard S. Wheater FREng as umpire, in accordance with Paragraphs 4(b)(ii) and 7 of Annexure G.

15. The Members of the Court signed and delivered declarations of independence and impartiality, which the Chairman communicated to the Parties on 27 December 2010.

C. THE FIRST MEETING OF THE COURT AND THE ADOPTION OF PROCEDURAL RULES

16. Paragraph 14 of Annexure G to the Treaty provides:

> 14. The Court of Arbitration shall convene, for its first meeting, on such date and at such place as shall be fixed by the Chairman.

17. By e-mail communication dated 17 December 2010, the Chairman of the Court invited the Parties, pursuant to Paragraph 14 of Annexure G, to meet with the Members of the Court at the premises of the Permanent Court of Arbitration (the "**PCA**") in The Hague on 14 January 2011.

18. The Parties accepted the Chairman's invitation in e-mail communications dated 26 and 27 December 2010. Thereafter, the Chairman transmitted for the Parties' comments a draft agenda for the meeting, prepared in accordance with Paragraph 15 of Annexure G, which provides:

> 15. At its first meeting the Court shall:
>
> (a) establish its secretariat and appoint a Treasurer;
>
> (b) make an estimate of the likely expenses of the Court and call upon each Party to pay to the Treasurer half of the expenses so estimated: Provided that, if either Party should fail to make such payment, the other Party may initially pay the whole of the estimated expenses;
>
> (c) specify the issues in dispute;
>
> (d) lay down a programme for submission by each side of legal pleadings and rejoinders; and
>
> (e) determine the time and place of reconvening the Court.

19. The Parties' comments thereon were incorporated as annotations to the agenda.

20. The Court of Arbitration held its first meeting on 14 January 2010 (the "**First Meeting**"). Immediately following the First Meeting, the PCA transmitted to the Parties a verbatim transcript of the day's discussions which was signed by the Chairman and constituted minutes for the purpose of Paragraph 19 of Annexure G.

21. Following the First Meeting, draft **Terms of Appointment** were sent to the Parties for comment and approval, resulting in the signing of the Terms of Appointment by the Parties, the Chairman and the Secretary-General of the PCA, with effect from 8 March 2011. In paragraphs 2.11 and 2.12 of the Terms of Appointment, the Parties confirmed that: (1) the Members of the Court had been "validly appointed in accordance with the Treaty"; and that (2) they had "no objection to the appointment of any member of the Court on the grounds of conflict of interest and/or lack of independence or impartiality in respect of matters known to them at the date of the signature of these Terms of Appointment."

22. At the First Meeting, having paid regard to Paragraph 24 of Annexure G, the Parties and the Court agreed, in keeping with prevailing practice, that all Members of the Court (whether arbitrators or umpires) would receive the same fees, and that all such fees would be paid by the Treasurer without any direct Party payments to the arbitrators.

23. On 21 January 2011, the Court issued **Procedural Order No. 1**, incorporating the matters agreed to by the Parties during the First Meeting:

> **1. Seat of Arbitration**
>
> 1.1 Taking note of the agreement expressed by the Parties during the First Meeting, the Court determines that the seat of arbitration for these proceedings shall be The Hague, The Netherlands.
>
> **2. Supplemental Rules of Procedure**
>
> 2.1 Pursuant to Paragraph 16 of Annexure G, the Court will determine, after receiving the Parties' views, supplemental Rules of Procedure for the conduct of these proceedings.
>
> 2.2 Based on the Parties' comments prior to and during the First Meeting, the Court notes that two options for supplementing Annexure G are under consideration:
>
> a. the PCA Optional Rules for Arbitrating Disputes Between Two States; or
>
> b. rules of procedure similar to those used by arbitral tribunals constituted under the United Nations Convention on the Law of the Sea in proceedings administered by the PCA.
>
> 2.3 In either case, the rules would be subject to amendment by the Court, in consultation with the Parties, to account for the particularities of these proceedings.
>
> 2.4 The Parties are invited to confer and agree upon one of the foregoing options or, in the absence of agreement, to provide the Court with their respective comments on

this matter. The Parties shall appraise the Court of their agreement or provide their respective comments by no later than February 3, 2011.

2.5 After having considered the Parties' views, the Court shall adopt supplemental rules of procedure in due course.

3. Programme for Submission of Written Pleadings

3.1 Pursuant to Paragraph 15(d) of Annexure G, and taking note of the views of the Parties expressed during the First Meeting, the Court lays down the following programme for the submission of written pleadings:

3.1.1 The written pleadings in these proceedings shall include:

(a) A Memorial by Pakistan.

(b) A Counter-Memorial by India.

(c) A Reply by Pakistan, which shall be restricted to matters raised in rebuttal to India's Counter-Memorial.

(d) A Rejoinder by India, which shall be restricted to matters raised in rebuttal to Pakistan's Reply.

3.1.2 Pakistan shall submit its Memorial no later than 180 days from the date of the First Meeting, i.e., no later than July 13, 2011. The Court acknowledges that Pakistan has the prerogative to accelerate the proceedings by submitting its Memorial before this deadline.

3.1.3 India shall submit its Counter-Memorial no later than 180 days from receipt of the Memorial of Pakistan.

3.1.4 Pakistan shall submit its Reply no later than 90 days from receipt of the Counter-Memorial of India.

3.1.5 India shall submit its Rejoinder no later than 90 days from receipt of the Reply of Pakistan.

4. Preliminary Objections of India

4.1 In its comments of January 11, 2011 on the draft agenda for the First Meeting, India gave notice that it "will urge preliminary objections which go to the maintainability of Pakistan's Request for Arbitration, including the competence of the Court of Arbitration to deal with the differences mentioned in the Request for Arbitration." After having discussed the matter with the Parties during the First Meeting, the Court determines that the preliminary objections of India shall be considered in the following manner:

4.1.1 India shall lodge its preliminary objections no later than 30 days from the submission of the Memorial of Pakistan.

4.1.2 Pakistan shall submit its Reply to India's preliminary objections no later than 30 days from receipt of India's submission.

4.1.3 The Court shall thereafter determine a time and place for the conduct of a hearing on preliminary objections in accordance with paragraphs 5.2.1 and 5.3 herein.

4.1.4 Following the hearing on preliminary objections, the Court shall endeavour to render its Decision on Preliminary Objections expeditiously, and if possible before the deadline for submission of India's Counter-Memorial.

4.2 The proceedings on preliminary objections shall not affect the schedule for the submission of written pleadings provided under paragraph 3 herein.

5. Time and Place of Reconvening the Court

5.1 Taking note of the views of the Parties expressed during the First Meeting and the schedule established under paragraphs 3 and 4 herein, the Court will notify the Parties in due course of the time and place of its reconvening.

5.2 Without prejudice to any further developments that may arise in these proceedings, the Court hereby informs the Parties of its availability to reconvene for hearings on the following dates:

5.2.1. For the hearing on preliminary objections:

(a) In the event that Pakistan submits its Memorial between April 15, 2011 and the end of May 2011, the Tribunal has provisionally set aside August 29 and 30, 2011 as possible hearing dates, in The Hague.

(b) In the event that Pakistan submits its Memorial on or after June 1, 2011, the Tribunal has provisionally set aside November 17 and 18, 2011 as possible hearing dates, in The Hague.

5.2.2 For the hearing on the merits:

(a) In the event that Pakistan submits its Memorial between April 15, 2011 and the end of May 2011, the Tribunal has provisionally set aside August 20 to 31, 2012 as possible hearing dates.

(b) In the event that Pakistan submits its Memorial on or after June 1, 2011, the Tribunal has provisionally set aside December 3 to December 14, 2012 as possible hearing dates.

5.3 Should Pakistan submit its Memorial substantially earlier than April 15, 2011, the Court may, to the extent practicable, propose earlier dates for the conduct of hearings.

6. Specification of the Issues in Dispute

6.1 Pursuant to Paragraph 15(c) of Annexure G and with regard to the Parties' opening statements during the course of the First Meeting, the Court takes note of the issues in dispute as found in Pakistan's Request for Arbitration of May 17, 2010, without prejudice to further development of the issues by the Parties in their respective pleadings.

7. Confidentiality

7.1 Taking note of the Parties' agreement, all written pleadings and any other documents or evidence relating to these proceedings are to remain confidential at this time.

7.2 In due course, and in any event no later than 30 days before the opening of the hearing on the merits (should such be necessary), the Parties shall inform the Court as to:

7.2.1 whether they agree to open to the public any hearings on the merits that may be conducted in these proceedings and, if so, whether they agree that the hearings may be broadcast;

7.2.2 whether they agree to make public the written pleadings, supporting documents, Rules of Procedure, and procedural orders utilized in these proceedings; and

7.2.3 whether they agree to make public the award rendered by the Court.

8. Site Visit

8.1 Taking note of the Parties' agreement during the First Meeting that the Court should conduct a site visit to the pertinent facilities and locations of the Kishenganga hydro-electric facility and to those of the Neelum Valley, the Court invites the Parties to confer and agree on a joint itinerary for the visit. The Parties are particularly encouraged to agree upon the optimum dates for conducting the site visit and on attendant security arrangements, as well as air transport between their respective sites if feasible.

8.2 Unless the Parties jointly apply for more time to discuss the matter, the Parties' respective views on the time, place, and other arrangements relating to the proposed site visit (including any points that may have been agreed to between them) shall be communicated to the Court no later than March 18, 2011.

8.3 The Court shall thereafter issue an order deciding upon the further steps to be taken in regard to the site visit.

8.4 The Court takes note of the views expressed by the Parties during the First Meeting regarding the possible conduct of the site visit within the months of February 2011 or March 2011. Regrettably, upon review of the calendars of its members, the Court has decided that it would not be possible to conduct the visit within the first quarter of 2011.

9. Appointment of Secretariat, Registrar, and Treasurer

9.1 Pursuant to Paragraph 15(a) of Annexure G and with the Parties' approval, the Court made the following appointments during the First Meeting:

9.1.1 The Permanent Court of Arbitration as Secretariat,

9.1.2 Mr Aloysius P. Llamzon, Legal Counsel of the PCA, as Registrar, and

9.1.3 Mr Brooks W. Daly, Deputy Secretary-General and Principal Legal Counsel of the PCA, as Treasurer.

10. Transcription of Hearings and Meetings

10.1 The Court takes note of the Parties' agreement that verbatim transcripts of hearings and meetings be taken in these proceedings.

10.2 In accordance with Paragraph 19 of Annexure G, the Secretariat shall arrange for the verbatim transcription of hearings and meetings. Such transcripts, when signed by the Chairman, shall constitute minutes for the purposes of Paragraph 19 of Annexure G.

24. After hearing the Parties' views during the First Meeting and receiving further communications from the Parties pursuant to paragraph 2 of Procedural Order No. 1, the Court issued **Procedural Order No. 2** dated 16 March 2011, in which it adopted a set of "Supplemental Rules of Procedure" to apply in these proceedings subject to the Treaty, the procedural orders of the Court, and the Terms of Appointment.[3]

25. As recorded in paragraph 4.1 of Procedural Order No. 1, India gave notice, prior to the Court's First Meeting, that it would "urge preliminary objections which go to the maintainability of

[3] Procedural Order No. 2, para. 1.1.

Pakistan's Request for Arbitration, including the competence of the Court of Arbitration to deal with the differences mentioned in the Request for Arbitration." Procedural Order No. 1 set out a schedule for the consideration of any preliminary objections.

26. However, by e-mail communication dated 7 July 2011, India informed the Court that it no longer intended to "lodge preliminary objections to jurisdiction," and that "[o]bjections to admissibility, pursuant to Article 12(2) of the Supplemental Rules of Procedure, would be addressed at the appropriate stage of the proceedings."

D. CONFIDENTIALITY

27. With respect to confidentiality, Paragraph 19 of Annexure G provides:

> The Chairman of the Court shall control the discussions. The discussions shall not be open to the public unless it is so decided by the Court with the consent of the Parties. The discussions shall be recorded in minutes drawn up by the Secretaries appointed by the Chairman. These minutes shall be signed by the Chairman and shall alone have an authentic character.

28. During the First Meeting, the Parties agreed that all written pleadings and any other documents or evidence relating to these proceedings were to remain confidential unless otherwise agreed. The Court noted this agreement in paragraph 7 of Procedural Order No. 1, while also establishing a timeline for further consultation between the Parties concerning the possible opening of the hearing on the merits to the public, and the publication of the written pleadings, supporting documents, rules of procedure, procedural orders and the Award to be rendered by the Court.

29. On 10 July 2012, the Court invited the Parties to submit to the Court their agreed views on the matters set out in paragraph 7 of Procedural Order No. 1.

30. By e-mail communication dated 20 July 2012, India stated its view that the pleadings and case documents should be made available to the public at the start of the oral hearing. It also suggested that the hearing be broadcast and open to the public. Finally, India supported making the Award available to the public.

31. By e-mail communication dated 7 August 2012, Pakistan stated its wish to keep the proceedings confidential. Pakistan was willing however to support the issuance of a press release at the conclusion of the hearing and the publication of the Court's Award.

32. After further discussion between the Parties and with the Chairman at the hearing on the merits, the PCA issued, on 20 August and 1 September 2012, two press releases concerning the opening and closing of the hearing respectively.[4]

E. THE COURT'S FIRST SITE VISIT

33. During the First Meeting of the Court, the Parties had agreed that it would be desirable for the Court to conduct a site visit to the pertinent facilities and locations of the KHEP as well as to the Neelum Valley and Pakistan's Neelum-Jhelum Hydro-Electric Project (the "**NJHEP**").

34. Pursuant to Procedural Order No. 1, the Court invited the Parties to confer and agree upon a joint itinerary and other arrangements for the site visit. The Parties exchanged views on 18 March 2011.

35. By e-mail communication dated 21 March 2011, the PCA transmitted to the Parties the Court's instructions concerning the site visit, providing that: (1) the dates of 15-21 June 2011 would be set aside as the optimum dates for the conduct of the site visit; (2) the Court would be prepared to conduct the site visit in accordance with a "jointly agreed itinerary proposed by the Parties," which the Parties were requested to propose by no later than 29 April 2011; and (3) the Court had provisionally reserved 12-18 February 2012 for the possible conduct of a second site visit should such a visit be deemed necessary or appropriate.

36. Having considered further communications from the Parties regarding the site visit, the Court issued **Procedural Order No. 3** on 10 May 2011, deciding the itinerary of the proposed visit, the size of the delegations, matters concerning the confidentiality of the site visit and the manner in which the costs were to be apportioned between the Parties. The operative parts of Procedural Order No. 3 are as follows:

> **1. The Site Visit Program**
>
> 1.1 The Court takes note of the Parties' agreement on the "broad outline of the itinerary", as follows:

DAY	DETAILS OF VISIT	PROPOSED DAY AND DATE	START TIME
Day 1	Arrival of members of [the Court] and Indian Delegation at Islamabad	Wednesday/Thursday, June 15/16, 2011	

[4] *See* http://www.pca-cpa.org/showpage.asp?pag_id=1392.

Day 2	Visit to the Neelum Valley	Thursday, June 16, 2011	0800 hours
	Return to Hotel		1500 hours
Day 3	Visit to NJ Power House Sites	Friday, June 17, 2011	0800 hours
	Proceed to Chakothi Border on Muzaffarabad Srinagar Road, Crossing the [Line of Control] and immigration process		1300 hours
	Departure to Srinagar for night stay		1800 hours
Day 4	Visit to Dam Site of Kishenganga	Saturday, June 18, 2011	0800 hours
	Departure to Srinagar for night stay		1500 hours
Day 5	Visit to Kishenganga Power House Site	Sunday, June 19, 2011	0800 hours
	Departure to Srinagar for night stay		1530 hours
Day 6	Srinagar to Delhi, stay in New Delhi	Monday, June 20, 2011	1100-1400 hours
	Departure of members of [the Court] and Pakistan Delegation to their respective destinations		

1.2 Having found the foregoing acceptable, the Court hereby adopts the outline of the itinerary proposed by the Parties on April 29, 2011.

2. Size of Delegations

2.1 The Court takes note of the Parties' agreement that their respective delegations (including the Agent, Co-Agents, counsel, and experts) each be limited to not more than 10 persons for logistical reasons.

2.2 The Court's delegation shall similarly be comprised of not more than 10 persons, including all the Members of the Court, the Registrar, and the members of the Secretariat involved in documentation and logistical support to the Court.

3. Confidentiality; Press Release

3.1 While both Parties have affirmed the importance of the rules on confidentiality in relation to the site visit, the Court takes note of the Parties' lack of agreement on whether a press release should be issued by the Court upon the conclusion of the visit. India has proposed that a press release whose text has been agreed between the Parties be issued by the Court at the end of the visit, while Pakistan maintains that confidentiality is necessary under the circumstances and does not wish the Court to issue such a press release.

3.2 Recalling the principles on confidentiality that govern this arbitration (including Paragraph 7 of Procedural Order No. 1) and taking into account the lack of agreement between the Parties, the Court considers that no public disclosure of the site visit, including any statement to the press emanating from the Court, can be made.

3.3 The Court hereby orders that:

(a) There shall be no advance public announcements of the fact that a site visit shall be conducted, nor of the dates and itineraries thereof. The Parties are enjoined to ensure the absolute confidentiality of all information relating to the site visit until the visit has been concluded.

(b) If both Parties agree at any point before or during the site visit, the Court may issue a press release in consultation with the Parties, to be issued only after the conclusion of the visit on June 21, 2011. However, if both Parties do not so agree, then no press release nor other public statement shall be issued by the Court.

4. Hospitality/Social Events

4.1 The Court takes note of the Parties' agreement that the site visit "be as discreet as possible without any social events", of India's suggestion that "this should not exclude any reasonable hospitality by Government authorities", and of Pakistan's request that India clarify the meaning of "reasonable hospitality".

4.2 Without limiting the Parties' freedom to reach agreement on this matter, the Court expresses its availability to attend any simple dinner event that a Party may wish to prepare, if that dinner includes and is restricted to the members of both delegations participating in the site visit.

5. Presentations During the Site Visit

5.1 The Court takes note of the Parties' agreement that any presentations made during the site visit be limited to objective, technical presentations made by experts (whether members of the official delegations or other experts), and that legal issues or arguments should not be discussed at any point during such presentations. The Court agrees with this approach and wishes to emphasize that presentations should be succinct and remain neutral in tone.

5.2 The Members of the Court shall be free to put questions at any time during a presentation. No member of any delegation shall be permitted to ask questions during or after a presentation. With the Chairman of the Court's leave, the non-presenting delegation may respond to a point made in a presentation, such response shall be limited strictly to technical or factual matters.

5.3 Any materials meant to be distributed during such presentations (including maps, plans, technical illustrations, and similar documents), shall be provided to the Court and the other Party no later than May 31, 2011.

5.4 For the avoidance of doubt, the site visit (including the presentations made therein) shall not be considered "oral hearings" or "oral submissions" within the meaning of Article 14 of the Supplemental Rules of Procedure.

6. Record of the Site Visit

6.1 The Court takes note of Pakistan's statement that "on the matter of record of the site visit, no doubt that members of the delegation would be taking notes; however, we are of the view that it would be useful to have a permanent record" of the presentations made during the site visit, and of its proposal that the PCA "make necessary arrangements for a video recording of the entire visit." For its part, India has suggested that "[e]ither side will arrange videography/photography on its side" while expressing that it is "open to any directions from the Court" on this point.

6.2 Within their respective delegations, the Parties are free to take their own notes. These need not be shared with the Court or the other Party.

6.3 The Members of the Court and its Secretariat shall be free to take notes and photographs for exclusive use in internal deliberations. The Secretariat shall also take charge of producing a video recording of all presentations made, and shall make a copy thereof for each Party.

7. Costs of the Site Visit

7.1 The Court takes note of the Parties' agreement that each Party shall bear all costs of the site visit within their respective territories, including hotel accommodations and internal transportation.

7.2 Pursuant to Article 21 of the Supplemental Rules of Procedure, all other expenses relating to the site visit shall be borne equally by the Parties.

8. Further Arrangements

8.1 The Court takes note of India's statement that "[i]f the proposed outline programme of the visit to India and Pakistan is generally acceptable to the Court, then we can mutually discuss the further details, including the logistics", and Pakistan's observation that the Parties have yet to "reach agreement on some of the modalities" of the site visit.

8.2 Within the framework of this Order, the Court invites the Parties to continue conferring on the remaining logistical issues, and to report back to the Court with further points of agreement no later than May 23, 2011. The logistical issues to be agreed upon should include but not necessarily be limited to the following: (a) arrangements to ensure the security of each member of the Court at all times; (b) a detailed (by-the-hour) itinerary, to the extent possible; (c) provisions for medical support; (d) lists of the Parties' delegations and experts that will address the Court during the site visit, (e) hotel arrangements, and (f) modes of internal transportation.

37. By e-mail communications dated 12 June 2011, India and Pakistan submitted slides and visual aids to be used during the site visit. By e-mail communication of 13 June 2011, India objected to Pakistan's submitted presentations and on 14 June 2011, the Court informed India that it would be afforded the opportunity to raise its objections to any particular presentation of Pakistan after that presentation was made during the site visit. India's objections were subsequently expressed during Pakistan's presentations and were noted by the Court.

38. From 15 to 21 June 2011, a site visit to the KHEP, the NJHEP and surrounding areas located on the Kishenganga/Neelum River was conducted. Thirty persons, ten representatives from each Party[5] plus a ten-member delegation from the Court of Arbitration,[6] participated in it. The

[5] Pakistan's delegation was comprised of: Mr Kamal Majidulla, Agent for Pakistan and Special Assistant to the Prime Minister on Water Resources and Agriculture; Mr Khalil Ahmad, Ambassador at Large, Co-agent; Mr Mohammed Karim Khan Agha, Additional Attorney General for Pakistan, Co-agent; Mr Sheraz Jamil Memon, Pakistan's Commissioner for Indus Waters, Co-agent; Prof. James Crawford, Counsel; Mr Samuel Wordsworth, Counsel; Ms Shamila Mahmood, Counsel; Mr Farhat Mir, Secretary of Planning and Development, Government of Azad Jammu and Kashmir; Mr Mirza Asif Baig, Expert; and Mr Mehr Ali Shah, Expert.

India's delegation was comprised of: Mr Dhruv Vijai Singh, Agent for India and Secretary, Ministry of Water Resources; Mr Narinder Singh, Co-agent; Mr G. Aranganathan, Co-agent; Mr A. K. Bajaj, Chairman, Central Water Commission; Mr R.K.P. Shankardass, Counsel; Prof. Stephen C. McCaffrey, Counsel; Prof. Daniel Magraw, Counsel; Mr Darpan Talwar, Senior Joint Commissioner (Indus), Ministry of Water Resources; Mr Balraj Joshi, Expert; and Dr S. Sathyakumar, Expert.

Court arrived in Islamabad on 15 June 2011, visited the Neelum Valley by helicopter, and inspected components of the NJHEP. The Court then crossed the Line of Control on 17 June 2011 and proceeded to Srinagar. On 18 and 19 June 2011, travelling by helicopter and ground transport, the Court inspected components of the KHEP located in the Gurez Valley and the area near Bandipura north of Wular Lake. It then departed from India by way of New Delhi on 20 and 21 June 2011.

39. On 22 June 2011, the PCA published a press release approved by both Parties concerning the site visit as well as a photograph of the Court taken during the site visit.

40. Pursuant to paragraph 6 of Procedural Order No. 3, on 2 August 2011, the PCA transmitted to the Parties and the Members of the Court a set of four DVD-format discs containing videos of the various presentations made during the site visit, and photographs of the site visit.

F. PAKISTAN'S APPLICATION FOR INTERIM MEASURES

41. Paragraph 28 of Annexure G to the Treaty provides:

> 28. Either Party may request the Court at its first meeting to lay down, pending its Award, such interim measures as, in the opinion of that Party, are necessary to safeguard its interests under the Treaty with respect to the matter in dispute, or to avoid prejudice to the final solution or aggravation or extension of the dispute. The Court shall, thereupon, after having afforded an adequate hearing to each Party, decide, by a majority, consisting of at least four members of the Court, whether any interim measures are necessary for the reasons hereinbefore stated and, if so, shall specify such measures: Provided that
>
> a) the Court shall lay down such interim measures only for such specified period as, in its opinion, will be necessary to render the Award: this period may, if necessary, be extended unless the delay in rendering the Award is due to any delay on the part of the Party which requested the interim measures in supplying such information as may be required by the other Party or by the Court in connection with the dispute; and
>
> b) the specification of such interim measures shall not be construed as an indication of any view of the Court on the merits of the dispute.

42. In paragraph 10 of its Request for Arbitration, Pakistan stated:

> Accordingly, pursuant to Annexure G, paragraph 28 of the Treaty, Pakistan will request the Court at its first meeting to lay down, pending its Award, interim measures both to

---

[6] The Court's delegation included all the Members of the Court as well as three members of the Secretariat: Mr Aloysius Llamzon, Registrar and Legal Counsel; Mr Dirk Pulkowski, Legal Counsel; and Mr Garth Schofield, Legal Counsel.

> safeguard Pakistan's interests under the Treaty with respect to the matters in dispute and to avoid prejudice to the final solution and aggravation or extension of the dispute.

43. Pakistan sought:

> An interim order restraining India from proceeding further with the planned diversion of the river Kishenganga/Neelum until such time as the legality of the diversion is finally determined by a Court of Arbitration.[7]

44. During the Court's First Meeting, Pakistan made the following statement in respect of provisional measures:

> Our assessment of the present situation along the Kishenganga is that while the plan certainly envisages works on the Indus that would breach the Indus Waters Treaty and cause great harm to Pakistan, the project is not yet so far advanced that such harm is imminent.
>
> We are aware of the principle of international law, applied for example by the International Court [of Justice] in paragraphs 30-33 of its Order on provisional measures in the Great Belt case, that in cases such as the present a State engaged in works that may violate the rights of another State can proceed only at its own risk. The court may, in its decision on the merits, order that the works must not be continued or must be modified or dismantled.
>
> We are content at this stage to rely upon that principle.
>
> Major construction projects are, however, not easily reversible processes. The excavation of construction sites and the filling of dams cannot easily be undone. Equally importantly, costs are not incurred in a regular and uniform fashion. There are points at which major investments of capital and resources have to be made. Beyond those points a State might find it more difficult to abandon the project and restore the *status quo ante*.
>
> We therefore invite India to give an undertaking to inform the Court, and at the same time the Government of Pakistan, of any actual or imminent developments or steps in relation to the Kishenganga project that it considers would have a significant adverse effect upon the practicality of abandoning the project and restoring the *status quo ante*, or would in any other way seriously jeopardize Pakistan's interests.
>
> On that basis, and on the understanding that we may apply to the Court for provisional measures at any point in the future should it become apparent (whether as a result of a communication from India or otherwise) that the ordering of such measures is an urgent necessity, we have decided to make no application for provisional measures at this meeting.[8]

45. By e-mail communication dated 6 March 2011, Pakistan requested that India provide, by 17 March 2011, its comments on: (1) India's understanding of the "proceed at your own risk" principle outlined by the International Court of Justice in the *Great Belt* case;[9] (2) the status of the undertaking to inform Pakistan and the Court of "any actual imminent steps in relation to

---

[7] Pakistan's Request for Arbitration, para. 54(a).

[8] First Meeting Tr., 14 January 2010, at 19:22 to 21:12.

[9] *Passage through the Great Belt (Finland v. Denmark)*, Provisional Measures, Order of 29 July 1991, I.C.J. Reports 1991, p. 12.

the KHEP that it considers would have a significant adverse effect upon the practicability of abandoning the project and restoring the *status quo ante* or would in any other way seriously jeopardize Pakistan's interests"; (3) the current state of works at the site; and (4) the planned date for diversion of the river.

46. By e-mail communication dated 17 March 2011, India replied that: (1) in its understanding the "proceed at your own risk" principle was "covered by the existing International Law"; (2) as a consequence of Pakistan's decision, expressed at the First Meeting of the Court, to forego lodging an application for provisional measures, it would be inappropriate for Pakistan to be "seeking any unilateral undertakings on the part of India"; (3) India would address the question of the status of current construction in "substantive pleadings on the merits according to the schedule laid down by the Court"; and (4) the "planned date of diversion is not before 2015."

47. By e-mail communication dated 6 June 2011, Pakistan submitted an application for provisional measures.

48. On 7 June 2011, India requested "adequate time to respond to Pakistan's application" and submitted that Pakistan's application should have been filed earlier, especially because "India's last letter to Pakistan was on 17 March 2011." India also recalled that at the Court's First Meeting, Pakistan had stated that it would not make an application for provisional measures.

49. Through the Registrar, the Court communicated a proposed procedural schedule for considering Pakistan's application for provisional measures. After considering the comments of the Parties, the Court issued **Procedural Order No. 4** on 12 June 2011 deciding on a schedule for written submissions and on a hearing to be held at the Peace Palace in The Hague, from 25 to 27 August 2011.

50. By e-mail communication dated 30 June 2011, Pakistan recalled to the Court the statement made by India during the course of the site visit according to which "the temporary tunnel at the Kishenganga dam site is 100% complete" and the "river would be dammed at the site in November 2011." Pakistan submitted that a

> section of the Kishenganga/Neelum River would be diverted as a result, however, the interference in the flow of the river at this section is intended to be permanent—the former riverbed would be lost, and would become a construction site for the permanent 37m high dam structure . . . Pakistan considers that the imminence of these works adds a further element of urgency to its Application.

51. On 22 July 2011, India submitted a response to Pakistan's application for provisional measures.

52. After consulting the Parties, on 26 July 2011, the Court issued **Procedural Order No. 5**, determining that the hearing on interim measures would be organized in two rounds of oral argument, starting with statements by Pakistan on the first day, by India on the second, and reply and closing statements by both Parties on the final day of the hearing.

53. On 3 August 2011, Pakistan submitted a reply to India's response to Pakistan's application for provisional measures. On 15 August 2011, India submitted a rejoinder to Pakistan's reply.

54. The Court held a hearing on interim measures at the Peace Palace in The Hague, from 25 to 27 August 2011. The following persons participated:

The Court of Arbitration
Judge Stephen M. Schwebel (Chairman)
Sir Franklin Berman KCMG QC
Professor Howard S. Wheater FREng
Professor Lucius Caflisch
Professor Jan Paulsson
H.E. Judge Bruno Simma
H.E. Judge Peter Tomka

Pakistan
Mr Kamal Majidulla, Agent
H.E. Khalil Ahmed, Ambassador at Large, Co-agent
Mr Mohammad Karim Khan Agha, Additional Attorney General for Pakistan, Co-agent
Mr Aijaz Ahmed Pitafi, Joint Commissioner for Indus Waters
Prof. James Crawford *(by telephone conference)*
Prof. Vaughan Lowe, Legal Counsel
Mr Samuel Wordsworth, Legal Counsel
Ms Shamila Mahmood, Legal Counsel
H.E. Ambassador Aizaz Chaudhry, Ambassador for Pakistan to the Netherlands
Mr Asif Baig, Technical Expert
Mr Mehr Ali Shah, Technical Expert

India
Mr Dhruv Vijai Singh, Agent
H.E. Bhaswati Mukherjee, Ambassador of India, The Hague
Mr A.K. Bajaj, Chairman, Central Water Commission, Technical Advisor
Dr Pankaj Sharma, Minister, Indian Embassy, The Hague
Mr Fali S. Nariman, Counsel
Mr R.K.P. Shankardass, Counsel
Prof. Stephen C. McCaffrey, Counsel
Mr Rodman Bundy, Counsel
Prof. Daniel Magraw, Counsel
Mr S.C. Sharma, Counsel
Mr Y.K. Sinha, Co-Agent
Mr Narinder Singh, Co-Agent
Mr K.S. Nagaraja, Executive Director NHPC
Mr G. Aranganathan, Co-Agent
Mr Darpan Talwar, SJC (Indus), Technical Advisor

The Secretariat
Mr Aloysius Llamzon, Registrar and Legal Counsel
Mr Dirk Pulkowski, Legal Counsel
Mr Garth Schofield, Legal Counsel
Ms Anna Vinnik, Assistant Legal Counsel
Ms Willemijn van Banning, Legal Secretary

Court Reporters
Mr David Kasdan
Mr Randy Salzman

55. The following persons presented oral arguments before the Court on behalf of Pakistan:

Mr Kamal Majidulla, Agent for Pakistan
Prof. Vaughan Lowe, Legal Counsel
Mr Samuel Wordsworth, Legal Counsel

56. The following persons presented oral arguments before the Court on behalf of India:

Mr Dhruv Vijai Singh, Agent for India
Mr Fali S. Nariman, Counsel
Mr R.K. P. Shankardass, Counsel
Mr Rodman Bundy, Counsel
Prof. Stephen C. McCaffrey, Counsel
Prof. Daniel Magraw, Counsel

57. On 27 August 2011, Professor Wheater requested India to provide information on the following points with respect to the technical aspects of the proposed KHEP dam:

(1) One or more cross-sections of the dam.

(2) A drawing of the dam elevation showing the location of the proposed spillways and any other discharge outlets with respect to design levels of water elevation, such as the drawing provided for the Baglihar dam in Volume 7 of Pakistan's Memorial at Figure 5.2.1. on Page 141.

(3) Specification of the hydraulic design of the proposed spillways and any other downstream outlet works; that is, the capacity of the dam to transmit flows downstream as a function of the ponded water level.

(4) The intended mode of operation of India, including the transmission of flows downstream to meet the needs of existing uses as specified in the Treaty, any environmental flows and for sediment flushing.

(5) A diagram showing the upstream extent of inundation at the Full Pondage Level and under surcharge storage; that is, during the passage of the design flood, including the location of any nearby upstream riparian settlements, and such a document could be a plan view of the inundated areas.

(6) India's Environmental Impact Assessment for the dam.

(7) An outline schedule of the proposed construction works; that is including the currently proposed timing of the key phases of the construction of the dam.[10]

[10] Interim Measures Hearing Tr., (Day 3), 27 August 2011, at 201:6 to 202:25.

58. The Chairman of the Court asked India to provide the technical data and construction schedules requested by Professor Wheater at the latest by 2 September 2011, and Pakistan to submit its comments on those data, should it wish to do so, no later than on 7 September 2011.[11]

59. On 2 September 2011, India wrote to the Court in relation to the data requested by Professor Wheater. India's Agent confirmed that most of the documents requested had been provided earlier to Pakistan, and identified those that were included as documentary exhibits in Pakistan's Memorial. He also confirmed that apart from the documents already provided by India during the hearing on interim measures, further documentation (including that concerning India's environmental impact assessment for the dam) would be produced in India's Counter-Memorial.

60. On 7 September 2011, Pakistan commented on India's communication of 2 September 2011 and provided the Court with two additional documents previously referred to by Pakistan during the hearing.

61. The Court issued its Order on the Interim Measures Application of Pakistan dated June 6, 2011 ("**Order on Interim Measures")** on 23 September 2011. The operative provisions of the Order read:

> 152. Having found that it is necessary to lay down certain interim measures in order to "avoid prejudice to the final solution . . . of the dispute" as provided under Paragraph 28 of Annexure G to the Indus Waters Treaty, the Court unanimously rules that:
>
> (1) For the duration of these proceedings up until the rendering of the Award,
>
> (a) It is open to India to continue with all works relating to the Kishenganga Hydro-Electric Project, except for the works specified in (c) below;
>
> (b) India may utilize the temporary diversion tunnel it is said to have completed at the Gurez site, and may construct and complete temporary cofferdams to permit the operation of the temporary diversion tunnel, such tunnel being provisionally determined to constitute a "temporary by-pass" within the meaning of Article I(15)(b) as it relates to Article III(2) of the Treaty;
>
> (c) Except for the sub-surface foundations of the dam stated in paragraph 151(iv) above, India shall not proceed with the construction of any permanent works on or above the Kishenganga/Neelum River riverbed at the Gurez site that may inhibit the restoration of the full flow of that river to its natural channel; and

[11] Interim Measures Hearing Tr., (Day 3), 27 August 2011, at 294:10-16.

(2) Pakistan and India shall arrange for periodic joint inspections of the dam site at Gurez in order to monitor the implementation of sub-paragraph 1(c) above. The Parties shall also submit, by no later than December 19, 2011, a joint report setting forth the areas of agreement and any points of disagreement that may arise between the Parties concerning the implementation of this Order.

153. The Court shall remain actively seized of this matter, and may revise this Order or issue further orders at any time in light of the circumstances then obtaining.

62. On 26 September 2011, as directed by the Court, the PCA made the Order on Interim Measures available to the public through the PCA's website, where it remains.[12]

G. THE IMPLEMENTATION OF THE ORDER ON INTERIM MEASURES

63. Pursuant to paragraph 152(2) of the Order on Interim Measures, providing that "Pakistan and India shall arrange for periodic joint inspections of the dam site at Gurez in order to monitor the implementation of sub-paragraph 1(c) above," the Parties exchanged communications in October and early November 2011 discussing the timing and other aspects of the joint inspections.

64. As the Parties were unable to agree on dates for the joint inspections, on 8 November 2011, India sent the Court a letter enclosing the communications exchanged by the Parties and requested that the Court give the Parties "suitable directions."

65. On 24 November 2011, after receiving the Parties' respective views on India's request for directions, the Court indicated that the joint report required by paragraph 152(2) of the Order on Interim Measures "is meant to provide an opportunity for the Parties to raise any issues they may have concerning the interpretation and implementation of the Order, including the timing and frequency of periodic joint inspections of the dam site at Gurez. . . . If the parties are unable to agree on such a schedule, that disagreement should be articulated in the Report."

66. After further correspondence discussing areas of agreement and disagreement, the Parties jointly submitted a report on 19 December 2011 pursuant to paragraph 152 of the Order on Interim Measures. In that report, the Parties stated that they disagreed about: (1) the scope of the Order; (2) the timing and frequency of the joint inspections; (3) the size of the delegations for the first joint inspection; and (4) the duration of that inspection. The Parties agreed that the expenses for any joint inspection would be borne equally by the Parties.

[12] *See* http://www.pca-cpa.org/showpage.asp?pag_id=1392.

67. On 30 December 2011, the Court issued **Procedural Order No. 6** (*Concerning the Joint Report dated December 19, 2011 Submitted Pursuant to Paragraph 152(2) of the Order on Interim Measures*), in which it decided that: (1) two joint inspections, one to be conducted at the earliest practicable time in spring 2012 and the other at the latest practicable time in fall 2012, would be sufficient to monitor the implementation of the Order on Interim Measures; (2) the delegation of each Party for the joint inspections would comprise up to three members; and (3) in good weather, the joint inspections would last two days if the delegations were to travel by helicopter and three to four days if they were to travel by road.

68. After a series of e-mail communications in April 2012, the Parties agreed to hold a joint inspection of the Gurez dam construction site during the week of 7 May 2012.

69. On 8 May 2012, a three-member delegation from each Party[13] travelled to Srinagar and proceeded by helicopter to the Gurez dam site.

70. Pursuant to paragraph 152(2) of the Order on Interim Measures, the Parties notified the Court of their attempts to agree on a joint report on the joint inspection of 8 May 2012. In the absence of agreement on the content of a joint report, the Parties agreed to submit separate reports regarding the joint inspection. These were received by the Court on 31 May 2012.

71. In its report, Pakistan quoted paragraph 152 of the Order on Interim Measures and further stated:

> Thus, the purpose of the inspection was to determine: (1) the status of the temporary diversion tunnel and cofferdam, (2) the status of sub-surface foundations, and (3) the status of any permanent works on or above the Kishenganga/Neelum River riverbed that may inhibit restoration of the full flow of that river to its natural channel.
>
> Itinerary:
>
> The site inspection was initiated by a thirty minute military helicopter flight which departed the Srinagar airport at approximately 8:30 AM. After landing, approximately thirty additional minutes were required for transport by automobile to the dam site.
>
> Shortly after arrival at the dam site the Pakistan delegation walked the length of the works in the company of the Indian representatives, including representatives of the construction contractor. The works in progress were observed and queries were raised which were answered by the contractor's representatives. However, photography of the works, the surrounding area or the river was not allowed during the inspection. As such, there is no photographic documentation.

[13] Pakistan's delegation was comprised of Mr Asif Baig, Dr Gregory Morris and Ms Shamila Mahmood. India's delegation was comprised of Mr G. Aranganathan, Mr Darpan Talwar and Prof. K.G. Rangaraju.

The site visit was concluded with refreshments and snacks. We began the road journey back to the helicopter at noon for the return flight.

Observations:

The following observations were made during the site visit.

1. Status of the temporary diversion tunnel and cofferdam. Excavation of the diversion tunnel was reportedly completed, but we did not enter the tunnel to confirm. The vertical sluice gate at the tunnel entrance was not yet installed, as concrete work was still in progress and neither the gate guides or other operating mechanisms had been installed or were visible on site. Work had not been initiated on the cofferdam.

2. Status of sub-surface foundations. There was no evidence that any foundation work for the dam had been initiated, and not having diverted the river such work would be essentially impossible to undertake in any event.

3. Status of any permanent works on or above the Kishenganga/Neelum River riverbed that may inhibit restoration of the full flow of that river to its natural channel. The only "permanent" work that was visible during the visit was rock excavation on the left abutment, in the general area where the spillway and related works will be located. There was a large mass of rock spoil on the left overbank of the river but there was no evidence that concrete work has been initiated in this area, other than the portals for the river diversion tunnel. Although the river channel was somewhat restricted by placement of the construction road, the rusted condition of the gabions running along the left riverbank gave evidence that this condition has been present for some time.

72. In its report, India also quoted from paragraph 152 of the Order on Interim Measures and further summarized as follows:

B. The areas of agreement between the Parties:

4. India has not proceeded with the construction of any permanent works on or above the Kishenganga/Neelum River riverbed at the Gurez site that may inhibit the restoration of the full flow of that river to its natural channel.

C. The areas of disagreement between the Parties:

5. Pakistan takes a broader view of the scope of inspection than is specified by the Court Order.

73. On 5 October 2012, after further correspondence between the Parties, the Court issued **Procedural Order No. 11** (*Concerning the Second Joint Inspection conducted pursuant to Paragraph 152(2) of the Order on Interim Measures and Paragraph 2.2 of Procedural Order No. 6*)**:**

1 Scope of the Joint Inspection

1.1 The Court understands the disagreement between the Parties on the scope of the joint inspection to center on the parts of the dam site at Gurez that should be made available to Pakistan for inspection. India maintains that "*as per the Court's Order [on Interim Measures] dated 23 September 2011 the visit would be limited to inspecting the status of construction of permanent works, if any, on or above the Kishenganga/Neelum riverbed that may inhibit the restoration of the full flow of that river to its natural channel. Temporary diversion tunnels and cofferdams are not permanent works and, in our view, do not fall within the ambit of the joint*

inspection." By contrast, Pakistan "*is of the considered view that the Order requires the Parties to conduct joint inspections of the dam site at Gurez and does not limit the extent of the inspection or exclude any works from inspection. An inspection of all works and the entire site is considered necessary to determine the permanence and capability of the works constructed and whether these works will or will not inhibit the restoration of the full flow of the river to its natural channel.*"

1.2 Having considered the Parties' positions, the Court determines that the monitoring of compliance with the Interim Measures Order necessitates the inspection of all works at the dam site at Gurez that are constructed on or above the Kishenganga/Neelum's natural riverbed.

1.3 Accordingly, in carrying out the joint inspection of the dam site at Gurez pursuant to paragraph 152(2) of the Order on Interim Measures, the Parties may undertake the following:

(a) view and inspect the reach of the Kishenganga/Neelum River from the upstream cofferdam through to the downstream cofferdam; and

(b) view and inspect any works, existing or under construction, that are physically located on or above the Kishenganga/Neelum's natural riverbed in the area between the upstream cofferdam and the downstream cofferdam.

1.4 For the avoidance of doubt, the Court emphasizes that although the Parties may see during the inspection the cofferdams and any excavation works or subsurface foundations of the dam located on the riverbed, such works are expressly permitted by the Court's Order on Interim Measures and shall not be construed as a breach of the Order so long as they comply with paragraph 152(1)(c) of the Order.

2. Joint Inspection Report

2.1 In preparing any report to the Court on the conduct of the joint inspection, the Parties are not restricted to identifying the existence or otherwise of "permanent works on or above the Kishenganga/Neelum riverbed at the Gurez site that may inhibit the restoration of the full flow of that river to its natural channel." The Parties may, to the extent necessary to give context to the joint report, briefly describe the condition of the river and its bed in the area between the cofferdams, along with the status of any works (existing or under construction) or features viewed over the course of the inspection that bear direct relevance to the monitoring of compliance with the Interim Measures Order.

2.2 In the event that the Parties are unable to reach agreement on the content of a joint report, they may submit a joint report setting forth the remaining areas of disagreement or, if necessary, submit separate reports.

74. On 14 October 2012, a second joint inspection was conducted, during which three-member[14] delegations of the Parties visited the KHEP site at Gurez.

75. Having been unable to reach agreement on the content of a joint report on the second joint inspection, the Parties submitted separate reports to the Court on 26 and 30 November 2012. In its report, Pakistan quoted paragraph 159 of the Order on Interim Measures and from Procedural Order No. 11, and further stated:

[14] Pakistan's delegation was comprised of Mr Asif Baig, Dr Gregory Morris and Ms Shamila Mahmood. India's delegation was comprised of Mr G. Aranganathan, Dr Neeru Chadha and Prof. K.G. Rangaraju.

Thus, the purpose of the inspection was to determine: (1) the status of the river diversion works, (2) the status of sub-surface foundations, and (3) the status of any permanent works on or above the Kishenganga/Neelum riverbed that may inhibit restoration of the full flow of that river to its natural channel.

A. Itinerary:

[. . .]

B. Observations:

The following observations were made during the site visit.

1. Status of the temporary diversion tunnel and cofferdam. The upstream cofferdam had been constructed of rock and earth, and contained a clay core. It was in operation and river flow was being diverted into the diversion tunnel. Based on the evidence of sediment deposits along the river banks, the backwater area created by the diversion tunnel extends approximately one kilometre upstream of the cofferdam.

   The downstream cofferdam extended almost the full width of the river, but was stopped about two meters from the opposite bank so that water can still pass this cofferdam.

   There was no evidence of disturbance to the riverbed upstream or downstream of the two cofferdams, except that a gravel crushing plant and stockpiles are located on the wide left-hand gravel bar a little more than a kilometre upstream of the dam, where the river starts to open into the Gurez Valley. This plant was also present during the May 2012 site visit.

2. Status of sub-surface foundations. There was no evidence that any foundation work for the dam had been initiated. Waste material from rock excavation on either abutment (including stones as large as 1.5 m diameter) had either fallen or been placed into the riverbed, and the riverbed extending approximately 100 meters downstream from the cofferdam had been filled with stone 2 to 3 meters deep. However, at the dam axis the original river bed was visible in places, and there was no evidence of any foundation work or other permanent structures. A concrete foundation approximately ½ meter thick had been placed along the axis of the cut-off wall, upstream of the dam axis. Upon enquiring, it was explained that this foundation was to support the drilling equipment that was going to determine the depth to bedrock, to create the template for cut-off wall construction. Although some drilling pipe was on the site, no drilling had been initiated and the drilling foundation was not yet completed.

3. Status of any permanent works on or above the Kishenganga/Neelum riverbed that may inhibit restoration of the full flow of that river to its natural channel. The only "permanent" work that was visible during the visit was rock excavation on both abutments, plus the diversion tunnel. A large mass of rock spoil had been placed along the left side of the river from the dam axis upstream for a distance of nearly one kilometre, but there is still ample width for the river to flow freely with inconsequential flow obstruction.

   All of the stone that has been placed in the riverbed is loose material that can be removed by heavy equipment to restore the river to its pre-construction geometry. There is no evidence of any concrete or other permanent works in the riverbed.

76. In its report, India also quoted from paragraph 152 of the Order on Interim Measures and Procedural Order No. 11 and further stated:

> 4. The Parties inspected the following works:

i. Upstream Cofferdam

ii. The reach of the river and river flow to the extent visible from its top.

iii. Inlet of the temporary diversion or by-pass tunnel with the river flow entering into it

iv. Reach between upstream cofferdam through to the downstream cofferdam

1. Preparation for sub-surface excavation

2. Hill slope on either side of the reach.

v. Downstream cofferdam

vi. The reach of the river and river flow to the extent visible from its top.

vii. Outlet of the temporary diversion or by-pass tunnel with the river flow being discharged from the diversion or by-pass tunnel into the natural course of the river downstream

5. There was no permanent work *on or above the Kishenganga/Neelum riverbed* that may inhibit the restoration of the full flow of that river to its natural channel at the dam site.

6 The Parties have no disagreement concerning the implementation of the "Court Order" as per the scope defined therein.[15]

H. THE COURT'S SECOND SITE VISIT

77. In an e-mail communication dated 6 December 2011, Pakistan requested the Court to conduct a second site visit in February 2012 as had been canvassed in the Court's letter to the Parties dated 21 March 2011 concerning the June 2011 site visit (*see* paragraph 35 above). The Court invited India to comment on Pakistan's request.

78. On 21 December 2011, India offered comments in an e-mail communication in which it stated that it would "leave the decision to the Court" about whether to conduct a second site visit.

79. On 30 December 2011, the Court transmitted to the Parties a draft of Procedural Order No. 7 (*Concerning the Second Site Visit*) for their comments, noting that it determined a second site visit to be appropriate.

80. The Parties provided their comments on the draft order on 9 January 2012. On 14 January 2012, Pakistan also provided the Court with a suggested itinerary for the second site visit.

81. The Court issued **Procedural Order No. 7** on 16 January 2012, providing that: (1) the second site visit would take place from 3 to 6 February 2012; (2) the Court's delegation would be comprised of three persons: two Members of the Court, Sir Franklin Berman and Professor

[15] Emphasis in the original.

Howard Wheater, and one member of the Secretariat;[16] (3) those Members of the Court not present would view the photos and video of the visit taken by the Secretariat; (4) experts who were not members of the official delegations would be allowed to brief and assist the delegations when *in situ*; and (5) there would be no advance public announcements of the visit, but a press release containing a text and photograph to be approved by the Parties and the Court would be prepared by the Secretariat for publication on the PCA website following the conclusion of the visit. In other respects, Procedural Order No. 7 provided that the arrangements for the second site visit would follow the practice established during the first site visit.

82. With the transmission of Procedural Order No. 7 and in response to India's comments of 9 January 2012 concerning potential factual presentations by Pakistan during the site visit and India's ability to reply, the Court indicated:

> The purpose of the second site visit is to give the Members of the Court a background impression of the relevant projects and areas surrounding the Kishenganga/Neelum River. As the Secretariat will be providing both Parties with copies of the photographs and video recordings taken, the Parties are free to submit any evidence they deem relevant in their future submissions in accordance with the Supplemental Rules.
>
> […]
>
> The Court is of the view that the second site visit does not constitute a "transaction of business" within the meaning of Paragraph 11 of Annexure G. The site visit is not an "oral hearing" in which "oral submissions" are made by the Parties, and those Members of the Court not present during the second visit will have an opportunity to review the video and photographic materials from the site visit (including videos of any presentations made) individually, just as they each review any submission or communication of the Parties. The Court also assures the Parties that its two physically participating Members shall not by themselves "transact business" at any point during the visit.

83. By e-mail communication dated 25 January 2012, India requested that the Court "direct Pakistan to make available to India by 27 January 2012 all presentations and all technical and factual matters proposed to be presented or briefed orally by Pakistan during the second site visit." India further commented that such a direction was necessary to "maintain the equality of

[16] With respect to the size of the Court's delegation, the Court stated as follows:

> The Court takes note of both Parties' willingness to accommodate a second site visit involving fewer than all Members of the Court if necessary, though the Court acknowledges that both Parties expressed their preference that the full Court or as many of its Members as possible attend. Regrettably, upon review of the calendar of its Members and other limiting factors, the Court has determined it would not be possible for all the Members of the Court to physically participate in the second site visit.

the Parties" so that India would not "be expected to respond spontaneously to the points to be made in Pakistan's presentations and oral briefings."

84. By e-mail communication dated 25 January 2012, Pakistan commented on India's e-mail communication of the same date, arguing that India's request was "superfluous" in light of the Parties' prior opportunity to comment on the draft order.

85. On 27 January 2012, the Registrar conveyed to the Parties the following statement from the Chairman of the Court:

> I acknowledge the Parties' respective e-mail communications of January 25, 2012, regarding the conduct of the second site visit. I take particular note of the Agent of Pakistan's assurance (i) that no formal presentations of the type made during the first site visit are anticipated, and (ii) that the experts would only conduct "an informal briefing at the site with the intention of describing what the Members of the Court happened to be looking at."
>
> On the basis of these representations from Pakistan, and noting that Pakistan's experts will not discuss legal issues or arguments, and that the experts' statements must be succinct and neutral in tone (para. 5.1, Procedural Order No. 7), I am of the view that:
>
> (1) the procedure to be followed with respect to any presentations or statements made during the second site visit—including the need for formal presentation materials (if any) to be provided in advance of the visit—has been addressed in Procedural Order No. 7, and no further directives from the Court are necessary in this regard; and
>
> (2) these proceedings afford the Parties no shortage of opportunity to address or comment on any matter arising from the second site visit; however, should any circumstance arise during the second site visit that one Party considers to be of grave prejudice that cannot be addressed over the ordinary course of the proceedings, immediate recourse to the Members of the Court present (and the Court itself, if necessary) is always available.
>
> Finally, I trust that all representatives of the Parties understand the basic rule prohibiting *ex parte* discussions with Members of the Court during the course of these proceedings. In the case of the second site visit, I trust that any potentially contentious matter, whether of substance or procedure, will not be raised *ex parte* by any Party representative to any member of the Court or Secretariat.

86. From 3 to 6 February 2012, a site visit to the Neelum Valley was conducted. Arriving in Islamabad on 3 February 2012, the Court's delegation, together with representatives from India and Pakistan,[17] travelled to Muzaffarabad. On 4 February, the delegation proceeded by road into the Neelum Valley and visited the gauge-discharge observation site at Dudhnial. The delegation also visited a water-pumping installation in the vicinity of Athmuqam and was

[17] Pakistan's delegation for the second site visit comprised Mr Kamal Majidulla, Ms Shamila Mahmood and Mr Mirza Asif Baig. India's delegation consisted of Mr Dhruv Vijai Singh, Mr Ram Chandra Jha and Mr Darpan Talwar. The Court's delegation consisted of Sir Franklin Berman and Prof. Howard Wheater, assisted by Mr Garth Schofield of the Secretariat.

briefed on lift irrigation practices in the Neelum Valley. The delegation returned to Islamabad on 5 February, and left Pakistan on 6 February 2012.

87. On 15 February 2012, the PCA published a press release approved by both Parties concerning the second site visit as well as three photographs taken during the visit.

88. Pursuant to Procedural Order No. 7, on 28 March 2012, the PCA transmitted to the Parties and the Members of the Court a set of two DVD-format disks containing videos of the presentations made during the second site visit, along with photographs.

I. THE PARTIES' WRITTEN SUBMISSIONS ON THE MERITS; REQUESTS FOR DOCUMENTS AND FURTHER INFORMATION

89. On 27 May 2011, Pakistan submitted its **Memorial,** accompanied by witness statements and expert reports. On 4 July 2011, Pakistan submitted a Volume 3 bis and a correction sheet addressing certain errata in the Memorial.

90. On 23 November 2011, India submitted its **Counter-Memorial**, accompanied by expert reports, technical documents, legal authorities and a list of errata.

91. By e-mail communication dated 22 December 2011, the Agent for Pakistan requested that the Agent for India provide copies of three documents referred to in India's Counter-Memorial: (1) a unredacted version of a letter dated 16 May 1960 from the Chairman of India's Central Water and Power Commission (the "**CWPC**") to India's Ministry for Irrigation and Power (known to the Parties as "Document IN-54" or "Annex IN-54" and hereinafter referred to as the "**CWPC Letter**"); (2) a letter dated 13 January 1958 referred to in the CWPC Letter; (3) the preliminary hydro-electric survey for the Indus basin which accompanied the letter of 13 January 1958; and (4) the revised or additional environmental impact assessments ("**EIAs**") and other surveys and reports prepared in respect of the reconfiguration of the KHEP in 2006.

92. By e-mail communication dated 5 January 2012, Pakistan also requested from India "further information as to the purpose for the construction of Adit 1 and the range of uses to which it could be put in the operation of the KHEP (including any use in diverting water from the valley in which its entrance is located into the KHEP plant)."

93. By e-mail communication dated 13 January 2012, India responded to Pakistan's request for documents. India further requested Pakistan to provide: (1) a copy of the EIA, environmental

management plan, and socio-economic impact assessment studies for the NJHEP; and (2) the technical details and EIAs of the four projects being planned upstream of the NJHEP.

94. On 21 January 2012, Pakistan submitted to the Court an application for production of a full copy of the CWPC Letter, arguing that an unredacted copy was essential for the presentation of its case.

95. Also on 21 January 2012, Pakistan responded to India's e-mail communication of 13 January 2012. Pakistan requested further information "as to where the [CWPC Letter] was located by India" as well as confirmation as to whether India's response regarding Pakistan's request for certain environmental reports "is that (i) the documents sought are not in existence or (ii) the documents are not being supplied for some other reason." Pakistan asked India for more specific information regarding its first request and referred India to paragraph 3.35 of Pakistan's Memorial for the identification of the four projects noted by India.

96. By e-mail communication dated 30 January 2012, India commented on Pakistan's application for production of a full copy of the CWPC Letter. Pakistan responded by e-mail communication dated 31 January 2012.

97. On 1 February 2012, the Court notified the Parties of the following procedure for consideration of Pakistan's application for production of the CWPC Letter:

> India is requested to provide to all Members of the Court (through the Registrar) a full copy of [the CWPC Letter] at India's earliest convenience, but in no case later than Tuesday, February 7, 2012.
>
> By no later than Tuesday, February 7, 2012, India is invited to provide its views on any applicable principle of State secrecy or privilege that the Court should take into account in deciding Pakistan's disclosure application.
>
> Pakistan is invited to comment on India's submission by no later than Friday, February 10, 2012.

98. By letter dated 4 February 2012, India provided to the Court a full copy of the CWPC Letter, a copy of the Official Secrets Act 1923 (India), and a copy of the Official Secrets Act 1923 (Pakistan). India and Pakistan then re-stated their respective positions on 7 and 9 February 2012.

99. To resolve this impasse, on 14 February 2012 the Court issued **Procedural Order No. 8** which provided:

1. Procedural History

[. . .]

2. Summary of the Parties' Positions

2.1 Pakistan contends that India ought to produce an unredacted copy of Annex IN-54 because Annex IN-54 is "of central importance" to India's argument. It maintains that India refers to the document "on multiple occasions in support of the contention that: 'The planning, development, and construction of the [Kishenganga Hydro-Electric Plant ('KHEP')] dates back to a period when the Treaty was being negotiated, and was a key reason why specific provisions were included in Annexure D of the Treaty allowing India to engage in inter-tributary transfers for Run-of-River projects on tributaries of the Jhelum.'"

2.2 Pakistan argues that the Court is empowered to order the production of documents it considers "appropriate and necessary" pursuant to Paragraph 20 of Annexure G of the Treaty. Pakistan acknowledges that "redactions may be justified in appropriate cases, e.g. where dictated by issues of confidentiality or security" but argues that, based on India's prior communications, such factors "do not apply in the current case." On these grounds, Pakistan concludes that Annex IN-54 is likely to be relevant to the disputes before the Court, and that it is both appropriate and necessary for the Court to see the document in its entirety. Pakistan further asserts that it requires Annex IN-54 in its entirety to respond to India's argument as articulated in the Counter-Memorial.

2.3 India makes three principal arguments. First, India maintains that the deleted passages of Annex IN-54 are not relevant to matters before the Court, noting that the redacted passages pertain to the Indus and the Chenab Rivers, not involved in the present dispute. Second, India argues the redacted passages need not be disclosed because India does not rely on them "in terms of Rule 11(i)(a) of the Supplemental Procedural Rules." Third, India indicates that the disclosure of an unredacted copy of Annex IN-54 risks "prejudice to India." India also makes reference to the Official Secrets Act, 1923 in force in both India and Pakistan. Referring to Paragraph 20 of Annexure G, India requests the Court not to disclose these redacted sections of Annex IN-54.

2.4 With respect to India's arguments, Pakistan comments that India does not explain why the Official Secrets Act, 1923 is applicable in the instant case nor articulate what prejudice it might suffer.

3. Decision of the Court

3.1 As noted by the Parties, Paragraph 20 of Annexure G of the Treaty provides that the Court may "require from the Agents of the Parties the production of all papers and other evidence it considers necessary."

3.2 The Court acknowledges Pakistan's position concerning the potential relevance of the redacted passages of Annex IN-54 and the adverse impact redaction may have on Pakistan's ability to respond to India's arguments, as well as India's position that the redacted passages contain "internal opinions with respect to matters that are not before this Court," the disclosure of which may result in "prejudice to India." The Court understands that India's objection to Pakistan's Application is based principally on the lack of relevance of the redacted portions of the document to this proceeding, and not on the Official Secrets Act, 1923.

3.3 As a general rule, the Court believes that any Party offering a document in evidence should provide the full document. The practice of redacting portions of exhibits has the understandable tendency to raise concerns on the part of the other Party, even where the material in question may be irrelevant. To address this concern, Paragraph 20 of Annexure G and Article 13(2) of the Supplemental Rules of

Procedure empower the Court to request, either *motu propio* or upon application of a Party, the production of the full, unredacted document.

3.4 In the exercise of this power the Court would, in appropriate circumstances, seek an examination of the redacted material. Accordingly, India's offer to provide the Court with a copy of the unredacted Annex IN-54 *in camera* is a welcome development, as it allows the Court to determine for itself the degree of relevance of those redacted portions.

3.5 The Court has carefully reviewed the unredacted copy of Annex IN-54 in light of the Parties' concerns regarding prejudice to the interests of either Party that may result from the disclosure or non-disclosure of the redacted passages. In the Court's view, the unredacted passages of Annex IN-54 are not directly relevant to the issues in dispute as currently defined in the pleadings of the Parties, and the non-disclosure of the redacted passages will not hamper Pakistan's ability to respond to the arguments made in India's Counter-Memorial that refer to Annex IN-54.

3.6 The Court therefore concludes that at this stage in the proceedings, it is not necessary to order that India supply Pakistan a complete and unredacted copy of the communication affixed to India's Counter-Memorial as Annex IN-54.

3.7 The Court shall remain seized of the matter. Should further submissions by the Parties or other developments in the proceedings lead the Court to consider revisiting this determination, the Parties will be invited to provide further comments at that time. Pakistan may also renew its application for production of a full copy of Annex IN-54 should new matters arise in the course of proceedings that it believes justifies such disclosure.

100. By e-mail communication dated 15 February 2012, India asked Pakistan to be more specific regarding its request of 21 January 2012 for environmental reports. India further commented on the relevance of the environmental impact report requested by India in relation to the NJHEP and the discussion of that report during the first site visit. India also noted that, insofar as detailed project reports and environmental impact assessments did not exist for Pakistan's four potential projects, India considered any effect of the KHEP to be "speculative" and that such sites were not "existing" hydro-electric uses.

101. By e-mail communication dated 20 July 2012, Pakistan asked India for further technical information regarding the construction and use of Adit 1 of the KHEP construction.

102. At the hearing on the merits, in response to further queries made by Pakistan, India stated that Adit 1 is intended to be used for construction and maintenance, not for diversion of waters.[18]

103. On 21 February 2012, Pakistan submitted its **Reply**, accompanied by an annexure.

104. On 21 May 2012, India submitted its **Rejoinder**.

[18] Hearing Tr., (Day 5), 24 August 2012, at 145:15 to 146:8.

J. EXPERT WITNESSES AND TESTIMONY BY VIDEO LINK

105. Pursuant to paragraph 3.2 of Procedural Order No. 9, on 15 June 2012, the Parties conveyed to each other and to the Court the names of witnesses and experts they intended to cross-examine at the hearing on the merits.

106. On 16 July 2012, Pakistan notified India that one witness India intended to cross-examine, Professor Michael Acreman, could not be present at the hearing in The Hague. Pakistan suggested the possibility of making Professor Acreman available by telephone or video-conference.

107. On 23 July 2012, India replied to Pakistan's message of 16 July, urging Pakistan to take steps to present Professor Acreman in person for cross-examination, noting that cross-examination "via a video link would obviously be less effective than an in person examination, and would thus result in prejudicing India."

108. By e-mail communication dated 9 August 2012, Pakistan asked the Registrar to place the matter of Professor Acreman's testifying by videoconference before the Court as India had not agreed to permit Professor Acreman's videoconference testimony. Pakistan confirmed that Professor Acreman was not available to come to The Hague.

109. India reiterated its objection to Pakistan's request by e-mail communication dated 13 August 2012, stating that Pakistan had known as far back as January 2011, when the dates of the hearing were finalized, that Professor Acreman could possibly be required to come to The Hague at that time. Referring to paragraph 3.3 of Procedural Order No. 9, which states that "(t)he Parties shall ensure that experts are present and available sufficiently in advance of the time they are anticipated to be called," India maintained that cross-examination by telephone or video link was not as effective as in-person examination and that it contravened the Court's Orders.

110. In an e-mail communication dated 13 August 2012, Pakistan pointed out that it accepted that prejudice may be caused to India by Professor Acreman's availability only by telephone, but that on balance, Pakistan would suffer more prejudice from Professor Acreman's unavailability to participate in person.

111. On 15 August 2012, the Court issued **Procedural Order No. 10** (*Concerning Pakistan's Request for Permission to Present Dr Acreman for Cross-Examination by Telephone Link*), in which it directed:

> 1. Articles 10 and 14 of the Supplemental Rules establish the procedure for the submission of expert evidence in support of the Parties' factual and legal arguments. A Party wishing to submit such evidence must append to its written pleadings the expert's witness report, which will stand as evidence in chief, while the other Party may request to cross-examine the expert. In accordance with Section 3.3 of Procedural Order No. 9, each Party is responsible for summoning to the hearing those of its experts that the other Party wishes to cross-examine. Consistent with these provisions and with general practice in international arbitration, the expert is expected to appear for cross-examination in person during the scheduled hearing. These provisions provide no guidance for a situation such as this one, where the expert is not presented in person due to a professed prior commitment.
>
> 2. At the outset, the Court notes that in international arbitration there are serious consequences to a party's failure to present an expert witness for cross-examination without cogent reasons: in general, that expert's report would be stricken from the record, and would form no part of the evidence on which an award can be based.
>
> 3. The Court considers that it is the norm for cross-examination of a witness or expert to be conducted in the physical presence of counsel for the other party and the tribunal. Where, as here, alternative means of cross-examination are proposed, to protect against a violation of the procedural due process rights of the other party, the Court would ordinarily need to be satisfied that: (1) at the time the expert report was presented, the Party did not know that the expert would not be available for cross-examination in person due to a prior commitment; (2) there is good reason, by virtue of the nature of the expert's duties at the time of examination, for excusing the expert's physical presence during the hearing; and (3) the alternative means of cross-examination satisfactorily approximates in-person cross-examination.
>
> 4. For reasons of liberality and because of the imminence of the hearing, the Court is willing to forego further analysis of requirements (1) and (2) on a *pro hac vice* basis.
>
> 5. As to (3), Pakistan offers to present Dr Acreman for cross-examination by telephone link. In the Court's view, cross-examination by telephone link does not satisfactorily approximate in-person cross-examination, as visual contact with the expert, possible in person but not by telephone, is essential for an effective cross-examination.
>
> 6. By contrast, the Court is of the view that video-conferencing is, under certain circumstances, an acceptable substitute for in-person cross-examination. By providing a synchronous audio and visual connection between the witness or expert, the cross-examining counsel, and the arbitral tribunal, video-conferencing can potentially approximate the conditions of in-person cross-examination. The Court notes in this regard that cross-examination of expert and fact witnesses by video-conferencing has been allowed in a number of international arbitral hearings.[fn1] That said, based on the actual conduct of cross-examination by video-conferencing, the weight to be given to testimony made through that medium rests with the Court.[fn2]
>
> 7. Pakistan contends that Dr Acreman is unable to make himself available for video-conferencing because his assignment involves fieldwork (which presumably requires frequent changes of location), the detailed schedule of which will not be known until some time during the week of August 13, 2012. In this context, it

appears that video-conferencing could be arranged once Dr Acreman's schedule and itinerary become known. The hearing is scheduled to take place from August 20 to August 31, 2012, and the Court would be prepared to allow Dr Acreman's cross-examination to take place on any weekday from August 20 to 28, provided that advanced notice of at least three working days is given.

8. The Court therefore *denies* Pakistan's Request and urges Pakistan to present Dr Acreman for cross-examination in person or, if not possible, by video-conferencing.

9. Should cross-examination of Dr Acreman occur not in person but through video-conference, the Court reserves the possibility, in the light of the quality of the video link achieved, of deciding to reconvene at a later stage in order to hear Dr Acreman in person. If so reconvened, the attendant cost consequences will follow.

---

fn1 *See e.g. Murphy Exploration and Production Company International v. Republic of Ecuador*, ICSID Case No. ARB/08/4, Award on Jurisdiction of December 15, 2010, para. 16; *S.D. Myers, Inc. v. Government of Canada*, UNCITRAL, Second Partial Award, 21 October 2002, para. 76; *Sergei Paushok, CJSC Golden East Company and CJSC Vostokneftegaz Company v. Government of Mongolia*, UNCITRAL, Award on Jurisdiction and Liability of 28 April 2011, para. 61; *Fraport AG Frankfurt Airport Services Worldwide v. Republic of the Philippines*, ICSID Case No. ARB/03/25, Award of 16 August 2007, para. 43; *EDF (Services) Limited v. Romania*, ICSID Case No. ARB/05/13, Award of 8 October 2009, para. 38; *SGS Société Générale de Surveillance S.A. v. Republic of Paraguay*, ICSID Case No. ARB/07/29, Award of 10 February 2012, para. 23.

fn2 Art. 13(1) of the Supplemental Rules provides that "[t]he Court shall determine the admissibility, relevance, materiality, and weight of the evidence adduced." [19]

112. In the course of the hearing on the merits, the Chairman announced that he was informed by Pakistan that it "proved impossible to link up with Dr Acreman in the remote reaches of Australia . . . and therefore his testimony has been withdrawn."[20]

113. By e-mail communication dated 9 August 2012, Pakistan stated that it intended to "call Professor Jens Christian Refsgaard as an expert witness in the forthcoming hearing." It indicated that Professor Refsgaard was willing to "provide a brief note on his comments [that he wishes to make in light of the reports submitted by India with its Rejoinder]" for the Court's reference during his examination, should the Court wish to have such a written note.

114. By e-mail communication dated 13 August 2012, India objected to Pakistan's notification of 9 August concerning Professor Refsgaard, arguing that "any notification by a Party that it intends to call a particular expert-witness to be heard was required to be filed by 21 July 2012 at the latest" according to the Supplemental Rules of Procedure (Article 14, paragraph 3). India recalled its e-mail communication dated 17 July 2012 in which it notified the Court and

---

[19] Emphasis in the original.

[20] Hearing Tr., (Day 2), 21 August 2012, at 1:3-7.

Pakistan that it did not seek to cross-examine Professor Refsgaard. Thereafter Pakistan had given no indication that it wished to call Professor Refsgaard. India argued, thus, that calling Professor Refsgaard "at this late stage would also be fundamentally prejudicial to India."

115. Pakistan responded to India's objection by e-mail communication dated 14 August 2012, in which it acknowledged its "inadvertent and minor failure to comply with Article 14.3" of the Supplemental Rules of Procedure but submitted that it was not appropriate to prevent Professor Refsgaard from testifying at the hearing, given that Article 14.3, unlike some other articles of the Rules, did not stipulate a strict consequence for a failure to comply. Further, Pakistan contended that India would not be prejudiced by Pakistan's failure to make an Article 14.3 communication as India had planned to cross-examine Professor Refsgaard until "late July." To the contrary, to prevent Professor Refsgaard from testifying at the hearing would not be consistent with the requirements of equality and the need to give each Party a full opportunity to be heard because India would have had the opportunity to criticize Professor Refsgaard without giving him a chance to respond.

116. India reiterated its objection to Professor Refsgaard's participation by e-mail communication dated 15 August 2012, arguing that granting Pakistan the opportunity to present a written submission by Professor Refsgaard would severely prejudice India, as would giving him the opportunity to testify.

117. In a letter to the Parties dated 17 August 2012, the Court denied Pakistan's request for direct oral examination of Professor Refsgaard during the hearing on the merits, stating that permitting such testimony would raise serious issues of procedural fairness. The Court's full communication of 17 August 2012 reads as follows:

> 1. The Court acknowledges receipt of the Parties' respective communications of August 9, 13, and 14, 2012 concerning the proposed direct testimony of the expert witness put forth by Pakistan, Professor Jens Christian Refsgaard, at the Hearing on the Merits.
>
> 2. Pakistan has indicated its intention to directly examine Professor Refsgaard during the Hearing and has sought guidance as to whether a written note outlining Professor Refsgaard's additional comments would be preferred. India has objected to the Court hearing further testimony from Professor Refsgaard. The Court recalls that India originally indicated, on June 15, 2012, its intention to cross-examine Professor Refsgaard. However, on July 17, 2012 India informed the Court that it no longer considered Professor Refsgaard's presence to be necessary.
>
> 3. As a general matter, Articles 10 and 14 of the Supplemental Rules of Procedure establish the procedure for the submission of expert evidence in support of the Parties' factual and legal arguments. A Party wishing to submit such evidence must append to its written pleadings the expert's witness report, which will stand as

evidence in chief, while the other Party may request to cross-examine the expert. Article 14(5) establishes that, "subject to the control of the Court", the examination of expert witnesses during the Hearing "will be limited to cross-examination and re-direct, and to questions that may be put by the Court." This procedure was established to minimize the possibility of surprise to either Party during the Hearing—cross-examination would be based on expert reports provided to the other Party well before the Hearing is to take place. It follows from this that an expert witness would not testify on direct examination in the ordinary course of events, absent a request for cross-examination from the other Party *or* an application for leave to conduct direct examination by the Party which is granted by the Court. Although not expressed in these terms, the Court will interpret Pakistan's August 9 and 14, 2012 communications as such an application.

4. India has also raised the failure of Pakistan to indicate its intention to conduct direct examination of Mr Refsgaard at least 30 days prior to the Hearing, in violation of Article 14(3) of the Supplemental Rules. Pakistan has admitted that it had inadvertently failed to comply with this rule, but maintains that such a failure is minor and that the appropriate remedy "could not conceivably be the draconian measure that India calls for". The Court agrees that if a Party can demonstrate the necessity of allowing one of its witnesses or experts to be directly examined during a hearing, a violation of the 30 day rule embodied in Article 14(3) would alone not be fatal to that application.

5. There is a more fundamental point on procedural fairness raised by India, however, that merits serious consideration from the Court. In approaching Pakistan's application, the Court considers that its paramount duty is to maintain *both* Parties' due process rights, in particular the right to be heard on the matters on which the Court will render its decision, and the equally important right of the other Party to have adequate opportunity to contradict all those matters. Procedures and time limits for the identification of witnesses and experts in advance of a hearing are intended to insure that neither party is surprised by the issues to be raised and that counsel are able to adequately prepare.

6. In this instance, Professor Refsgaard's reports consist of expert commentary on the methodologies employed in the hydrology reports prepared respectively by National Engineering Services Pakistan (Pvt) Limited ("NESPAK") and by the Indian Central Waters Commission ("CWC"). To the extent that the CWC report or the report of Dr George Annandale (which touches on the same subject)—both appended to India's Rejoinder—raise issues not adequately addressed by Professor Refsgaard's earlier testimony, the Court considers that the appropriate procedure would have been for Pakistan to call Dr Annandale and a representative of the CWC for cross-examination, and if necessary, to also apply for leave to either submit a further expert report or, if not possible, for direct testimony from Professor Refsgaard. Pakistan did not call for the cross-examination of the CWC Report or of Dr Annandale.

6. Under these circumstances, the Court is of the view that permitting additional direct testimony from Professor Refsgaard would raise serious issues of procedural fairness, as it would introduce additional evidence in a manner that would not allow India an adequate opportunity for contradiction. Professor Refsgaard would be given the opportunity to criticize the testimony of Dr Annandale and the CWC experts and lay out new testimonial evidence in support of his view; and crucially, neither the CWC experts nor Dr Annandale would be able to respond, not being in attendance at the Hearing as far as the Court can tell.

7. In view of these considerations, the Court *denies* Pakistan's request for direct oral examination of Professor Refsgaard during the Hearing. The Court notes that it is open to Pakistan to raise any issues it may have concerning India's Rejoinder in its

oral pleadings, including any concerns it may have on the expert reports contained in the Rejoinder.

8. Nonetheless, in order to ensure every orderly opportunity for each Party to present its case, *if*, within five days after the conclusion of the Hearing (i.e., by September 5, 2012), Pakistan believes that there are critical matters Dr Refsgaard would have raised that could not be dealt with through agent/counsel argument at the Hearing, Pakistan may submit a further expert report from Professor Refsgaard, which shall be limited to matters raised in India's Rejoinder. India would then be given a period of three weeks (i.e., until September 26, 2012) to submit any additional expert reports it wishes to in response.

9. Finally, the Court wishes to emphasize that at any time during or after the Hearing, if the Court considers that it would benefit from further expert assistance from either or both Parties, then the Court will require a supplementary procedure at that time.[21]

118. On the first day of the hearing, Pakistan reiterated a request for the direct examination of Professor Refsgaard, to which India objected.[22] The Court reaffirmed its ruling of 17 August 2012 denying Pakistan's request while noting that Pakistan would have the option of applying to the Court for leave to submit a further expert report by Professor Refsgaard if it "believes there are critical matters to Professor Refsgaard's testimony that cannot be adequately dealt with through counsel argument during this hearing."[23]

K. THE HEARING ON THE MERITS

119. Pursuant to paragraph 5.2.2 of Procedural Order No. 1, a two-week hearing was scheduled to be held from 20 to 31 August 2012.

120. On 4 June 2012, after receiving the views of the Parties, the Court issued **Procedural Order No. 9**, which provided for the conduct of the hearing.

121. The hearing on the merits took place at The Hague as scheduled. The following persons were present:

The Court of Arbitration
Judge Stephen M. Schwebel (Chairman)
Sir Franklin Berman KCMG QC
Professor Howard S. Wheater FREng
Professor Lucius Caflisch
Professor Jan Paulsson
Judge Bruno Simma

[21] Emphasis in the original.

[22] Hearing Tr., (Day 1), 20 August 2012, at 57:17-20.

[23] Hearing Tr., (Day 1), 20 August 2012, at 57:20 to 28:5.

H.E. Judge Peter Tomka

Pakistan
Mr Kamal Majidulla, Agent
Special Assistant to the Prime Minister for Water Resources and Agriculture

Mr Khalil Ahmad, Co-agent
Ambassador at Large

Mr Karim Khan Agha, Co-agent
Prosecutor General, National Accountability Bureau

Mr Asif Baig, Co-Agent
Pakistan Commissioner for Indus Waters

Mr Vaqar Zakaria, Technical Expert
Managing Director, Hagler Bailly Pakistan

Dr Muhammad Rafiq, Technical Expert
Hagler Bailly Pakistan

Mr Manzar Naeem Qureshi, Power Economics Expert

Mr Syed Muhammad Mehr Ali Shah, Technical Expert
Principal Engineer, NESPAK

Mr Faris Qazi, Technical Expert
Deputy Commissioner for Indus Waters

Mr Saleem Warsi, Flow Measurement Expert
Water Resources and Power Development Authority

Mr Sardar Raheem, Representative of the Government of Azad Jammu and Kashmir
Secretary of Irrigation and Agriculture

Dr Gregory Morris, Technical Expert

Dr Jens Christian Refsgaard, Technical Expert

Dr Jackie King, Technical Expert

Mr Hans Beuster, Technical Expert

Dr Cate Brown, Technical Expert

Prof. James Crawford, Counsel

Prof. Alan Vaughan Lowe, Counsel

Ms Shamila Mahmood, Counsel

Mr Samuel Wordsworth, Counsel

Mr Aamir Shouket, Counsellor
Embassy of Pakistan

India
Mr Dhruv Vijai Singh, Agent
Secretary to the Government of India, Ministry of Water Resources

Dr Neeru Chadha, Co-agent
Joint Secretary and Legal Adviser, Ministry of External Affairs

Mr G. Aranganathan, Co-agent
Indian Commissioner for Indus Waters

H.E. Bhaswati Mukherjee
Ambassador of India to the Netherlands

Mr Raj Kumar Singh, Deputy Chief of Mission, Embassy of India, The Hague

Dr A. Sudhakara Reddy, First Secretary (Legal), Embassy of India, The Hague

Mr Fali S. Nariman, Counsel

Mr R.K.P. Shankardass, Counsel

Prof. Stephen C. McCaffrey, Counsel

Mr Rodman Bundy, Counsel

Prof. Daniel Magraw, Counsel

Mr S.C. Sharma, Counsel

Mr Jesper Goodley Dannisøe, Expert Witness

Dr Niels Jepsen, Expert Witness

Dr S. Sathyakumar, Expert Witness and Advisor

Dr K.G. Rangaraju, Expert Witness and Advisor

Dr Alka Upadhyay, Advisor

Mr Darpan Talwar, Advisor
Senior Joint Commissioner, Ministry of Water Resources

Mr P.K. Saxena, Advisor
Director, Central Water Commission

Mr Balraj Joshi, Advisor

Dr Shahid Ali Khan, Advisor

Mr Rajeev Baboota, Advisor

Ms Swarupa Reddy, Research Assistant

Mr S.P. Bhatt, Attaché (Legal)

The Secretariat
Mr Aloysius P. Llamzon, Registrar and Legal Counsel
Mr Garth Schofield, Legal Counsel
Ms Kathleen Claussen, Assistant Legal Counsel
Ms Evgeniya Goriatcheva, Assistant Legal Counsel
Ms Willemijn van Banning, Case Manager

Court Reporter
Mr Trevor McGowan

122. The following persons presented oral arguments before the Court on behalf of Pakistan:

Mr Kamal Majidulla, Agent
Prof. James Crawford, Counsel
Prof. Alan Vaughan Lowe, Counsel
Ms Shamila Mahmood, Counsel
Mr Samuel Wordsworth, Counsel

123. The following persons presented oral arguments before the Court on behalf of India:

Mr Dhruv Vijai Singh, Agent
Dr Neeru Chadha, Co-agent
Mr Fali S. Nariman, Counsel
Mr R.K.P. Shankardass, Counsel
Mr Rodman Bundy, Counsel

Prof. Stephen C. McCaffrey, Counsel
Prof. Daniel Magraw, Counsel

124. Pursuant to the Parties' notifications of 15 June 2012, Pakistan presented the following experts for cross-examination:[24]

Mr Mehr Ali Shah
Dr Jackie King
Mr Vaqar Zakaria, and
Dr Gregory Morris

India presented the following experts for cross-examination:

Dr K.G. Rangaraju
Dr S.K. Sathyakumar
Mr Jesper Goodley Dannisøe, and
Dr Niels Jepsen

125. By letter dated 12 September 2012, the Court distributed the certified transcript for the hearing on the merits, which constituted minutes for the purpose of Paragraph 19 of Annexure G and "pronounced the discussions closed" in accordance with Paragraph 22 of Annexure G.[25]

[24] *See also* paras. 106-110 of this Partial Award concerning the presentation of Dr Acreman.

[25] Paragraph 22 of Annexure G provides:

> When the Agents and Counsel of the Parties have, within the time allotted by the Court, submitted all explanations and evidence in support of their case, the Court shall pronounce the discussions closed. The Court may, however, at its discretion re-open the discussions at any time before making its Award. The deliberations of the Court shall be in private and shall remain secret.

II. BACKGROUND

126. This arbitration marks the first instance that a court of arbitration has been constituted since the Indus Waters Treaty was concluded over half a century ago. The proceedings have arisen out of a dispute between Pakistan and India concerning the interpretation and implementation of the Treaty in relation to the construction and operation of the Kishenganga Hydro-Electric Project. The Treaty sets forth the rights and obligations of the Parties on the use of the waters of the Indus system of rivers. The KHEP is an Indian hydro-electric project located on one such river—known as the "**Kishenganga**" in India-administered Jammu and Kashmir and as the "**Neelum**" in Pakistan-administered Jammu and Kashmir (the "**Kishenganga/Neelum River,**" "**Kishenganga/Neelum**," or "**River**").[26]

127. The KHEP is designed to generate power by diverting water from a dam site on the Kishenganga/Neelum River (within the Gurez valley, an area of higher elevation) to another river of the Indus system (lower in elevation and located near Wular Lake) through a system of tunnels, with the water powering turbines having a capacity of up to 330 megawatts. In essence, the Parties disagree as to whether the planned diversion of water and other technical design features of the KHEP are in conformity with the provisions of the Treaty. The Parties also disagree over the permissibility under the Treaty of the use of the technique of drawdown flushing for sediment control in Run-of-River Plants.

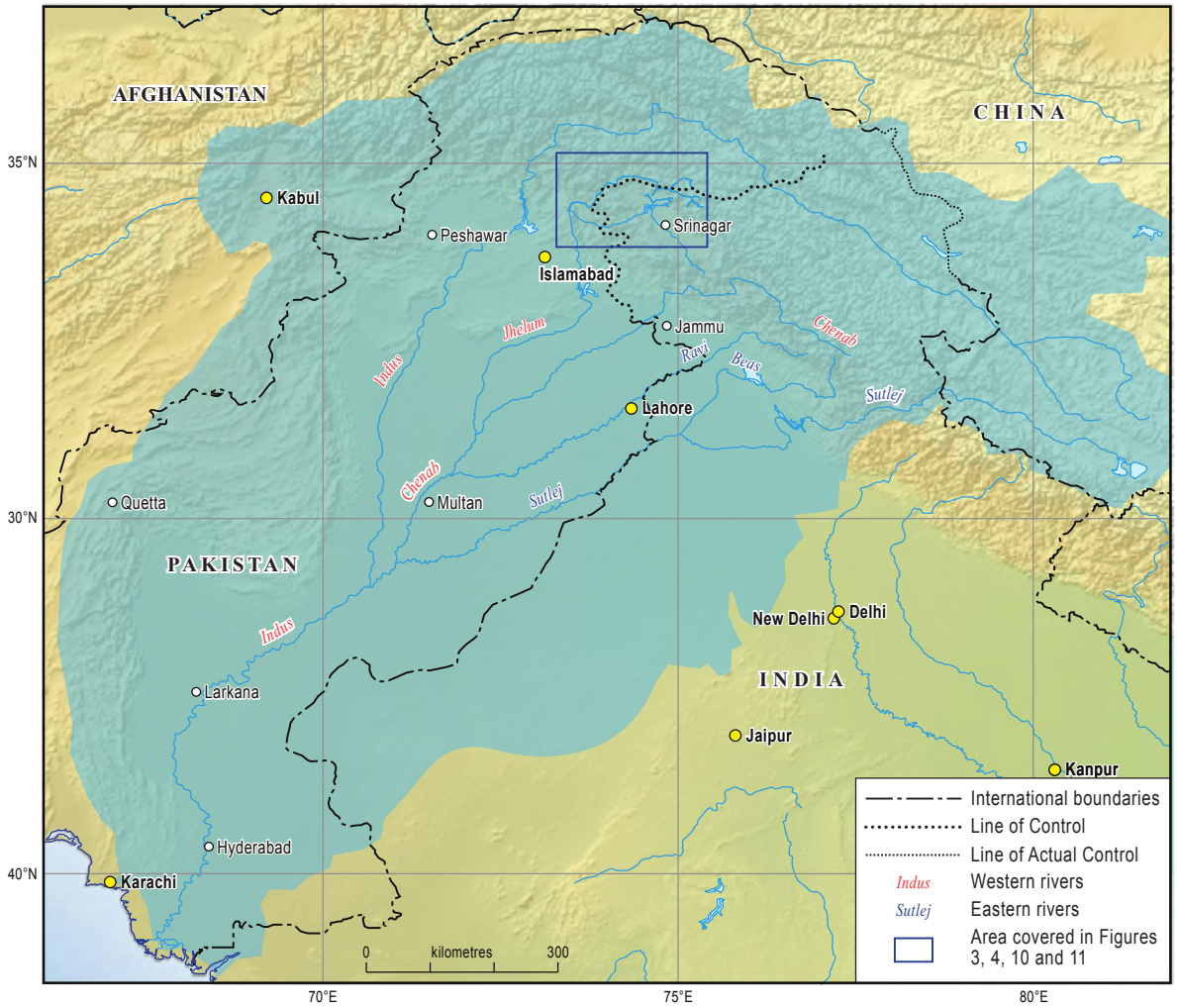
A. THE GEOGRAPHY

128. The Indus system of rivers is composed of six main rivers: the Indus, the Jhelum and the Chenab (together with their tributaries, the "**Western Rivers**"), and the Sutlej, the Beas and the Ravi (together with their tributaries, the "**Eastern Rivers**").[27] These rivers and their tributaries rise primarily in the Himalayas and course through Afghanistan, China, India and Pakistan before merging into the Indus river and draining into the Arabian Sea south-east of the port of

[26] The terminology used in this Partial Award to denote geographic locations is intended to be neutral and should not be construed as the adoption by the Court of any position with regard to any matters of territorial sovereignty. *See* the discussion of the territorial scope of the Treaty at paras. 359-363 of this Partial Award. Pakistan-administered Jammu and Kashmir is sometimes referred to by the Parties as "Azad Jammu and Kashmir" or "Pakistan Occupied Kashmir." India-administered Jammu and Kashmir is sometimes referred to by the Parties as "India," "Indian-occupied Kashmir" or "Indian-held Kashmir."

[27] Treaty, Arts. 1(5)-(6); India's Counter-Memorial, para. 2.2.

Karachi in Pakistan.[28] The Indus system of rivers and its catchment area are depicted on the following map provided by Pakistan:



Source: Pakistan's Memorial, volume 2, Figure 2.

129. The Kishenganga/Neelum River, on which the KHEP is located, is a tributary of the Jhelum. The River originates in India-administered Jammu and Kashmir at latitude 34º33'N and longitude 75º20'E at an elevation of 4400 metres.[29] It flows through India-administered Jammu and Kashmir, crosses the Line of Control separating India-administered Jammu and Kashmir from Pakistan-administered Jammu and Kashmir, and joins the Jhelum River at Muzaffarabad in Pakistan-administered Jammu and Kashmir. The flow in the Kishenganga/Neelum River is

[28] Pakistan's Memorial, para. 1.14; India's Counter-Memorial, para. 2.2.

[29] India's Counter-Memorial, para. 2.8.

strongly seasonal. The highest flows occur from May to August, associated with seasonal snowmelt in the upper catchment, and monsoon rain in the lower reaches. In contrast, there is a long low flow season from early October to the middle of March.[30]

B. THE INDUS WATERS TREATY

130. The need for a treaty regulating the use of the waters of the Indus river system arose in 1947 with the independence of India from British rule and its partition into the Dominion of Pakistan (now the Islamic Republic of Pakistan and the People's Republic of Bangladesh) and the Union of India (now the Republic of India).[31]

131. Before partition, use of the waters was negotiated between the relevant provinces and states of British India, and any disputes were resolved by the British Secretary of State for India, and later by the Government of India.[32] After partition, parts or all of the upper reaches of the six main rivers of the Indus system were located in India, with their downstream stretches flowing through Pakistan.[33] A temporary agreement for the allocation of the use of these waters between East Punjab (an Indian state from 1947 to 1956) and West Punjab (a province of Pakistan from 1947 to 1955) expired on 31 March 1948.[34]

132. In April 1948, an incident occurred during which East Punjab discontinued the flow of water in the canals leading to West Punjab.[35] An agreement was reached by the two states and the flow of water in the canals concerned was restored within one month, but this incident exposed the two states' differing views on their respective rights and obligations regarding the waters of the Indus river system.[36]

---

[30] *See* Pakistan's Memorial, para. 3.21; India's Counter-Memorial, para. 2.11.

[31] Pakistan's Memorial, paras. 1.26-1.27; India's Counter-Memorial, paras. 2.22, 2.24.

[32] Pakistan's Memorial, para. 1.28; India's Counter-Memorial, para. 2.23.

[33] Pakistan's Memorial, para. 1.26; India's Counter-Memorial, para. 2.24.

[34] Pakistan's Memorial, paras. 1.27, 1.33, referring to Marjorie M. Whiteman, *Digest of International Law*, vol. 3, 1963, pp. 1022-1023, (Annex PK-LX-18).

[35] Pakistan's Memorial, para. 1.33, referring to Marjorie M. Whiteman, *Digest of International Law*, vol. 3, 1963, pp. 1022-1023, (Annex PK-LX-18); India's Counter-Memorial, paras. 2.25-2.28.

[36] Pakistan's Memorial, para. 1.34, referring to Inter-Dominion Agreement, Between the Government of India and the Government of Pakistan, on the Canal Water Dispute Between East and West Punjab, 4 May 1948, 54 U.N.T.S. 45, included in Annexure A to the Treaty; India's Counter-Memorial, para. 2.28.

133. In August 1951, Mr David E. Lilienthal, the former head of the Tennessee Valley Authority in the United States, visited the region at the invitation of the Prime Minister of India Mr Jawaharlal Nehru and after his visit published an article recommending that the World Bank facilitate the negotiation of the joint development of the Indus waters basin by India and Pakistan.[37]

134. In pursuance of Mr Lilienthal's proposal, on 6 September 1951, the World Bank offered to assist India and Pakistan in elaborating a cooperative regional approach to the development of the Indus river system's water resources.[38] Both States accepted this offer.[39]

135. The first two years of negotiations were not successful. The two States were unable to prepare jointly a comprehensive plan and, when invited to each prepare their own comprehensive plan, made proposals that "differed widely in concept and in substance."[40] From the World Bank's perspective, the difficulties resulted not from technological complexity, but from: (1) the inadequacy of the resources of the Indus system of rivers to satisfy all the needs of the area; (2) the involvement of two sovereign States in the development of the Indus basin as an economic unit; and (3) the fact that while Pakistan considered that existing uses of the waters should be continued from existing sources, India believed that, although existing uses should be continued, they did not need to be continued from existing sources (i.e., that some waters of the Eastern Rivers used by Pakistan could be released for use by India and replaced by waters from the Western Rivers).[41]

136. To end the impasse, on 24 February 1954, the World Bank put forward a substantive proposal (the "**1954 Proposal**"), suggesting a division of the waters of the Indus river system between the two States. The 1954 Proposal allocated to Pakistan the "exclusive use and benefit" of the "entire flow of the Western Rivers (Indus, Jhelum and Chenab)," and to India the "exclusive use and benefit" of the "entire flow of the Eastern Rivers (Ravi, Beas and Sutlej)." It also provided for a transitional period during which India would continue to supply Pakistan with its

---

[37] Letter from Eugene R. Black, President of the World Bank, to Pakistan's Prime Minister Liaquat Ali Khan, 6 September 1951, (Annex IN-31), (an identical letter was sent to India's Prime Minister Jawaharlal Nehru).

[38] *Ibid.*

[39] India's Counter-Memorial, para. 2.46.

[40] Proposal by the International Bank Representative for a Plan for the Development and Use of the Indus Basin Waters, 5 February 1954, (Annex PK-2), paras. 1-2 ("1954 Proposal").

[41] 1954 Proposal, (Annex PK-2), paras. 5-16.

"historic withdrawals" from the Eastern Rivers, while Pakistan constructed link canals that would allow it to replace water it had previously secured from the Eastern Rivers by water from the Western Rivers.[42]

137. Four years of intensive negotiation and discussion followed, at the conclusion of which agreement was reached on the Treaty's general principles, largely in keeping with the 1954 Proposal. Beginning in August 1959, the World Bank proposed and the Parties exchanged views on increasingly detailed drafts.[43] Among other matters, agreement was reached on the restricted uses India would be permitted to make of the waters of the Western Rivers.[44]

138. The Parties, as well as the World Bank, finally signed the Treaty on 19 September 1960. The Treaty entered into force on 12 January 1961, upon the exchange of documents of ratification, with retroactive effect from 1 April 1960.[45]

139. In addition to regulating the allocation of the use of the waters of the Indus system of rivers, the Treaty created the Permanent Indus Commission (the "**Commission**") to establish and maintain cooperative arrangements for the implementation of the Treaty. The Commission is formed of a Commissioner for Indus Waters appointed by India (the "**Indian Commissioner**") and a Commissioner for Indus Waters appointed by Pakistan (the "**Pakistani Commissioner**") (together, the "**Commissioners**"), each acting as a representative of his Government and as the regular channel of communications for all matters related to the Treaty. The full range of the Commission's duties is set out in Article VIII of the Treaty. Sub-paragraph 4 of this provision specifies that these functions include:

> (a) to study and report to the two Governments on any problem relating to the development of the waters of the Rivers which may be jointly referred to the Commission by the two Governments: [. . .]
>
> (b) to make every effort to settle promptly, in accordance with the provisions of Article IX(1), any question arising thereunder;
>
> (c) to undertake, once in every five years, a general tour of inspection of the Rivers for ascertaining the facts connected with various developments and works on the Rivers;

---

[42] 1954 Proposal, (Annex PK-2), para. 24.

[43] Pakistan's Memorial, paras. 1.50-1.69; India's Counter-Memorial, paras. 2.60-2.61.

[44] Pakistan's Memorial, paras. 1.54-1.63.

[45] *See* Treaty, Art. XII(2).

(d) to undertake promptly, at the request of either Commissioner, a tour of inspection of such works or sites on the Rivers as may be considered necessary by him for ascertaining the fact connected with those works or sites;

[. . .]

C. THE HISTORY OF THE DISPUTES

140. The documentary history of the present disputes within the Commission dates back to 1988. At that time, it came to the Pakistani Commissioner's notice that "work on a scheme envisaging diversion of the waters of the Kishenganga River into Wullar Lake had been taken in hand."[46] By telegram dated 14 December 1988, the Pakistani Commissioner requested that India interrupt its work and provide Pakistan with information on the project. In the same telegram, the Pakistani Commissioner stated his view that "the scheme if implemented would adversely affect Pakistan's hydro-electric projects and other uses on the [Kishenganga/Neelum River]."[47]

141. By telegram dated 16 December 1988, the Indian Commissioner explained that geological investigations regarding the proposed project on the Kishenganga/Neelum River had only just begun and that India "would communicate to Pakistan information specified in the Treaty at least six months in advance of beginning of work on the project."[48]

142. By letter dated 22 April 1989, the Pakistani Commissioner, recalling a meeting of the Commission on 17-20 December 1988, informed India "again" of the construction by Pakistan of the NJHEP on the Kishenganga/Neelum River in Pakistan-administered Jammu and Kashmir.[49]

143. By letter dated 12 May 1989, the Indian Commissioner recalled that, in accordance with Paragraph 10 of Annexure E to the Treaty, which regulates Indian Storage Works on the Western Rivers, any Indian Storage Work located on a tributary of the Jhelum must be "so designed and operated as not to adversely affect the then existing Agricultural Use or hydro-electric uses on that Tributary." The Indian Commissioner therefore requested the Pakistani Commissioner to provide information regarding Pakistan's agricultural and hydro-electric uses

[46] Pakistani Commissioner's telegram to the Indian Commissioner, 14 December 1988, (Annex PK-38).

[47] *Ibid*.

[48] Indian Commissioner's telegram to the Pakistani Commissioner, 16 December 1988, (Annex PK-39).

[49] Pakistani Commissioner's letter to the Indian Commissioner, 22 April 1989, (Annex PK-40).

on the Kishenganga/Neelum River and, in particular, the NJHEP.[50] By letter dated 15 March 1990, the Pakistani Commissioner provided the requested information.[51]

144. By letter dated 2 June 1994, the Indian Commissioner furnished the Pakistani Commissioner with the details of the KHEP "in accordance with Paragraph '12' of Annexure 'E'" to the Treaty.[52]

145. From that time, the Commissioners exchanged voluminous correspondence setting forth their respective positions with regard to the KHEP. The Pakistani Commissioner objected to the KHEP on the grounds that: (1) the planned diversion was not permitted by Annexure E to the Treaty; (2) the KHEP would have a significant adverse impact on Pakistan's agricultural and hydro-electric uses on the Kishenganga/Neelum River, and in particular on the NJHEP, thus contravening Paragraph 10 of Annexure E to the Treaty; and (3) the KHEP's design did not conform to the design criteria of Paragraph 11 of Annexure E to the Treaty.[53] The Pakistani Commissioner also stated that India had provided insufficient information with respect to the KHEP.[54] The Indian Commissioner, by contrast, was of the view that the KHEP was permitted by Annexure E to the Treaty, so long as the KHEP did not affect Pakistan's pre-existing agricultural and hydro-electric uses. The Indian Commissioner further argued that Pakistan had continuously failed to substantiate its agricultural and hydro-electric uses on the Kishenganga/Neelum River.[55] On the basis of the information provided by Pakistan and of the 1991 and 1996 tours of inspection to the Neelum Valley, the Indian Commissioner contended that the NJHEP did not constitute a "then existing" hydro-electric use on the

---

50 Indian Commissioner's letter to the Pakistani Commissioner, 12 May 1989, (Annex PK-41).

51 Pakistani Commissioner's letter to the Indian Commissioner, 15 March 1990, (Annex PK-53).

52 Indian Commissioner's letter to the Pakistani Commissioner, 2 June 1994, (Annex PK-63).

53 Pakistani Commissioner's letter to the Indian Commissioner, 8 September 1994, (Annex PK-64); Pakistani Commissioner's letter to the Indian Commissioner, 11 October 1997, (Annex PK-77).

54 Indian Commissioner's letter to the Pakistani Commissioner, 21 February 1991, (Annex PK-56); *see also* Pakistani Commissioner's letter to the Indian Commissioner, 8 September 1994, (Annex PK-64), para. 4; Pakistani Commissioner's letter to the Indian Commissioner, 11 October 1997, (Annex PK-77), para. 7.

55 India's Counter-Memorial, paras. 3.11, 3.98-3.104, 3.114-3.122, referring to Pakistani Commissioner's letter to the Indian Commissioner, 9 September 1991, (Annex IN-88); Pakistani Commissioner's letter to the Indian Commissioner, 7 November 1991, (Annex PK-59); Pakistani Commissioner's letter to the Indian Commissioner, 11 May 1992, (Annex PK-62); Record of the 92nd Meeting of the Commission, Lahore, 27-29 November 2004, (Annex PK-28), para. 5; Record of the 97th Meeting of the Commission, New Delhi, 30 May to 4 June 2007, (Annex PK-33), pp. 11-12, 17-18; Indian Commissioner's letter to the Pakistani Commissioner, 26 May 2007, (Annex PK-174), pp. 3-4.

Kishenganga/Neelum River, as it was no more than a "proposed" project, and that little, if any, agricultural use of the River's water was being made in the Neelum Valley.[56]

146. Pakistan's objections to the KHEP were discussed at meetings of the Commission held in 2004 and 2005 without leading to any settlement of the Parties' disagreement.[57]

147. By letter dated 7 February 2006, the Pakistani Commissioner informed the Indian Commissioner that, in his view, a dispute had arisen with respect to the KHEP.[58] On 26 March 2006, in accordance with Article IX(3) of the Treaty, he provided a draft report to be submitted to the Governments of India and Pakistan.[59]

148. By letter dated 20 April 2006, the Indian Commissioner informed the Pakistani Commissioner that, due to local concerns over the submergence of villages, the KHEP had been re-configured to a Run-of-River Plant falling under Article III(2)(d) and Annexure D of the Treaty.[60] Accordingly, "any proposal for reference of any dispute . . . would no longer be relevant or necessary."[61] On 19 June 2006, the Indian Commissioner provided information concerning the re-configured KHEP "as specified in Appendix II to Annexure D" to the Treaty.[62]

149. By letters dated 21 July and 24 August 2006, the Pakistani Commissioner observed that the KHEP was a new Run-of-River Plant, and that India was accordingly required to submit information under the relevant provisions of Annexure D. He raised specific objections to the re-configured KHEP on the basis that: (1) the proposed diversion of the Kishenganga/Neelum River would violate India's obligation under the Treaty to "let flow" the waters of the Western Rivers; and (2) the new design of the KHEP contravened the design criteria of Paragraph 8 of Annexure D to the Treaty.[63] By letter dated 25 May 2007, the Indian Commissioner rejected all

---

[56] Indian Commissioner's letter to Pakistani Commissioner, 21 February 1991, (Annex PK-56); Indian Commissioner's letter to the Pakistani Commissioner, 7 February 1992, (Annex PK-61); Indian Commissioner's letter to the Pakistani Commissioner, 29 January 1997, (Annex PK-76).

[57] Pakistan's Memorial, para. 2.18, referring to Record of the 92nd Meeting of the Commission, Lahore, 27-29 November 2004, (Annex PK-28).

[58] Pakistani Commissioner's letter to the Indian Commissioner, 7 February 2006, (Annex PK-157).

[59] Pakistani Commissioner's letter to the Indian Commissioner, 26 March 2006, (Annex PK-159).

[60] Indian Commissioner's letter to the Pakistani Commissioner, 20 April 2006, (Annex PK-161).

[61] Indian Commissioner's letter to the Pakistani Commissioner, 20 April 2006, (Annex PK-161).

[62] Indian Commissioner's letter to the Pakistani Commissioner, 19 June 2006, (Annex PK-163).

[63] Pakistani Commissioner's letter to the Indian Commissioner, 24 August 2006, (Annex PK-166).

of Pakistan's objections.[64] The Indian Commissioner nevertheless communicated some updated details and plans to Pakistan in May 2007 and in May and June 2008.[65]

150. Pakistan's objections to the re-configured KHEP were discussed at the 99th, 100th and 101st meetings of the Commission held respectively from 30 May to 4 June 2007, 31 May to 4 June 2008 and 25 to 28 July 2008. However, no agreement was reached.[66]

151. By letter dated 11 March 2009, the Pakistani Commissioner informed his Indian counterpart of his view that the First Dispute and the Second Dispute had arisen between the Parties in relation to the KHEP (the "**11 March 2009 Letter**"). The Letter enclosed a draft report for submission to the Governments of India and Pakistan in accordance with Article IX(3) of the Treaty.[67] Upon request by the Government of India, Pakistan agreed, without prejudice to its position that disputes had arisen under Article IX of the Treaty, that the KHEP be discussed again at the 103rd meeting of the Commission that was to be held from 31 May to 5 June 2009. [68] Yet again, the Parties did not reach agreement during that meeting. Moreover, India maintained its position that no dispute had arisen.[69]

152. By Note Verbale dated 10 July 2009, in accordance with Article IX(4) of the Treaty, Pakistan invited India to resolve the disputes by agreement and nominated two negotiators for this purpose.[70] By Note Verbale dated 20 August 2009, India indicated that in its view appointment of negotiators was "not warranted at present."[71]

153. By a Request for Arbitration dated 17 May 2010, Pakistan commenced the present arbitration.

---

64 Indian Commissioner's letter to the Pakistani Commissioner, 25 May 2007, (Annex PK-174/IN-98).

65 *Ibid*.; Indian Commissioner's letter to the Pakistani Commissioner, 1 June 2009, (Annex IN-101).

66 Pakistan's Memorial, paras. 2.27-2.32.

67 Pakistani Commissioner's letter to the Indian Commissioner, 11 March 2009, (Annex PK-194).

68 India's Note Verbale, 19 May 2006, (Annex PK-206); Pakistan's Note Verbale, 30 May 2009, (Annex PK-210).

69 Record of the 103rd Meeting of the Commission, New Delhi, 31 May to 5 June 2009, (Annex PK-36), item (xi).

70 Pakistan's Note Verbale, 10 July 2009, (Annex PK-212).

71 India's Note Verbale, 20 August 2009, (Annex PK-214).

D. THE KHEP AND THE NJHEP – TECHNICAL CHARACTERISTICS

154. The Parties agree that the KHEP was first conceived as a Storage Work within the meaning of Annexure E to the Treaty. According to its original design, the KHEP was intended to store water during the high flow season in a reservoir with a gross storage capacity of 220.00 million cubic metres ("**MCM**") behind a 77-metre high dam. The stored water was intended to be used for enhanced power generation during the winter months when the natural flow of the river was at its lowest.[72]

155. The KHEP was re-designed in 2006.[73] As described in India's letter of 19 June 2006[74] and in Annex I and Appendix 2 to India's Counter-Memorial, the new design comprises: (1) a 35.48 metre high dam over the Kishenganga/Neelum River located in the Gurez valley in India-administered Jammu and Kashmir, at latitude 34º39'00"N and longitude 75º45'08"E, approximately 12.07 kilometres upstream of the Line of Control; (2) a reservoir with a gross storage capacity of 18.35 MCM, located behind the dam; (3) a 23.5 kilometre head-race tunnel through which up to 58.4 m^3/s of water can be diverted from the Kishenganga/Neelum River at the dam site to the powerhouse; (4) a powerhouse at the downstream end of the tunnel at latitude 34º28'18"N and longitude 75º38'28"N; and (5) a tail-race channel which, after power generation, will deliver water diverted from the Kishenganga/Neelum River into the Bonar Nallah, another tributary of the Jhelum. The diverted water will then rejoin the Jhelum River through Wular Lake, at a point upstream of the Jhelum River's juncture with the Kishenganga/Neelum River. The design of the KHEP thus makes use of the natural 666-metre denivelation between the dam and the powerhouse for the generation of power.[75]

156. Pakistan renders the KHEP schematically as follows:

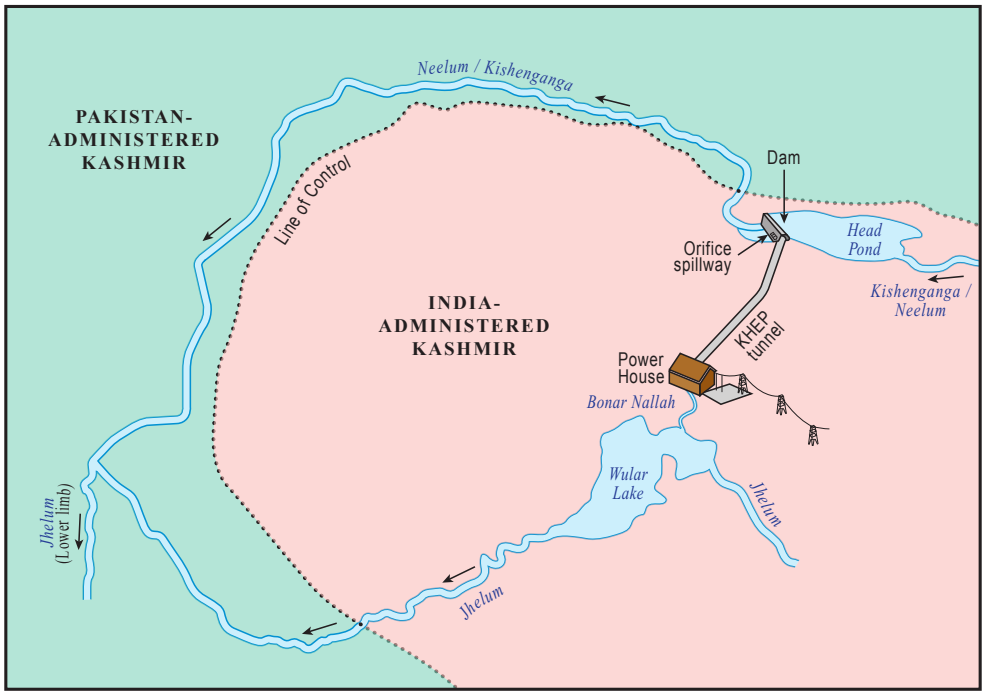
---

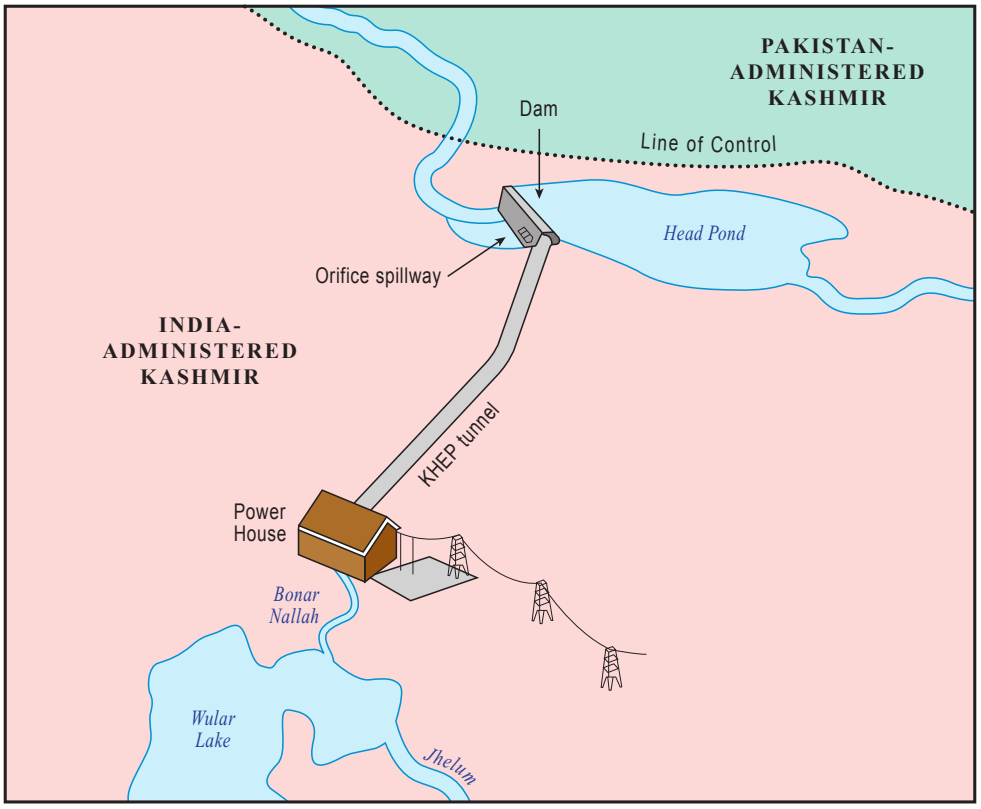
[72] India's Counter-Memorial, Appendix 2, paras. 5-7; *see also* India's Counter-Memorial, Annex 1.

[73] The re-designed KHEP is a Run-of-River Plant within the meaning of Annexure D to the Treaty. *See* para. 383 of this Partial Award.

[74] Indian Commissioner's letter to the Pakistani Commissioner, 19 June 2006, (Annex PK-163).

[75] India's Counter-Memorial, Appendix 2, para. 2.





Source: Pakistan's Memorial, volume 2, Figure 9.

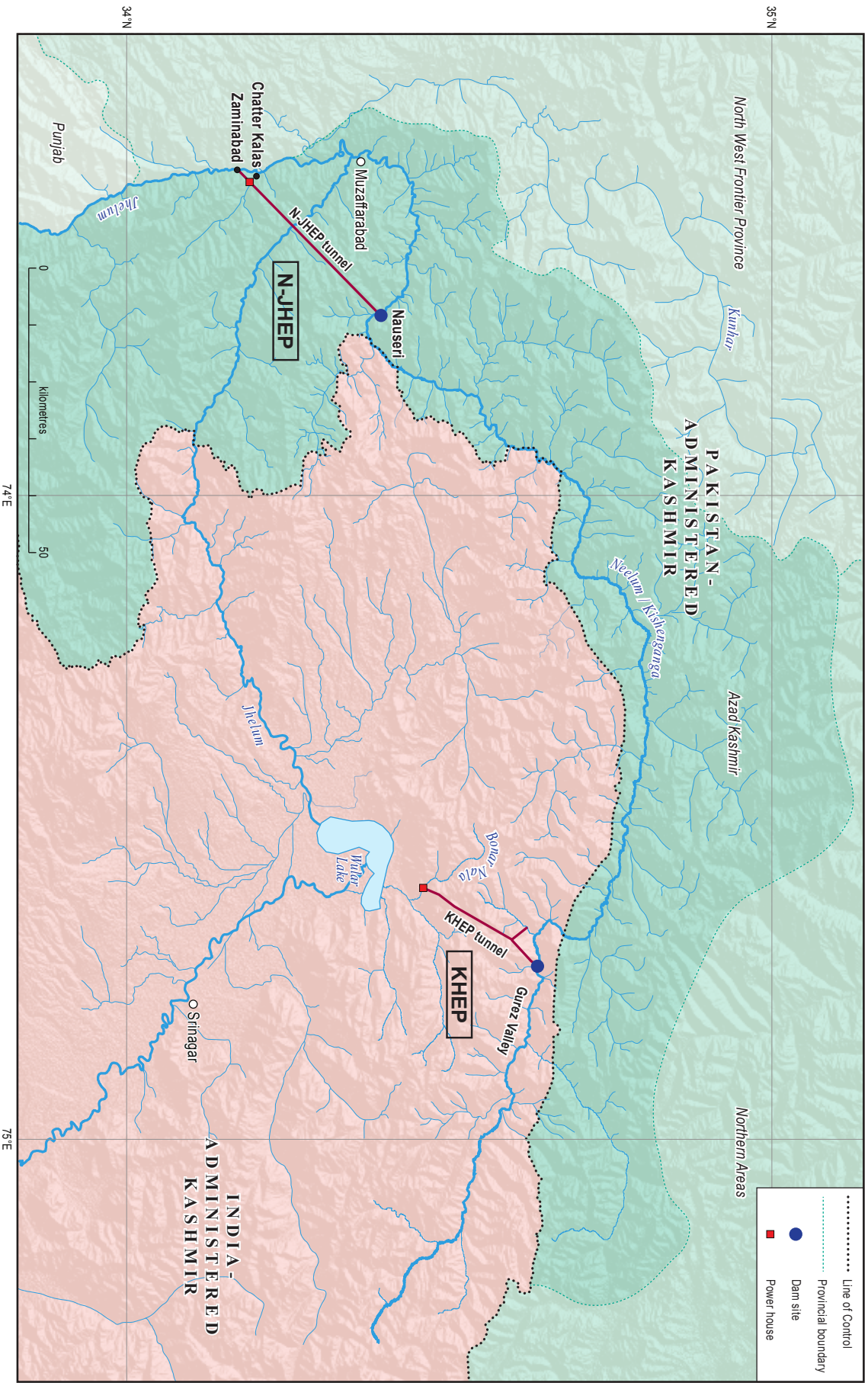
157. As stated by India, the KHEP is designed to have an installed capacity of 330 megawatts and is intended to generate 1350 gigawatt hours in a 90 percent dependable year for India's northern regional grid, comprising the states of Himachal Pradesh, Punjab, Haryana, Uttar Pradesh, Uttaranchal, Rajasthan, Union Territory of Chandigarh & Delhi and India-administered Jammu and Kashmir.[76]

158. As described in Pakistan's Memorial, the NJHEP's design includes: (1) a 41.5-metre dam to be constructed on the Kishenganga/Neelum River at Nauseri, in Pakistan-administered Jammu and Kashmir, 158 kilometres downstream of the KHEP and a short distance upstream of Muzaffarabad; and (2) a tunnel of approximately 30 kilometres through which water will be diverted from the Kishenganga/Neelum River to an underground powerhouse at Chatter Kalas. After power generation, the water will be returned to the Jhelum River near Zaminabad. The NJHEP has a design capacity of 969 megawatts and is intended to provide peaking power from 18:00 to 22:00 hours throughout the year and full-time operation during the high flow season. [77]

159. The respective locations of the KHEP and the NJHEP can be seen on the following map:

[76] India's Counter-Memorial, Appendix 2, para. 3.

[77] Pakistan's Memorial, paras. 3.19-3.20; Pakistan's Memorial, vol. 3, Tab B, National Engineering Services Pakistan Limited, "Kishenganga/Neelum River: Hydrology and Impact of Kishenganga Hydroeletric Plant on Energy Generation in Pakistan," April 2011, p. ES-1.



Source: Pakistan's Memorial, volume 2, Figure 3.

E. THE IMPACT OF THE KHEP ON THE NJHEP

160. It is undisputed between the Parties that the operation of the KHEP would to some extent affect the power-generating capacity of the NJHEP, although the precise numbers cited by the Parties differ somewhat.[78] The Parties' contentions as to the potential effect of the KHEP on the volume of water in the Kishenganga/Neelum River available for power generation at Nauseri (from where water is diverted to the NJHEP's power station) and on potential energy production by the NJHEP may be summarized as follows:[79]

	Average Flow Reduction at Nauseri (in percent)		Average Energy Production Reduction at NJHEP (in percent)	
	In Pakistan's submission	**In India's submission**	**In Pakistan's submission**	**In India's submission**
October to March	33	29.88	35	29.9
April to September	11	4.59	6	4.6
Annually	14	11.2	13	11.2

[78] *See* paras. 247 and 252 of this Partial Award for a discussion of the reasons for this discrepancy.

[79] Pakistan's Memorial, paras. 3.29-3.33, referring to Pakistan's Memorial, vol. 3, Tab B, National Engineering Services Pakistan Limited, "Kishenganga/Neelum River: Hydrology and Impact of Kishenganga Hydroeletric Plant on Energy Generation in Pakistan, April 2011, p. 86, table 14, p. 89, table 16; Pakistan's Memorial, Tab A, Jens Christian Refsgaard, "Review of NESPAK Report: Hydrology and Impact of Kishenganga Hydroeletric Plant on Energy Generation in Pakistan," 12 May 2011, para. 2.5; India's Counter-Memorial, paras. 5.13, 5.16, table 5.2, referring to India's Counter-Memorial, Tab A, Central Water Commission, Government of India, "Hydrology Report on Kishenganga Hydro-Electric Project," October 2011, p. 48.

III. ARGUMENTS OF THE PARTIES

161. This Chapter first summarizes the Parties' arguments on the First Dispute (Part A) and then those on the Second Dispute (Part B).

A. THE DIVERSION OF THE KISHENGANGA/NEELUM RIVER UNDER THE TERMS OF THE TREATY

162. As stated in Pakistan's Request for Arbitration and at the outset of its Memorial, the First Dispute concerns the following:

> Whether India's proposed diversion of the river Kishenganga (Neelum) into another Tributary, i.e. the Bonar-Madmati Nallah, being one central element of the Kishenganga Project, breaches India's legal obligations owed to Pakistan under the Treaty, as interpreted and applied in accordance with international law, including India's obligations under Article III(2) (let flow all the waters of the Western rivers and not permit any interference with those waters) and Article IV(6) (maintenance of natural channels).[80]

163. The First Dispute thus centers on whether the intended diversion of water from the Kishenganga/Neelum River as part of the KHEP is prohibited under the Treaty. Pakistan alleges three principal Treaty violations: (1) breach of the general obligation to "let flow" the waters of the Western Rivers; (2) breach of requirements pertaining to the permissible use of the waters for the generation of hydro-electric power; and (3) breach of the obligation to use best endeavours to maintain the natural channels of the Western Rivers.

1. The Parties' arguments on the governing principles of the Treaty for use of the waters of the Western Rivers

164. Underlying the Parties' disagreement on hydro-electric projects such as the KHEP is a more fundamental divergence about the principles established by the Treaty for the use of the waters of the Western Rivers. Before turning to the Treaty's specific treatment of hydro-electric power generation, this section outlines the Parties' contrasting views on the governing principles through which the Treaty regulates the use of the Western Rivers.

[80] Pakistan's Request for Arbitration, para. 4(a); Pakistan's Memorial, para. 1.12.

165. Article III of the Treaty provides that:

> (1) Pakistan shall receive for unrestricted use all those waters of the Western Rivers which India is under obligation to let flow under the provisions of Paragraph (2).
>
> (2) India shall be under an obligation to let flow all the waters of the Western Rivers, and shall not permit any interference with these waters, except for the following uses, restricted (except as provided in item (c)(ii) of Paragraph 5 of Annexure C) in the case of each of the rivers, The Indus, The Jhelum and The Chenab, to the drainage basin thereof:
>
> (a) Domestic Use;
>
> (b) Non-Consumptive Use;
>
> (c) Agricultural Use, as set out in Annexure C; and
>
> (d) Generation of hydro-electric power, as set out in Annexure D.

166. Pakistan contends that the KHEP's proposed diversion of water from the Kishenganga/Neelum River into the Bonar Nallah tributary violates India's obligation under Article III(1) to "let flow" the waters of the Western Rivers (including those of the Jhelum and its tributaries) and constitutes an "interference" with those waters prohibited by Article III(2).[81] Pakistan stresses that India's obligations to "let flow" and "not permit any interference with" the waters of the Western Rivers limit the scope of the exceptions to these obligations listed in Article III(2).[82]

167. In India's view, Pakistan's interpretation of Article III nullifies the four Article III(2) exceptions to the "let flow" obligation,[83] the fourth of which permits the construction of the KHEP. According to India, Pakistan's reading of the Article would destroy India's right to build and operate any hydro-electric project on the Western Rivers.[84] India contends that the Treaty intends to create a distribution that achieves the "most complete and satisfactory utilisation of the waters" rather than to mandate any guiding principle with respect to the appropriate flow of the waters.[85]

---

[81] Pakistan's Memorial, para. 5.6; Hearing Tr., (Day 4), 23 August 2012, at 11:5-8.

[82] Pakistan's Memorial, para. 5.8.

[83] India's Counter-Memorial, paras. 1.5, 1.7, 1.24, 4.16.

[84] India's Rejoinder, paras. 1.4, 2.15.

[85] India's Counter-Memorial, paras. 1.4, 4.61, 4.62, quoting Treaty, Preamble.

(a) The meaning of the Treaty text

Pakistan's arguments

168. Pakistan argues that Article III imposes two general obligations on India. The first and most important, which Pakistan refers to as the "let flow" obligation, is a positive obligation according to which "all the waters of each River must be permitted to flow, i.e., to flow in accordance with their natural patterns."[86] In Pakistan's view, India's obligation to "let flow all the waters" constitutes a right for Pakistan to the unrestricted flow of the water "at the time when, and in the location where, it would naturally flow."[87] The obligation refers not only to the volume of water but also to the maintenance and timing of the flow.[88]

169. The second general obligation that Pakistan identifies is the prohibition in Article III(2) of "any interference with the waters" of the Western Rivers (including the waters of the Jhelum and its tributaries). As an initial matter, Pakistan notes that "interference with the waters" is a term of art in the Treaty, defined in Article I(15) as "[a]ny act of withdrawal [from the waters]" or "[a]ny man-made obstruction to their flow which causes a change in the volume . . . of the daily flow of the waters." Pakistan submits that "the diversion of waters to an entirely different location would be inimical to this prohibition."[89]

170. Although Pakistan recognizes certain exceptions to the "let flow" and non-interference obligations, which are stated in Article III(2), it emphasizes that the foregoing obligations, as made clear by both Articles II and III, are the "fundamental principle underlying the Treaty."[90] The flow of the waters of the Western Rivers is, to Pakistan, a matter of "existential importance."[91] Thus, Pakistan contends that the exceptions in Article III(2) should be

---

[86] Pakistan's Memorial, para. 5.6a.

[87] Pakistan's Memorial, para. 5.6a.

[88] Pakistan's Memorial, paras. 1.7, 1.94.

[89] Pakistan's Memorial, para. 5.6b.

[90] Pakistan's Memorial, para. 1.97. Article II of the Treaty provides, in relevant part:

> (1) All the waters of the Eastern Rivers shall be available for the unrestricted use of India, except as otherwise expressly provided in this Article.
>
> (2) Except for Domestic Use and Non-Consumptive Use, Pakistan shall be under an obligation to let flow, and shall not permit any interference with, the waters of the Sutlej Main and the Ravi Main in the reaches where these rivers flow in Pakistan and have not yet finally crossed into Pakistan.

[91] Pakistan's Memorial, para. 5.7.

interpreted in light of India's central obligations under the Treaty to "let flow" and "not permit any interference with" those waters.[92] Moreover, it is an elementary concept of legal drafting, Pakistan maintains, that "exceptions should not be given a wide interpretation."[93] Pakistan's position is that the burden of demonstrating that its project falls within the "very limited exceptions" available under the Treaty rests with India.[94]

171. While the language of the Preamble acknowledges the importance of attaining the "most complete and satisfactory" utilization of the waters of the Indus river system, for Pakistan, the phrase does not carry as much significance as India attributes to it.[95] In Pakistan's view, it is the Treaty's "precise stipulation of rights and obligations" that "give[s] definition to what is complete and satisfactory."[96] At the same time, Pakistan maintains, other restrictions specified in the Treaty "cannot be interpreted away on the basis of the Preamble's reference to complete and satisfactory utilisation."[97]

India's arguments

172. India disagrees with Pakistan's interpretation of the "let flow" and non-interference obligations. India's position is that Pakistan has a right under Article III(1) to receive for its unrestricted use in Pakistan "all those waters of the Western Rivers which India is under an obligation to let flow . . . but *only* those waters, and Pakistan has a right to their unrestricted use *only* after she has actually received them."[98]

173. Contrary to Pakistan's position, India insists that there is no absolute principle in the Treaty of non-interference and of letting flow all the waters. Rather, the obligation to "let flow" the waters is subject to specific exceptions within which the KHEP squarely falls.[99] Likewise, the prohibition in Article III(2) of "any interference with" is followed by the phrase "except for the

---

92 Pakistan's Reply, para. 2.45.

93 Pakistan's Memorial, para. 1.97.

94 Pakistan's Memorial, para. 2.33.

95 Pakistan's Reply, para. 2.30.

96 Pakistan's Reply, para. 2.30.

97 Pakistan's Reply, para. 2.30.

98 India's Counter-Memorial, para. 4.26. Emphasis in the original. *See also* India's Rejoinder, para. 2.30.

99 India's Counter-Memorial, para. 2.71.

following uses," the effect of which is, India submits, to reverse the obligations preceding it so that India may "interfere" to carry out any of the uses enumerated thereafter.[100]

174. India considers that the words of the Treaty "must be presumed to be the authentic expression of the intentions of the parties"[101] and be interpreted in accordance with their ordinary meaning as prescribed by the customary international law of treaty interpretation.[102] Thus, the text of Article III(2) should be taken on its face, as a whole; and at most, the Preamble should be taken into account to provide context.[103] According to India, the Preamble guides the Court to the goals pursued by the Parties at the time of signature, namely, to achieve the "most complete and satisfactory utilisation of the waters."[104]

(b) The Treaty's drafting history

Pakistan's arguments

175. Pakistan maintains that draft texts and communications exchanged during the negotiation of the Treaty support its reading. Relying on these documents, Pakistan asserts that the Treaty is premised on the idea that "the flow of the waters that make up the Indus Basin system should be definitively and permanently divided between the two States." Each State was to receive control of three rivers and their tributaries and to be bound by certain obligations regarding the flow in its territory of the rivers allocated to the other State.[105] Pakistan argues that this approach constitutes the "control/let flow" principle—a "primary point of reference in the Treaty"[106] that was carefully crafted to safeguard the water supply on which the people of Pakistan depend.[107]

---

[100] India's Counter-Memorial, paras. 4.28, 4.30.

[101] India's Counter-Memorial, para. 4.50, quoting *Commentary of the International Law Commission on what became art. 31 of the Vienna Convention*, Y.B. Int'l L. Comm'n, vol. II, 1966, (Annex IN-LX-8), p. 220. As a general proposition, India acknowledges that while neither Party is a party to the Vienna Convention on the Law of Treaties, 23 May 1969, 1155 U.N.T.S. 331 ("VCLT"), the principles of that Convention are part of customary international law. India's Counter-Memorial, para. 4.48.

[102] India's Counter-Memorial, para. 4.47.

[103] India's Counter-Memorial, para. 4.57; India's Rejoinder, para. 2.8.

[104] Hearing Tr., (Day 5), 24 August 2012, at 17:2-25..

[105] Pakistan's Memorial, paras. 1.88-1.89.

[106] Pakistan's Memorial, para. 1.92.

[107] Pakistan's Memorial, paras. 1.90-1.91.

176. Highlighting the unique features of the Indus river system, Pakistan emphasizes that the Treaty drafters never considered an equal division of the waters between the two States and that India never suggested such a division during the negotiations. Pakistan notes that India, unlike Pakistan, does not depend on the rivers of the Indus system for its principal water supplies.[108] Moreover, Pakistan's position as a downstream State puts it in a permanent position of vulnerability. Pakistan submits that this position explains its willingness to agree to the division set out in the Treaty.[109] In particular, the restrictions imposed by Annexure D on the design, construction and operation of new hydro-electric plants were important to Pakistan at the time of signing because without them, India could have controlled the flow of the waters at will; that is, India would have been able to "turn off the tap" of Pakistan's water supply.[110]

177. Pakistan puts emphasis on the World Bank's 1954 Proposal, which, in its view, introduced the "control/let flow" principle; it suggests that this proposal gave rise to the Treaty's overall approach that control of the rivers would be divided.[111] According to Pakistan, the two central principles of the 1954 Proposal were that: (1) historical withdrawals must be continued but not necessarily from existing sources; and (2) control over the rivers would be divided.[112] Pakistan also relies on the 1957 "Head of Agreement" prepared by the World Bank, which states that "the entire flow of the three Western Rivers . . . shall be available for the exclusive use and benefit of Pakistan";[113] in Pakistan's view, this indicates the Treaty's concern with ensuring that India would not diminish the flow of water to Pakistan.[114]

178. Pakistan further argues that India's reliance on the 8 November 1951 letter from the World Bank to argue that the object and purpose of the Treaty is one of cooperative development ("in such a manner as most effectively to promote the development of the Indus basin viewed as a

[108] Pakistan's Reply, para. 2.41.

[109] Pakistan's Reply, para. 2.5.

[110] Pakistan's Memorial, para. 6.3.

[111] Pakistan's Reply, paras. 2.33-2.34.

[112] Pakistan's Reply, para. 2.34; *see also* Pakistan's Memorial, paras. 1.37-1.54.

[113] Pakistan's Memorial, para. 1.51, quoting Letter of the World Bank, 13 May 1957, Annex Setting Out Some Suggestions for "Head of Agreement," (Annex PK-5), Art. 1.

[114] Pakistan's Reply, paras. 2.36-2.38. Pakistan argues that the World Bank's press release on the conclusion of the Treaty contains a "clear statement of the control/let flow principle," contrary to India's argument. Pakistan's Reply, para. 2.38, referring to World Bank's press release, 19 September 1960, (Annex IN-51), p. 6.

unit") is misplaced and neglects the tenor of subsequent negotiations and the Treaty that was actually concluded.[115]

179. To the extent that maximization of development was an objective of the Treaty, Pakistan maintains that it led "to an obligation of cooperation, not unilateral rights of use or development."[116] This is apparent from the only specific Treaty provision dedicated to the subject—Article VII(1), which states:

> The two Parties recognize that they have a common interest in the optimum development of the Rivers, and, to that end, they declare their intention to co-operate, by mutual agreement, to the fullest possible extent. [. . .]

Thus, it is not for India to impose on Pakistan what it considers to be optimal for development.[117]

180. Pakistan argues that its interpretation of the Treaty is supported by the World Bank's communications with the Parties. Pakistan points to a letter dated 6 February 1960 from the President of the World Bank to the Pakistani Finance Minister in which the former stated that he was "satisfied that there is no doubt and no reservation in the mind of any one, either in the Indian delegation, or the Bank, that the present language of Article III(1) and (2) imposes the treaty obligation on India to allow to flow down *all* waters of the Western Rivers. . . ."[118]

181. Pakistan disputes that the 1957 *Lake Lanoux* arbitral award (delivered while the Treaty was being negotiated), to which India refers, bears any relevance to the determination of the permissibility under the Treaty of the planned diversion of the Kishenganga/Neelum waters.[119] In that case, France had developed a plan to divert water for the generation of hydro-electricity from Lake Lanoux, which is situated in the French Pyrenees near the border with Spain, and to return an equivalent amount of water to the Carol River before it flows into Spain.[120] Spain objected, claiming that the French project breached the treaty governing the parties' use of the

[115] Pakistan's Reply, para. 2.33.

[116] Pakistan's Reply, para. 2.31.

[117] Pakistan's Reply, para. 2.32.

[118] Pakistan's Memorial, para. 5.6, fn. 175, quoting President of the World Bank's letter to the Pakistani Finance Minister, 6 February 1960, (Annex PK-16). Emphasis in the original.

[119] Pakistan's Reply, paras. 2.6-2.7, referring to *Affaire du Lac Lanoux (France v. Spain)*, Award of 16 November 1957, 12 R.I.A.A. 281 (French original), 1974 Y.B. Int'l L. Comm'n, vol. 2, part 2, p. 194 (1976) (English translation) (Annex IN-LX-2) ("*Lake Lanoux*").

[120] *Ibid.*

waters by removing water from its natural flow into Spain.[121] The *Lake Lanoux* Tribunal ruled that France's diversion was compliant with its treaty obligations toward Spain. In Pakistan's view, even assuming its relevance, *Lake Lanoux* can be distinguished from the present situation as the waters in that case were to be pumped back into the Carol River before they reached Spain.[122] In contrast, the KHEP contemplates a diversion of the waters that does not allow those waters to rejoin the Kishenganga/Neelum River.

182. In sum, for Pakistan, concern over India's control of the waters was a constant element of the Treaty-drafting process. The balance achieved was the result of many years of negotiations aimed at bridging the Parties' conflicting interests; the result of that process should be maintained.[123]

India's arguments

183. In India's view, Pakistan misconstrues the *travaux préparatoires* of the Treaty. India maintains that evidence from the Treaty's negotiating history suggests that Pakistan wanted "control/let flow" to be a purpose of the Treaty, but India "would never have agreed to that, and even the Bank firmly rejected it."[124] Not once, India argues, does the drafting history state or imply that the Treaty drafters had the objective of ensuring that India not diminish the flow of water to Pakistan.[125] The word "control" does not appear in the relevant articles.[126]

184. According to India, Pakistan agreed to proceed on the basis of the principles set out in the World Bank's letter of 8 November 1951 which stated that "[t]he water resources of the Indus basin should be co-operatively developed and used in such a manner as most effectively to promote the economic development of the Indus Basin as a unit."[127] The World Bank rejected Pakistan's proposal to structure the Treaty around a concept of "protecting existing uses from existing sources" and instead proposed that the waters be divided; both Parties agreed to this

[121] *Ibid*, p. 196.

[122] Pakistan's Reply, para. 2.7, fn. 5.

[123] Pakistan's Memorial, paras. 1.47, 1.55.

[124] India's Counter-Memorial, para. 2.77.

[125] India's Counter-Memorial, para. 2.75.

[126] Hearing Tr., (Day 5), 24 August 2012, at 36:1-2.

[127] India's Counter-Memorial, para. 2.47, quoting Letter from Eugene R. Black, President of the World Bank to Pakistan's Prime Minister Khawaja Nazimuddin, 8 November 1951, (Annex IN-33), (an identical letter was sent to India's Prime Minister Jawaharlal Nehru).

approach which formed the basis for the further conclusion of the Treaty.[128] India considers that the Treaty was purposefully designed around a "principle of freedom of action," while also giving the Parties different rights, as appropriate to their differing interests and geographies.[129]

185. India additionally maintains that a key principle to the Treaty was that "there should be nothing in the [T]reaty which would stand in the way of optimum utilisation of the water resources allocated to either party."[130] This fundamental principle was affirmed, in India's view, in the determination made in 2007 by a neutral expert regarding a difference arising under the Treaty in relation to India's Baglihar hydro-electric project located on the Chenab river ("***Baglihar***").[131] The Neutral Expert determined that both States' "rights and obligations . . . should be read in the light of new technical norms and new standards as provided for by the Treaty."[132]

186. India contends that the production of hydro-electric power has "always been contemplated as an integral part, and indeed objective," of the approach to the development of the Indus basin taken by the Treaty.[133] India relies on a 1951 letter from the President of the World Bank, referring to power generation, and to similar exchanges during the course of the nine-year negotiation period.[134] It also refers to a statement by India's principal representative to the negotiations that to deny India the right to develop hydro-electric power would be "contrary to the purposes and the spirit of the Bank Proposal."[135] India asserts that by 1959 Pakistan had accepted India's right to generate hydro-electric power on the Western Rivers, as reflected in the Heads of Agreement of 15 September 1959.[136] India also cites the press release issued on

---

[128] India's Counter-Memorial, paras. 2.55, 2.57.

[129] India's Counter-Memorial, paras. 2.75-2.76, 2.81-2.85.

[130] India's Counter-Memorial, para. 4.14, quoting Niranjan Das Gulhati, *Indus Waters Treaty: an exercise in international mediation* (Allied Publishers, 1973), p. 266.

[131] India's Counter-Memorial, para. 4.15, referring to Raymond Lafitte, *Determination of Neutral Expert on the Baglihar Project*, 12 February 2007, (Annex PK-230), ("*Baglihar* Determination").

[132] India's Counter-Memorial, para. 4.15, quoting *Baglihar* Determination, executive summary p. 5.

[133] India's Counter-Memorial, para. 4.4.

[134] India's Counter-Memorial, paras. 4.4, referring to Letter from Eugene R. Black, President of the World Bank to Pakistan's Prime Minister Khawaja Nazimuddin, 8 November 1951, (Annex IN-33), (an identical letter was sent to India's Prime Minister Jawaharlal Nehru).

[135] India's Counter-Memorial, para. 4.9, quoting Niranjan Das Gulhati's letter to W.A.B. Iliff, Vice President of the World Bank, 24 December 1957, (Annex IN-47).

[136] India's Counter-Memorial, para. 4.12, referring to Heads of Agreement, 15 September 1959, (Annex PK-10).

the signing of the Treaty which specifically mentions that the Treaty permits India's use of the upstream water for the generation of hydro-electric power, as well as for irrigation.[137]

187. India compares this case to the 1957 *Lake Lanoux* arbitration between France and Spain. In India's view, *Lake Lanoux* is similar insofar as Spain argued there that the French project was "calculated to enable it . . . to bring pressure to bear on the other signatory" and sought to prevent it.[138] In that case, the Tribunal stated that it was not for it

> to judge the reasons or experiences which might lead the Spanish Government to give expression to a certain anxiety. . . . Moreover, the French Government's proposals . . . include 'the assurance that it will not in any case, interfere with the regime thus established.' . . . The Tribunal must, therefore, answer the question submitted by the *compromis* on the basis of this assurance. [139]

Like Spain, Pakistan cannot insist on a further guarantee that India does not intend to harm Pakistan: bad faith cannot be presumed.[140] India believes that "fifty years of interference-free practice" under the Treaty "should be assurance enough for Pakistan"[141] and that Pakistan's "tap" concern is an unjustified preoccupation with the 1948 East Punjab/West Punjab incident.[142] Since that initial, isolated incident, India emphasizes, no further interference with deliveries to Pakistan has occurred.[143]

188. India also refers to the *Lake Lanoux* Tribunal's concluding observation that there is not, "in the generally accepted principles of international law, a rule which forbids a State, acting to protect its legitimate interests, from placing itself in a situation which enables it in fact, in violation of its international obligations, to do even serious injury to a neighbouring State."[144] Although India emphasizes that it has no intention to harm Pakistan in this way, international law does not prohibit activities merely on the basis of a potential to harm. "If it did, no State could situate

---

[137] India's Counter-Memorial, para. 2.20, referring to World Bank's press release, 19 September 1960, (Annex IN-51).

[138] India's Counter-Memorial, para. 4.19, quoting *Lake Lanoux*, p. 196.

[139] *Lake Lanoux*, p. 196.

[140] India's Counter-Memorial, para. 4.21, referring to *Lake Lanoux*, p. 196.

[141] India's Counter-Memorial, para. 4.21.

[142] India's Counter-Memorial, para. 4.51; *see also* para. 132 of this Partial Award.

[143] India's Counter-Memorial, paras. 2.34-2.41.

[144] India's Counter-Memorial, para. 4.22, quoting *Lake Lanoux*, p. 196.

a chemical plant, a nuclear power plant, or any other kind of potentially hazardous activity in a border region."[145]

189. Finally, India contends that Pakistan has not identified any support for its claim that India has no right permanently to divert the entirety of the waters of the Kishenganga/Neelum.[146] Subject to the express conditions for diversion, India maintains that the Treaty gives it an "unrestricted" right in this regard,[147] as discussed further in the next section.

2. The Parties' arguments on the Treaty provisions governing hydro-electric projects

190. Consistently with the Parties' disagreement on the governing principles of the Treaty (outlined in the previous section), the Parties also disagree on the Treaty's regulatory framework for hydro-electric projects on the Western Rivers. Both Parties accept that the construction of the KHEP is permitted by the Treaty only if it falls under Article III(2)(d) which allows for "[g]eneration of hydro-electric power, as set out in Annexure D." Annexure D elaborates specifically on the "Generation of Hydro-electric Power by India on the Western Rivers." The Parties accept that the KHEP would be permitted if it met the requirements of Annexure D, but differ as to the nature of those requirements.[148]

191. The Parties' arguments focus, first, on analyzing the language of Article III(2) concerning the permitted uses of the waters within the drainage basin of the river in question.[149] Next, they turn to the purpose and meaning of the relevant paragraphs of Annexure D, particularly Paragraph 15, which dictates the scope of permissible diversion of waters for purposes of a

---

[145] India's Counter-Memorial, para. 4.22.

[146] India's Counter-Memorial, paras. 4.80-4.81

[147] India's Counter-Memorial, para. 4.81.

[148] Pakistan's Memorial, paras. 5.10-5.17; India's Counter-Memorial, para. 4.79; Pakistan's Reply, para. 2.50.

[149] Article III(2) provides:

> India shall be under an obligation to let flow all the waters of the Western Rivers, and shall not permit any interference with these waters, except for the following uses, restricted (except as provided in item (c)(ii) of Paragraph 5 of Annexure C) in the case of each of the rivers, The Indus, The Jhelum and The Chenab, to the drainage basin thereof:
>
> (a) Domestic Use;
>
> (b) Non-Consumptive Use;
>
> (c) Agricultural Use, as set out in Annexure C; and
>
> (d) Generation of hydro-electric power, as set out in Annexure D.

hydro-electric power plant.[150] Finally, the Parties disagree about the conditions governing whether the water released below a hydro-electric plant may be delivered into another tributary.

192. Pakistan's view is that the KHEP's planned diversion of the Kishenganga/Neelum River is incompatible with the meaning of the term "Run-of-River Plant" under the Treaty. Pakistan argues that the provision of Annexure D permitting delivery of water released below a hydro-electric plant into another tributary does not establish a right to divert permanently the entirety of the waters. Even if the KHEP is permitted under this provision, Pakistan contends that the use of the electricity generated must be restricted to the Jhelum River's drainage basin. India contests each of Pakistan's assertions.

(a) "Restricted . . . to the drainage basin thereof"

193. The Parties first disagree on the scope of the language in Article III(2) that restricts permissible Indian uses of the waters of the Western Rivers to the drainage basin of the appropriate river—here, the Jhelum.

Pakistan's arguments

194. Pakistan submits that Article III(2) prohibits India from utilizing the waters of any tributary of the Jhelum River (including the Kishenganga/Neelum) for the generation of power for general use outside the drainage basin of the Jhelum, as is envisaged with respect to the power to be generated by the KHEP. Put differently, any electricity generated under the exception to the "let flow" obligation of Article III(2) must be used within the drainage basin of the Jhelum.[151] Pakistan maintains that under India's alternative interpretation, the drainage basin restriction

[150] Paragraph 15 of Annexure D provides:

> . . . [T]he works connected with a Plant shall be so operated that (a) the volume of water received in the river upstream of the Plant, during any period of seven consecutive days, shall be delivered into the river below the Plant during the same seven-day period, and (b) in any one period of 24 hours within that seven-day period, the volume delivered into the river below the Plant shall be not less than 30%, and not more than 130%, of the volume received in the river above the Plant during the same 24-hour period: Provided however that:
>
> […]
>
> (iii) Where a Plant is located on a Tributary of the Jhelum on which Pakistan has any Agricultural use or hydro-electric use, the water released below the Plant may be delivered, if necessary, into another Tributary but only to the extent that the then existing Agricultural Use or hydro-electric use by Pakistan on the former Tributary would not be adversely affected.

[151] Pakistan's Memorial, para. 5.26.

would "add nothing so far as the generation of hydroelectric power is concerned."[152] Pakistan is particularly concerned that were the Treaty to be interpreted otherwise, India's potential uses on the Western Rivers would be limitless, depleting a resource that is critical for Pakistan.[153]

195. Pakistan refers to the 15 September 1959 Head of Agreement draft of what became Article III, which treated hydro-electric uses separately from the other three exceptions.[154] According to a table of amendments prepared by Pakistan, the language appearing in the final version of the Treaty reflects a purposeful change, describing the generation of hydro-electric power "more mildly as a use and not as something to which India is 'entitled'" and restricting this use "in the case of each of the Western Rivers to the drainage basin thereof."[155]

196. By way of comparison, Pakistan discusses how Annexure C to the Treaty contains an express exception to Article III(2)'s drainage basin restriction with respect to India's agricultural use of the Western Rivers. According to Pakistan, Annexure C permits India to withdraw specified maximum quantities of water for a small area outside the drainage basin of the Chenab. This

---

[152] Pakistan's Reply, paras. 2.46-2.47.

[153] Pakistan's Memorial, para. 5.25.

[154] Pakistan's Memorial, referring to Article IV of the Heads of Agreement, 15 September 1959, (Annex PK-10), provides as follows:

> ARRANGEMENTS CONCERNING WESTERN RIVERS
>
> (1) India shall let flow the waters of the Western Rivers free from any interference except for the following uses restricted in the case of each river to the drainage basin of that river.
>
> (i) Domestic uses;
>
> (ii) Non-consumptive uses; and
>
> (iii) Consumptive uses as set out below
>
> The question of consumptive uses is being approached on the basis of fixing a quantum of use to be specified in the treaty.
>
> (2) India shall be entitled to generate hydro-electric power on the Western Rivers in accordance with the provisions of Annex. "B".
>
> (3) Pakistan shall be entitled to the unrestricted use of the waters of the Western Rivers, except to the extent specified in Paragraphs (1) and (2) of this Article.

This text was modified in the final text of the Treaty to include hydro-electric use alongside other uses restricted to the drainage basin of a particular river.

[155] Pakistan's Memorial, paras. 5.29-5.32, quoting Comparative Table of Provision of the Heads of Agreement of 15 September 1959 and the Draft Indus Waters Treaty, (Annex PK-14), (originally appended to Mueeneddin's letter to W. Shaikh, 15 December 1959, (Annex PK-13)..

exception is, in Pakistan's view, the only deviation from the foundational principle prohibiting use outside the drainage basin.[156]

India's arguments

197. India argues that Pakistan misinterprets the word "use" in the phrase "except for the following uses." For India, the "use" in question under Art. III(2)(d) is the use *of the waters* for the generation of hydro-electric power, not the use *of the electricity* generated. Power generation must take place in the drainage basin, but the power can be transported elsewhere.[157] India maintains that there is no textual support for Pakistan's argument. Rather, Treaty provisions allowing the return of water to another tributary confirm the framers' intent to control the water rather than the electricity produced by the water.[158] Referring to Article XI(1)(a) of the Treaty, which provides: "(1) It is expressly understood that (a) this Treaty governs the rights and obligations of each Party *with respect only to the use of the waters of the Rivers* and matters incidental thereto," India argues that it is clear that how India makes use of the electricity generated from the KHEP is not governed by the Treaty.[159]

198. India further observes that Pakistan has not previously raised this objection in relation to at least four projects in other locations which contribute their generated power to locations outside their respective drainage basins.[160]

(b) Run-of-River Plants

199. In light of India's present design of the KHEP as a Run-of-River Plant, both Parties look to the Treaty provisions regulating this type of hydro-electric project as the criteria for assessing the legality of the design and operation of the KHEP. Part 3 of Annexure D sets out considerations for the design and operation of new Run-of-River Plants such as the KHEP. Paragraph 15, on which the Parties focus their attention, provides:

> Subject to the provisions of Paragraph 17, the works connected with a Plant shall be so operated that (a) the volume of water received in the river upstream of the Plant, during

[156] Pakistan's Memorial, para. 5.28.

[157] India's Counter-Memorial, para. 4.39.

[158] India's Counter-Memorial, para. 4.76.

[159] India's Rejoinder, para. 1.37, quoting Treaty, Art. XI(1)(a), emphasis added by India.

[160] India's Counter-Memorial, paras. 4.40-4.41.

> any period of seven consecutive days, shall be delivered into the river below the Plant during the same seven-day period, and (b) in any one period of 24 hours within that seven-day period, the volume delivered into the river below the Plant shall be not less than 30%, and not more than 130%, of the volume received in the river above the Plant during the same 24-hour period: Provided however that:
>
> [. . .]
>
> (iii) where a Plant is located on a Tributary of The Jhelum on which Pakistan has any Agricultural Use or hydro-electric use, the water released below the Plant may be delivered, if necessary, into another Tributary but only to the extent that the then existing Agricultural Use or hydro-electric use by Pakistan on the former Tributary would not be adversely affected.

200. Pakistan argues that the KHEP does not meet the criteria of Part 3 of Annexure D and therefore falls outside the realm of permissible projects. India asserts the contrary, maintaining that the KHEP meets the relevant provisions of Annexure D and that Pakistan's present position contradicts its earlier representation—upon which India appropriately relied—that the diversion of waters into another tributary is permitted under Annexure D.

Pakistan's arguments

201. According to Pakistan, Part 3 of Annexure D contains two sets of provisions: one addressing the design of a Run-of-River Plant and a second concerning the operation of such a Plant. In this respect, Pakistan submits that Paragraphs 8 to 13 of Part 3 of Annexure D relate to design, while Paragraphs 14 to 17 deal with the operation of the Plant.[161] In particular, Paragraph 15 "presumes and provides for the operation of a plant."[162]

202. Pakistan argues that the KHEP is not designed to operate within the bounds of Paragraph 15, particularly the criteria on the delivery of water into another tributary. In Pakistan's view, this provision allows the occasional delivery of waters to another tributary but does not provide for a project based on a large-scale and permanent diversion to a "quite different location."[163] Pakistan considers that Paragraph 15(iii) "does not seek to establish the basis for a right to design a wholly new type of plant, i.e. a plant that does not allow the river to flow, but instead dams that river [and] permanently channels the entirety of its waters."[164] The KHEP does not

[161] Pakistan's Memorial, para. 5.14; Hearing Tr., (Day 4), 23 August 2012, at 15:10 to 16:4, 16:15 to 18:1..

[162] Pakistan's Memorial, para. 5.17; Hearing Tr., (Day 4), 23 August 2012, at 18:1-3.

[163] Pakistan's Memorial, para. 5.17. *See also* para. 220 of this Partial Award concerning Pakistan's argument that Paragraph 15 permits diversion in case of an emergency.

[164] Pakistan's Memorial, para. 5.20; Pakistan's Reply, para. 2.55. In speaking of the diversion of the "entirety" of the waters, Pakistan refers to the 58.4 m^3/s that will be diverted at the KHEP dam.

even meet India's own definition of a Run-of-River Plant, Pakistan notes; the Bureau of Indian Standards states that "[i]n such stations, the normal course of the river is not materially altered."[165]

203. In further support of the incompatibility of the KHEP with the provisions for Run-of-River Plants, Pakistan points out that Appendix II to Annexure D sets out particular information regarding new projects that India is obliged to submit to Pakistan and that—although such information includes statistics related to the design of the head-race and tail-race of the new Plant—there is "no equivalent category to allow for details of a power tunnel such as India seeks to construct."[166] For this reason, Pakistan asserts that such an arrangement was not contemplated and is therefore not permitted by the Treaty.

204. Turning to the Treaty's drafting history, Pakistan rejects India's premise that Paragraph 15(iii) was introduced into the Treaty with the Kishenganga project in mind. Pakistan insists that the CWPC Letter on which India relies reveals nothing about the meaning of Annexure D and the subject of this dispute. Pakistan points out that the part of the CWPC Letter on which India places emphasis discusses "Storage Works," which are regulated by Annexure E, and offers no insight into the drafters' intentions regarding Annexure D. A draft of Paragraph 15(iii), Pakistan observes, had already been introduced into Annexure D on 23 April 1960; thus, "[i]f a comment with respect to a Kishenganga project had been intended to influence the wording of Annexure D, it is evident that a comment would have been made by reference to the draft of Annexure D that the Chairman [of the CWPC] had before him."[167] Accordingly, Pakistan concludes, the CWPC Letter cannot shed light on the meaning of Paragraph 15(iii) of Annexure D.[168]

205. As to India's assertion that no prohibition of inter-tributary transfers was incorporated into Annexure E in anticipation of a project like the KHEP, Pakistan submits that if India had genuinely intended in 1960 to realize such a project, India would have sought its express inclusion.[169] India identified no record of such an attempt. Pakistan also contests India's submission that Paragraph 10 of Annexure E was included in the Treaty to make the

[165] Pakistan's Reply, para. 1.35, referring to India's Counter-Memorial, para. 7.30.

[166] Pakistan's Memorial, para. 5.20, fn. 185.

[167] Pakistan's Reply, para. 1.12, referring to Draft of Treaty, Annexure D, 23 April 1960, (Annex PK-20).

[168] Pakistan's Reply, para. 2.62.

[169] Pakistan's Reply, para. 1.15.

implementation of the KHEP possible. Paragraph 10 of Annexure E provides that "any Storage Work to be constructed on a Tributary of The Jhelum on which Pakistan has any Agricultural Use or hydro-electric use shall be so designed and operated as not to adversely affect the then existing Agricultural Use or hydro-electric use on that Tributary." Nothing in Paragraph 10, Pakistan emphasizes, suggests permission for an inter-tributary transfer.[170]

India's arguments

206. India maintains that the KHEP conforms to the specifications of Annexure D and submits that there is no basis for Pakistan's argument that Paragraph 15(iii) does not establish a right to divert permanently the entirety of the waters of the Kishenganga/Neelum into another tributary. First, India disputes Pakistan's contention that the latter portion of the Annexure, including Paragraph 15, pertains to the Plant's operation rather than to considerations of design. India argues that the design and operation of a Plant are inextricably linked;[171] to disregard Paragraph 15 because it supposedly addresses operation rather than design would, in India's view, be senseless, as India must necessarily refer to provisions regarding operation in the course of arriving at the design of the project. Furthermore, India considers Pakistan's interpretation of Paragraph 15(iii) to be incompatible with the "unrestricted" nature of India's right to use the waters of the Western Rivers. Provided that India complies with the express restrictions of Annexure D, the latter makes clear that its ability to generate hydro-electric power is to be unrestricted.[172] India also notes that Pakistan's complaint that the KHEP will divert the entirety of the waters is in conflict with the river flow data and fails to take into account the waters contributed to the Kishenganga/Neelum from tributaries below the Gurez site.[173] It would be impossible for India to divert the "entirety" of the waters.[174]

---

[170] Pakistan's Reply, para. 1.16.

[171] India's Rejoinder, para. 1.52.

[172] India's Counter-Memorial, para. 4.31.

[173] India's Counter-Memorial, paras. 4.82-4.85. According to India, the data, and the geography, make clear that additional waters not accounted for in Pakistan's data will contribute to the flow below Gurez. Even without accounting for these, Pakistan's own studies show that the KHEP will not divert the entirety of the waters (showing an average 3.1 m^3/s of water would be available from the catchment downstream of the KHEP up to the Line of Control even in January, the month of lowest flow). India maintains that even with the KHEP, 89 percent of the flows would still be available for power generation at NJHEP.

[174] India's Counter-Memorial, para. 4.83.

207. According to India, inter-tributary transfer was envisaged at the time of the Treaty's drafting.[175] India contends that it "knew in the mid-1950s" that a diversion project on the Kishenganga/Neelum was possible and that it ensured that the Treaty contained a provision designed to permit the implementation of such a project.[176] India argues that the CWPC Letter shows that India was contemplating hydro-electric projects on the Kishenganga/Neelum "that would involve inter-tributary deliveries of water, and that the Treaty framers were aware that such a project was envisaged in the Jhelum Basin."[177]

208. In India's view, Pakistan also recognized the possibility of inter-tributary transfers in 1960. The Pakistani Cabinet decisions of 15 February 1960 recommended that a protection against prejudice to downstream use of the waters be reflected in Annexure D, "so that the uses in the Azad Kashmir [are] not affected adversely by inter-tributary diversions."[178] Thus, Pakistan "may be said to have implicitly accepted the fact that the KHEP could be constructed on the basis of . . . Pakistan's acceptance of that provision [Paragraph 15(iii)]."[179]

209. Since 1960, India observes, Pakistan has repeatedly accepted that inter-tributary transfer is permitted by Annexure D.[180] In one instance, in 2005, the Pakistani Commissioner stated Pakistan's belief that inter-tributary transfers were not permitted under Annexure E for Storage Works, but were permitted under Annexure D for Run-of-River Plants.[181] After having agreed that inter-tributary transfer was permitted for Run-of-River Plants, however, Pakistan changed

---

[175] India's Counter-Memorial, para. 4.77.

[176] India's Counter-Memorial, para. 4.23. According to India, Paragraph 15(iii) was intentionally inserted in the Treaty on the basis of a 1954 hydro-electric survey of the Indus basin carried out by India's CWPC, which identified the possibility of building a hydro-electric scheme on the Kishenganga. *See* India's Counter-Memorial, para. 4.70.

[177] India's Counter-Memorial, para. 3.19-3.20. India also considers that the CWPC Letter makes clear that "'there is only one tributary of the Jhelum' where a scheme such as the KHEP is possible." India's Counter-Memorial, para. 4.92. A proposal by the Jammu and Kashmir State Government in 1981 stated that "a project delivering waters from the Kishenganga through a[n] underground tunnel to a point just above Lake Wullar was the only suitable location based on engineering and geological considerations." India's Counter-Memorial, para. 3.23, referring to Outline Proposal on KHEP, December 1981, (Annex IN-57).

[178] India's Rejoinder, para. 2.76, quoting Decisions of the Cabinet Committee on the Draft of the Treaty, Meeting, 15 February 1960, (Annex PK-17).

[179] India's Counter-Memorial, para. 4.70.

[180] India's Rejoinder, para. 2.44.

[181] India's Counter-Memorial, para. 4.78, referring to Record of the 93rd Meeting of the Commission, New Delhi, 9-13 February 2005, (Annex PK-29), para. 38.

its position (upon learning of India's change in design) to argue that diversion is not permitted under the Treaty.[182]

(c) "Where a Plant is located on a Tributary of the Jhelum . . . water released below the Plant may be delivered . . . into another Tributary"

210. Pakistan argues that the planned KHEP diversion delivers the water from upstream of the Plant into another tributary despite the Treaty's requirement that only "the water released below the Plant" be diverted. Pakistan also contests India's reading of the words "another tributary."

Pakistan's arguments

211. In Pakistan's view, the KHEP does not fall within the scheme laid out by Paragraph 15(iii) because the KHEP is not a "Plant located on a Tributary of The Jhelum" as required by that Paragraph. Only the KHEP's dam is located on a tributary of the Jhelum (the Kishenganga/Neelum), as the "power plant" is 23 kilometres away in a separate catchment area.[183] Pakistan maintains that with this design the KHEP "cannot correctly be characterized as a 'Plant located on a Tributary of The Jhelum.'"[184]

212. Pakistan also refers to the requirement in Appendix II to Annexure D that India provide a map "showing the location of the site" and "the catchment area of the Tributary above the site."[185] As both provisions refer to "the site" of the Plant, Pakistan argues that the Treaty drafters and Parties accepted that the powerhouse and the "Tributary above the site" are to be located in the same catchment area. The KHEP powerhouse, however, is located in the Bonar Nallah catchment area rather than that of the "Tributary above the site" of the dam, the Kishenganga.[186]

213. Even if the KHEP were to be characterized as a Plant on the Kishenganga, Pakistan maintains that it falls outside the scheme of Paragraph 15(iii) because it is not designed in compliance with the Paragraph's requirement that "water released below the Plant may be delivered, if

[182] India's Rejoinder, para. 2.44.

[183] Pakistan's Reply, paras. 1.32-1.33.

[184] Pakistan's Reply, para. 1.32.

[185] Pakistan's Reply, para. 1.33, quoting Treaty, Annexure D, Appendix II, Paras. 1 and 2(a).

[186] Pakistan's Reply, para. 1.33.

necessary, into another Tributary"; rather, in the case of the KHEP, the water only reaches the Plant *after* it has been delivered elsewhere.[187] According to Pakistan, India plans to deliver the water to another tributary upstream of the Plant, rather than below it. Pakistan considers that such delivery is only permitted after the water has passed through the turbines of the Plant.[188]

214. Furthermore, Pakistan contends that the Bonar Nallah is not "another Tributary," as intended by the Treaty, as it is not within the watershed of the Kishenganga. According to Pakistan, the "basic rule" of Paragraph 15 is that "water in a given river above/below a given Plant should equal out over a seven day period." To be consistent with this principle, the tributary into which the water is released below the Plant must be located within the same watershed as the tributary where the Plant is located.[189] Here, unless the waters flow into a tributary of the Kishenganga, these flow provisions will be ineffectual. In other words, Pakistan contends that waters that pass through the KHEP should go back into the same river, "hence balancing out the overall impacts of operation of the Plant."[190]

215. Finally, Pakistan submits that the design of the KHEP also violates the Treaty by creating storage in the Wular Lake, after the water flows from the KHEP into the Bonar Nallah. Storage on the Jhelum Main (which includes the Wular Lake as a "connecting lake") is not permitted to India at all, and neither Paragraph 15(iii) nor Annexure D generally create an exception to this rule.[191]

India's arguments

216. India asserts that the KHEP falls within the express terms of Paragraph 15(iii) of Annexure D because the Plant is located on the Kishenganga—a "Tributary" within the meaning of Paragraph 15(iii). In India's view, Pakistan misinterprets the term "Plant," which properly refers to the entire complex from the dam, through the tunnel and powerhouse, and to the tail-race.[192] Therefore, the water released below "the Plant" will indeed be delivered into another

[187] Pakistan's Reply, para. 1.30.

[188] Hearing Tr., (Day 4), 23 August 2012, at 35:8-25.

[189] Pakistan's Reply, para. 1.34.

[190] Pakistan's Reply, para. 1.34. Hearing Tr., (Day 4), 23 August 2012, at 19:4-19.

[191] Hearing Tr., (Day 3), 22 August 2012, at 178:11-18, 191:9 to 192:24; (Day 4), 23 August 2012, at 68:15-17.

[192] India's Rejoinder, paras. 2.60-2.70, referring to a 1959 draft of the Article that uses "powerhouse" rather than "Plant" before the drafters concluded that "Plant" was more appropriate. Heads of Agreement, 15 September 1959, (Annex PK-10); Hearing Tr., (Day 9), 30 August 2012, at 28:15-32:23.

tributary as required by the Treaty: "it will be released from the tailrace of the Plant into the Bonar Nallah."[193]

217. India also interprets "another Tributary" differently. India maintains that the construction of Paragraph 15(iii) makes it clear that "another Tributary" means any other tributary of the Jhelum and is not limited to a tributary within the watershed of the river on which the Plant is located. In India's view, Pakistan's argument contradicts the terms of Paragraph 15(iii), which first refers to "a Tributary of the Jhelum" and then refers to "another Tributary," implying a further reference to tributaries of the Jhelum.[194]

218. To make use of the difference in elevation to generate power, it is inevitable, India claims, that the release of the waters below the Plant into another tributary will involve delivery into a different catchment area.[195] Annexure D is not an obstacle. India's obligation to provide a map of the "catchment area of the Tributary above site" pursuant to Appendix II to Annexure D is unrelated to the location of the powerhouse.[196] When Paragraph 15(iii) refers to the location of a "Plant" on a tributary, it is referring to the dam. When it refers to the water released below the "Plant," it is referring to the powerhouse.[197] Accordingly, Pakistan's argument that the powerhouse and the "Tributary above the site" are to be located in the same catchment area is unfounded. Moreover, to interpret this provision as Pakistan suggests would defy gravity, requiring the powerhouse to be located upstream of the dam.[198]

(d) "If necessary"

219. The Parties also diverge as to the meaning of the phrase "if necessary" under Paragraph 15(iii), which limits circumstances under which diversion of water is permitted.

[193] India's Rejoinder, para. 1.46(ii); *see also* Hearing Tr., (Day 5), 24 August 2012, at 159:1-2.

[194] India's Rejoinder, para. 2.73.

[195] India's Rejoinder, paras. 1.34-1.35.

[196] India's Rejoinder, para. 2.74.

[197] India's Rejoinder, para. 2.70.

[198] India's Rejoinder, para. 2.74.

Pakistan's arguments

220. The ordinary meaning of "necessary," Pakistan argues, is "indispensable, requisite, needful; that cannot be done without."[199] Pakistan contends that India has not shown that the KHEP diversion is "necessary" pursuant to Paragraph 15(iii), in accordance with this ordinary meaning; rather, Pakistan maintains, India has given a misguided interpretation to the term "necessary." Pakistan notes that the Indian Commissioner's letter dated 25 May 2007 defines "necessity" in terms of maximizing the utility of the natural head difference for hydro-electric power.[200] From this, Pakistan concludes that India (wrongly) seeks to define "necessary" as "desirable." According to Pakistan, India's proposed low-threshold meaning would make any hydro-electric project possible under the Treaty by reference to its engineering or economic feasibility.[201] In Pakistan's view, by interpreting "necessary" as meaning only what is necessary for the generation of hydro-electric power, India arrives at too narrow a restriction that is without basis in the Treaty or elsewhere.[202] Rather than focusing on India's energy needs, Pakistan submits that the scope of "necessity" must be reasoned and based on evidence, which leads to the conclusion that diversion is to be used only in case of emergency.[203]

221. Pakistan turns to a variety of sources to elaborate the scope of necessity. It first refers to the meaning of "necessary" in the context of treaties of "Friendship, Commerce, and Navigation." The necessity-based exceptions of several of these treaties were discussed in the *Nicaragua*[204] and *Oil Platforms*[205] cases by the International Court of Justice, where that Court emphasized that conduct alleged to fall within such a provision must be necessary—in the sense of "essential"—to the purpose of the provision.[206] Looking also to the interpretation of necessity in arbitrations under bilateral investment treaties and in the context of the World Trade

---

[199] Pakistan's Memorial, para. 5.39, quoting the Shorter Oxford Dictionary.

[200] Pakistan's Memorial, para. 5.36, referring to the Indian Commissioner's letter to the Pakistani Commissioner, 25 May 2007, (Annex PK-174), at pp. 2-3.

[201] Pakistan's Memorial, para. 5.37.

[202] Pakistan's Reply, para. 2.65.

[203] Hearing Tr., (Day 4), 23 August 2012, at 27:23 to 28:20.

[204] *Case Concerning the Military and Paramilitary Activities in and Against Nicaragua (Nicaragua v. United States of America)*, Merits, Judgment, I.C.J. Reports 1986, p. 14, pp. 141-142.

[205] *Oil Platforms (Islamic Republic of Iran v. United States of America)*, Judgment, I.C.J. Reports 2003, p. 161, p. 183.

[206] Pakistan's Memorial, para. 5.40.

Organisation, Pakistan submits that the term carries a "continuum" of meanings.[207] Within such a continuum, however, the diversion could only be necessary in the very broadest sense, insofar as India (like any other State) needs electricity.[208] In Pakistan's view, however, the Treaty contemplates far more urgent necessity.[209]

222. Pakistan further posits that an element of proportionality is inherent in the term "necessary," as developed in international law jurisprudence.[210] The effect of the KHEP on Pakistan's rights under international law, in particular international environmental law, is relevant, in Pakistan's view, to whether the KHEP is proportionate, and therefore necessary.[211] Pakistan notes "the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control," as stated by the Tribunal in the *Iron Rhine* arbitration and by the International Court of Justice in the *Gabčíkovo-Nagymaros* judgment.[212] According to Pakistan, that principle is relevant in the present case and requires "a strict approach to the question of what is necessary and/or proportionate," insofar as any adverse impact on the environment resulting from India's acts would be contrary to customary international law.[213]

223. To make any proportionality analysis possible, Pakistan submits that India should have taken a number of steps. First, Pakistan contends that to establish what is "proportionate and/or necessary," India would have had to conduct an environmental impact assessment (or work with Pakistan to carry out one) to evaluate downstream effects.[214] In Pakistan's view, India has not made the compulsory assessment because the EIA that took place does not address the area

---

[207] Pakistan's Memorial, para. 5.41.

[208] Pakistan's Memorial, para. 5.42

[209] Pakistan's Memorial, para. 5.42. Pakistan posits the example of a drought in the basin of one tributary, giving rise to a need for inter-tributary transfer.

[210] Pakistan's Memorial, para. 5.43. Hearing Tr., (Day 4), 23 August 2012, at 114:8-11; 117:7-9.

[211] Pakistan's Memorial, para. 5.44; Hearing Tr., (Day 4), 23 August 2012, at 115: 14-15.

[212] Pakistan's Memorial, para. 5.44; Pakistan asserts that the principle articulated by the International Court of Justice in the *Pulp Mills* judgment that States must exercise due diligence with respect to activities bearing an impact on the environment of other States is also relevant to the interpretation of "necessary." Pakistan's Memorial, para. 5.44, referencing *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, I.C.J. Reports 2010, p. 14.

[213] Pakistan's Memorial, para. 5.45.

[214] Pakistan's Memorial, paras. 5.44-5.49.

below the dam site.[215] Second, Pakistan argues that India should have applied a precautionary approach to its activities, in line with the Rio Declaration on Environment and Development of 1992, particularly in light of the pristine environment below the dam site.[216]

224. Finally, Pakistan submits that "necessary" cannot be understood to be self-judging or subjective. Where other provisions of the Treaty were intended to be self-judging this was expressly indicated; with no such qualification in Annexure D, "necessary" must be understood as an objective test.[217]

India's arguments

225. Based on the Treaty Preamble's attention to "complete and satisfactory utilisation of the waters" and the negotiating record of the Treaty, India argues that "necessary" was intended to refer to that which was "optimal for power generation."[218] The "most complete and satisfactory utilisation" of the waters, India argues, cannot be attained without taking advantage of the difference in elevation between the Kishenganga/Neelum and the Bonar Nallah.[219] Moreover, India notes, the term "necessary" was introduced only late in the negotiations, at the time when Paragraph 15(iii) was modified from a prohibitory to an enabling provision; before that change, necessity was not an element in determining whether diversion was permissible. This was, indeed, a change proposed by India, and India submits that it did not intend for the term to be used in the strict sense of "cannot be done without."[220] On the contrary, India submits that it had in mind during the negotiation of Paragraph 15(iii) the possibility of a transfer from the Kishenganga/Neelum to Wular Lake.[221]

---

[215] Pakistan's Reply, para. 4.41. Pakistan refers to its expert assessment of India's EIA which "highlights a long series of shortcomings" in the EIA, but in particular, Pakistan notes that the most important area was not part of the Assessment at all. Pakistan's Reply, para. 4.42.

[216] Pakistan's Memorial, para. 5.48.

[217] Pakistan's Memorial, para. 5.39. Hearing Tr., (Day 4), 23 August 2012, at 31:7-16.

[218] India's Counter-Memorial, paras. 4.91-4.108, 4.116. India considers Pakistan's recourse to other treaties and case law to interpret "necessary" to be inapposite and is of the view that the meaning of the term can be ascertained within the terms of the Treaty and its negotiating record. In India's view, the other cases and treaties mentioned by Pakistan provide no guidance to the present arbitration as they involved neither the Parties nor the subject-matter of the case at hand. *See* India's Counter-Memorial, para. 4.86 and accompanying footnotes.

[219] India's Counter-Memorial, para. 4.91.

[220] India's Counter-Memorial, paras. 4.100, 4.102.

[221] India's Counter-Memorial, para. 4.103.

226. India refers to the Court's 23 September 2011 Order on Interim Measures, noting that therein the Court defined "necessary" as meaning that an action is "required, needed, or essential for a particular purpose"[222] and that this is consistent with India's textual reading that diversion is required for "much needed" power generation.[223] In India's view, Pakistan has failed to consider the area's topography, which makes it necessary to have the water delivered into a second tributary of the Jhelum; production of significant hydro-electric power would not be feasible otherwise.[224] Further, India argues that "necessary" should be seen together with the fact that India's use of the waters "shall be unrestricted"; as India's use is unrestricted, it follows that it is for India to decide whether delivery into another tributary is necessary.[225]

227. India rejects Pakistan's importation of environmental harm principles into the meaning of "necessary" as, in its view, "necessary" concerns the generation of hydro-electric power—not the protection of the environment.[226] Pakistan is wrong, according to India, to say that any harm caused to it by the KHEP is a violation of the Treaty. At the outset, India contends that it conducted an appropriate EIA with respect to all areas for which it was able to obtain information.[227] Next, India submits that, contrary to Pakistan's assertion, no obligation is set forth in the *Pulp Mills* judgment or elsewhere that requires it to seek the assistance of another State to arrange a joint EIA.[228] Moreover, even if the contrary were true, India could only decide what is "necessary" with full details from Pakistan—which Pakistan refused to provide.[229] Finally, India disputes Pakistan's position that a precautionary approach is mandated by the applicable customary law. According to India, "some major countries take the strongly held view that precaution is not customary international law."[230] Moreover, India

[222] Order on Interim Measures, para. 139.

[223] India's Rejoinder, paras. 1.46, 2.80.

[224] India's Rejoinder, para. 2.84.

[225] India's Rejoinder, para. 2.81.

[226] India's Counter-Memorial, para. 4.116.

[227] India's Counter-Memorial, para. 6.47.

[228] India's Counter-Memorial, para. 6.48. Moreover, in India's view, the *dicta* from the *Pulp Mills* case on which Pakistan relies could not apply to the present dispute because the region affected here is part of India's territory under India's Constitution. India's Counter-Memorial, para. 6.49.

[229] India's Rejoinder, para. 2.104.

[230] India's Counter-Memorial, para. 6.102.

argues that the concept of precaution could not be applied in a principled manner here due to its many possible meanings.[231]

(e) Interpretation of the phrase "then existing Agricultural Use or hydro-electric use"

228. The Parties dispute the nature of the requirement that delivery into another tributary not cause adverse impact on the "then existing Agricultural Use or hydro-electric use by Pakistan." In particular, the Parties disagree on the meaning of the terms "then existing."

Pakistan's arguments

229. With respect to the timing indicated by the word "then," Pakistan submits that a "then existing use" is—in the ordinary meaning of the words—the use existing at the time of the water's release into the other tributary. Pakistan maintains that this reading of the phrase is consistent with the nature of an operational provision; that is, the question of adverse impact is to be tested "at the time of operation."[232] Pakistan contends that this point in time is further evidenced by the use of the present tense in the qualifier "where a Plant is located," which indicates that the Plant is already built and in operation.[233]

230. Pakistan notes that the phrase "then existing" appears in Annexures C, D and E, but submits that there is no common meaning across the different provisions; rather, each contemplates the "moment of action relevant to the particular provision."[234] In Annexure C, which governs agricultural use, "then existing use" refers to the time at which India makes a new agricultural use.[235] The phrase also appears in Annexure E, regarding Storage Works in the following terms:

> Notwithstanding the provisions of Paragraph 7 [which concerns the aggregate storage capacity of all Reservoirs], any Storage Work to be constructed on a Tributary of The Jhelum on which Pakistan has any Agricultural Use or hydro-electric use shall be so

[231] India's Counter-Memorial, para. 6.102.

[232] Pakistan's Memorial, para. 5.52.

[233] Pakistan's Reply, paras. 2.74, 2.75.

[234] Hearing Tr., (Day 3), 22 August 2012, at 186 *et seq*.

[235] Paragraph 9 of Annexure C provides in full: "On those Tributaries of The Jhelum on which there is any Agricultural Use or hydro-electric use by Pakistan, any new Agricultural Use by India shall be so made as not to affect adversely the then existing Agriculture Use or hydro-electric use by Pakistan on those Tributaries."

> designed and operated as not to adversely affect the then existing Agricultural Use or hydro-electric use on that Tributary.[236]

231. The use of the phrase in Annexure E, Pakistan emphasizes, is different from that in Annexure D. Annexure E requires a cut-off date because it addresses a Storage Work "to be constructed" and expressly applies to the design of the Storage Work. In contrast, Paragraph 15(iii) of Annexure D addresses a Run-of-River Plant that "is located" and operating on a given tributary and refers to the time at which water is released from the Plant. Accordingly, Pakistan rejects India's contention of any "common thread" across the meaning of "then existing use" in the different Annexures.[237]

India's arguments

232. India interprets the phrase "then existing use" to mean that any new development by India should not disturb downstream activity by Pakistan as of the date when India communicates to Pakistan its "firm intention" to proceed with a project.[238] To interpret the Treaty as Pakistan suggests, as referring to the time the water is released or "whenever Pakistan might undertake [its use]," would have a chilling effect on any new construction and supplant construction already underway, leading to substantial economic waste.[239]

233. India maintains that Pakistan's position regarding the operational focus of the provision in interpreting "then existing use" is untenable. In Pakistan's operational perspective, "existing use" would have to be read as "intended use"—contrary to the plain meaning of the phrase.[240] India further contends that Pakistan's interpretation would deprive India of its legitimate expectation to be entitled to the most complete and satisfactory utilization of the waters as guaranteed by the Treaty.[241]

234. According to India, the *travaux préparatoires* indicate that a cut-off date was intended by the Treaty drafters.[242] India relies on a letter from the President of the World Bank to the Prime

[236] Treaty, Annexure E, Para. 10.

[237] Pakistan's Reply, paras. 2.77-2.83.

[238] India's Counter-Memorial, para. 4.139.

[239] India's Counter-Memorial, paras. 4.127, 4.128-4.134.

[240] India's Rejoinder, paras. 2.51, 2.53, 2.55, 2.105.

[241] India's Rejoinder, para. 1.18.

[242] India's Counter-Memorial, para. 4.139.

Ministers of India and Pakistan dated 8 November 1951 identifying as an "essential principle" that the "Indus basin water resources are sufficient to continue all existing uses and to meet the further needs of both countries."[243] In India's view, this demonstrates that "existing" refers to "historic" uses and is distinct from those which might be developed to meet future—or "further"—needs. In its 1954 Proposal, the Bank outlined the Parties' views on the approach to "existing uses" and, according to India, "rejected Pakistan's concept of 'protecting existing uses from existing sources' because this would render a 'fair and adequate comprehensive plan' impossible of achievement and unduly limit the flexibility need[ed] for the efficient use of the waters."[244]

235. To identify the appropriate cut-off date, India notes that the provisions of Annexure D require India to provide Pakistan with complete information about its intended design six months before beginning construction. In synchrony with that point in time, India maintains that "uses by Pakistan have to be frozen at the stage when the design is being finalized."[245] In the case of the KHEP, India submits that the cut-off date was—at the latest—June 1994 when the finalized KHEP design (as a Storage Work) was provided to Pakistan.[246]

236. While India did not announce to Pakistan that the KHEP would be a Run-of-River Plant until 2005–2006, India maintains that the change should not affect the cut-off date for ascertaining downstream uses.[247] In any case, the revised Run-of-River design is largely the same as the earlier design: "neither the axis of the dam, the location and layout of the project, nor its installed capacity or diversion works have changed . . . [nor has the] delivery of water to Bonar-Madmati Nallah."[248] Moreover, India considers the revisions advantageous to Pakistan: the height of the dam and the pondage capacity upstream of the dam were reduced.[249]

---

[243] India's Counter-Memorial, para. 4.128, referring to Letter from Eugene R. Black, President of the World Bank to India's Prime Minister Jawaharlal Nehru, 8 November 1951, (Annex IN-33).

[244] India's Counter-Memorial, para. 4.133.

[245] India's Counter-Memorial, para. 4.123.

[246] India's Counter-Memorial, para. 4.124.

[247] India also argues, in the alternative, that even if the cut-off date were determined by reference to the change of the KHEP to a Run-of-River Plant, the NJHEP would still not have been a "then existing use" as construction on the NJHEP was initiated only in 2008. India's Counter-Memorial, para. 4.124.

[248] India's Counter-Memorial, para. 3.50.

[249] India's Counter-Memorial, para. 3.16.

237. In support of its interpretation, India emphasizes the context given to "then existing" by the word "located" in the opening phrase of Paragraph 15(iii), which begins with "where a Plant is located on a Tributary." Appendix II to Annexure D, India notes, requires India to provide to Pakistan—in advance of construction—information on the Plant's planned design, including a section of information relating to the "Location of Plant." In India's view, "[h]aving identified the location of the planned Plant and having provided that information to Pakistan . . . , India is deemed to have 'located' the Plant."[250] A Plant does not need to be in operation to be "located," and the time at which a Plant is located through the exchange of information with Pakistan provides the time by reference to which "then existing" uses are to be assessed.

238. As further support, India compares the meaning of "then existing use" in Paragraph 15 to the context of the phrase in other provisions of the Treaty. India argues that it is clear from the placement of the phrase in Annexures C and E that a common meaning was intended: any new development by India should avoid disturbing the activities by Pakistan downstream which are already using the water of the river.[251]

(f) Whether Pakistan has established an "existing . . . use"

239. Turning to the concept of "existing use," the Parties agree that where Pakistan has shown an agricultural or hydro-electric use to exist at the relevant time, India's Run-of-River Plant cannot have an adverse impact on that use. The Parties disagree, however, as to what constitutes an "existing . . . use" and as to whether Pakistan has demonstrated existing uses on the Kishenganga/Neelum that must be taken into account.

Pakistan's arguments

240. Pakistan argues that India's plans to build a hydro-electric project in accordance with the Treaty must take account of "specific plans for uses" of the waters at specific locations to which Pakistan is "firmly committed."[252] Pakistan notes that India was aware that it was engaged in

[250] India's Rejoinder, para. 2.57.

[251] India's Counter-Memorial, para. 4.136.

[252] Pakistan's Reply, para. 5.15.

the planning of the NJHEP from December 1988.[253] Indeed, India had requested details about the NJHEP in 1989, "specifically in the context of the determination of 'existing . . . uses.'" Pakistan then provided such details in March 1990.[254]

241. With respect to agricultural uses, Pakistan argues that "agriculture downstream" of the KHEP depends on the flow from India and that the KHEP would "disrupt current projects aimed at the improvement of irrigated agriculture in Pakistan."[255] Pakistan points to the aerial photography of the Neelum Valley included in its EIA as evidence of extensive agricultural activity. Although much of this activity is dependent upon tributaries, Pakistan submits that irrigation is also drawn from the Kishenganga/Neelum itself, and that "plans have been developed to expand the area under irrigation by pumping water" from the main river.[256]

India's arguments

242. India submits that Pakistan has not shown the existence of any agricultural use that would be relevant for Paragraph 15(iii).[257] India maintains that it requested information from Pakistan regarding any "then existing" agricultural or hydro-electric uses both when it contemplated a Storage Work (as early as 1994[258]) and again when the KHEP was changed to a Run-of-River Plant.[259] Pakistan's only response was to provide, in 1990, the figure of 133,000 hectares of irrigated land, but without specifying the location of irrigation works or the areas irrigated by them. Nor were such works observed during a tour of the area.[260] In fact, India argues that Pakistan's own evidence and its submission in this arbitration demonstrates that the "very

[253] Pakistan's Memorial, para. 2.13; Pakistan's Memorial, para. 2.12, citing the Pakistani Commissioner's letter to the Indian Commissioner, 22 April 1989, informing him of the construction of the NJHEP: "the waters of the Neelum (Kishenganga) River [stand] committed to this project."

[254] Pakistan's Reply, para. 3.36.

[255] Pakistan's Memorial, para. 1.21.

[256] Pakistan's Memorial, para. 3.51; Pakistan's Memorial, Hagler Bailly Pakistan, Water Matters, Southern Waters & Beuster, Clarke and Associates, "Kishenganga/Neelum River Water Diversion: Environmental Assessment" at exhibits 1.4, 1.5, 6.10, 6.11 (May 2011).

[257] Hearing Tr., (Day 5), 24 August 2012, at 174 to 180.

[258] India's Rejoinder, para. 1.55-1.56; India's Rejoinder, para. 2.129 *et seq*.

[259] India's Counter-Memorial, para. 3.54.

[260] India's Counter-Memorial, para. 4.142, India's Rejoinder, paras. 2.115-2.117.

limited" agriculture in the Neelum Valley is "observed to be based on rainfall" and on channels fed by side streams, rather than on the Kishenganga/Neelum itself.[261]

243. India recognizes the NJHEP as a potential hydro-electric use but argues that Pakistan only announced its commitment to build the NJHEP in 2008 (14 years after the finalization of the KHEP under its original design and two years after the revised design had been submitted to Pakistan).[262] India traces the timeline of the development of the plan for the KHEP, beginning in 1960 with the CWPC Letter. At that time, India notes, nothing in the record indicates a possible project at Nauseri.[263] By 1971, India had produced a document entitled "Kishenganga Hydroelectric Project" which, in its view, demonstrates that it had the project in mind.[264] During this period, there was no evidence of a Pakistani project on the river. Thereafter, and through the 1980s, India continued collecting data and carrying out exploratory work.[265] In comparison, it was not until 1989, when Pakistan wrote to India regarding the NJHEP, that the record indicates anything with respect to a Pakistani project.[266]

244. According to India, following India's communication to Pakistan of technical information concerning the KHEP in 1994, and as late as 2005, Pakistan only assured India that it would provide "relevant information" concerning the impact of the KHEP on the NJHEP.[267] Thus, India concludes that the NJHEP fails Pakistan's own definition of an "existing use" as Pakistan made no "firm commitment" or "active engagement" in the project until 2007-2008.[268] Even during an inspection in 2008, India submits, there was no evidence that preparatory construction work was under way.[269]

---

[261] India's Counter-Memorial, para. 4.143.

[262] India's Counter-Memorial, para. 4.148.

[263] Hearing Tr., (Day 9), 30 August 2012, at 51:2-11.

[264] Hearing Tr., (Day 9), 30 August 2012, at 51:12-21, referencing Comments of the CWPC, 13 May 1971, (Annex IN-55) and Communication of the Government of Jammu and Kashmir to the Indian Ministry of Irrigation and Power, 3 April 1973, (Annex IN-56).

[265] Hearing Tr., (Day 9), 30 August 2012, at 51:25 to 53:13.

[266] Hearing Tr., (Day 5), 24 August 2012, at 148:15 *et seq*.

[267] Hearing Tr., (Day 5), 24 August 2012, at 150:3-5.

[268] India's Rejoinder, para. 1.59.

[269] India's Counter-Memorial, para. 4.147, noting that during two tours of inspection to the NJHEP site in 1991 and 1996, no construction was observed.

(g) Whether the diversion of the Kishenganga/Neelum River would cause an adverse effect

245. The Parties strongly disagree about the content and weight of evidence suggesting any potential adverse effect to Pakistani uses as a result of the KHEP. While they agree that the effect must be more than a minimal ("*de minimis*") effect, they again differ with respect to the meaning of "*de minimis*" in this context.

Pakistan's arguments

246. Pakistan considers it "self-evident that the planned diversion . . . would materially reduce the flows downstream" which would lead to a reduction in planned electricity generation at the NJHEP, as well as at other sites that have been considered for future hydro-electric development. Potential sites of future hydro-electric projects include Suti/Taobat, Followai, Kel and Dudhnial.[270] Overall, Pakistan predicts an annual loss in electricity generation of 13 percent at the NJHEP, equivalent to a loss of USD 141.3 million,[271] and a further annual loss of USD 74.1 million at its other planned sites.[272]

247. Insofar as the hydrological flow data presented by the Parties differs, Pakistan maintains that its daily data series of the flow at the NJHEP site is more accurate and gives a more representative understanding of the impact of the KHEP than does India's monthly series.[273] Pakistan rejects the suggestion that its statistical processing of observed data is somehow inappropriate. In Pakistan's view, raw data must be subjected to such analysis to produce useable results.[274]

---

[270] Pakistan's Memorial, paras. 5.56, 5.58.

[271] Pakistan makes its calculation on the basis of an oil price of USD 115 per barrel. Pakistan's Memorial, para. 3.33.

[272] Pakistan's Memorial, paras. 5.57-5.58. Pakistan relies on the data presented in the National Engineering Services Pakistan Limited Report (NESPAK Report). This Report was then submitted for peer review to Prof. Jens Christian Refsgaard of the Geological Survey of Denmark and Greenland who provided a Review Report. In his Review Report, Prof. Refsgaard concludes:

> A diversion of 58.4 m^3/s at Kishenganga will reduce the annual flow at the NJHEP site at Nauseri in Pakistan by 14%, while the winter and summer season flows will be reduced by 33% and 11%, respectively. The corresponding reduction figures at upstream sites closer to the [KHEP] will be much higher, e.g. 33% (annual), 74% (winter) and 26% (summer) at Suti/Taobat.

[273] Pakistan's Reply, paras. 4.16, 4.25-4.27.

[274] Pakistan's Reply, para. 4.12. For example, Pakistan argues that the seasonal regression equations in the NESPAK Report that India argued were unreliable, having been based on an assessment of the annual hydrological relationship, are in fact more reliable than India's figures, which are based on only six or seven data points. Pakistan's Reply, para. 4.9. Likewise, Pakistan objects to India's argument that the data from the

Pakistan also notes that in attempting to minimize the effect on power generation at the NJHEP, India misconstrues the planned mode of operation of the Plant, supposing that Pakistan seeks to generate only "peaking power" during a portion of the day, rather than full-time operation.[275] In addition, Pakistan observes that even India's own data show significant reduction in flows at the NJHEP due to the operation of the KHEP.[276]

248. Pakistan further rejects India's argument that the impact at the NJHEP would be mitigated by an overall increase in power generation in the region. Pakistan maintains that arguments concerning alleged beneficial impacts on other hydro-electric projects, such as the planned Kohala hydro-electric project, are irrelevant. Those projects are located on other tributaries and do not fall within the scope of this dispute.[277] Furthermore, India assumes wrongly that storage at the proposed Pakistani Dudhnial hydro-electric project would offset the impact of reduced flow at the NJHEP. This is incorrect, Pakistan argues, first because it is unlikely that the Dudhnial project will be constructed as a storage scheme, as India assumes,[278] and second because India's calculation in this respect does not account for the fact that the Dudhnial project would itself suffer reduced water availability and an adverse impact from the KHEP.[279]

249. Additionally, Pakistan submits that the diversion will affect its agricultural use of the waters by "depriv[ing] the riverine communities of [the water that will be diverted]."[280] In particular, according to Pakistan, there will be no flow immediately below the dam site for six months of the year.[281] The impact on agricultural activities in the region will "depend on the precise location of given crop areas . . . where irrigation is dependent on water taken from the Kishenganga/Neelum River," but an adverse impact would be expected to current and planned irrigation projects.[282]

Muzaffarabad gauge site are unreliable, contending that its streamflow measurement methodology is in accordance with good hydrological practice. Pakistan's Reply, para. 4.11.

[275] Pakistan's Reply, para. 4.24.

[276] Pakistan's Reply, para. 4.15.

[277] Pakistan's Reply, para. 4.29.

[278] Pakistan's Reply, para. 4.31.

[279] Pakistan's Reply, para. 4.32.

[280] Pakistan's Memorial, para. 3.52.

[281] Pakistan's Memorial, para. 3.26.

[282] Pakistan's Memorial, para. 5.55.

250. In Pakistan's view, the evaluation of adverse effect under the Treaty "does not invite a general balancing act that seeks to bring into account alleged positive impacts to Agricultural Use or hydroelectric use on other Tributaries," as India implies through its analysis of "compensation" effects at other hydro-electric plants.[283] Pakistan urges the Court to bear in mind the scale of harm that would result from what may appear as an insignificant overall reduction in flow and argues that the data bear out that the overall adverse effect is significant.[284] As Pakistan stated at the hearing on the merits, "there is no particular size below which farmers or hydro-electric plants can simply be ignored by India."[285] In Pakistan's view, if there is an interference with the flow that is not insignificant and incidental, and that does have an adverse effect upon downstream uses, India is no longer permitted to divert the river pursuant to Paragraph 15(iii).[286]

India's arguments

251. India maintains that the KHEP will not have any significant adverse effect on the NJHEP.[287] To the contrary, India contends that the KHEP would have a net positive effect on the generation of hydro-electric power in the region: it will increase the flow of water going into Pakistan's planned Kohala hydro-electric project, thereby increasing its capacity to generate electricity during the winter months and substantially offsetting the loss of capacity at the KHEP.[288] Such offset effects, along with a gain in energy at the NJHEP as a result of Pakistan's planned Dudhnial Storage Work, will increase total power output.[289] Accounting for these two projects in calculating the effect of the KHEP on Pakistan, as well as additional projects planned further downstream, it is India's view that "the impact of the KHEP will be largely moderated."[290] Even without such offsets, India submits that the relevant flow data from the area do not

[283] Pakistan's Reply, paras. 2.86, 4.29.

[284] Pakistan's Reply, para. 2.85.

[285] Hearing Tr., (Day 4), 23 August 2012, at 45:7-9.

[286] Hearing Tr., (Day 4), 23 August 2012, at 46:18-23.

[287] India's Counter-Memorial, para. 4.150.

[288] India's Counter-Memorial, paras. 5.31, 5.33.

[289] India's Counter-Memorial, para. 5.38. India notes that Pakistan informed India in 1990 that Dudhnial was intended to be developed as a storage project. India's Rejoinder, para. 3.57.

[290] India's Counter-Memorial, para. 5.39. "The entire system as a whole will benefit from the KHEP 4,703 MU [gigawatt hours]," whereas without the KHEP there will be a net loss to both Parties. India's Counter-Memorial, para. 5.41; India's Rejoinder, paras. 3.64-3.65.

demonstrate any material adversity to Pakistan's hydro-electric use; rather, the water released at the KHEP would continue to suffice for the NJHEP to operate as a peaking plant, as intended by Pakistan.[291]

252. India disputes Pakistan's presentation of its flow data, criticizing its calculations for their inconsistencies and oversight,[292] the limits on the span of the data on which it relies,[293] and its transparency with respect to both data and calculation methodology.[294] In India's view, Pakistan's calculations depicting losses at the NJHEP during the high flow season, in particular, are based on an approach chosen to exaggerate its potential losses.[295] India contends that, "given the limitations of the various data sets, there can be no definite conclusion on the impact of [the] KHEP on power generation in [the] NJHEP."[296] Even if the Court were to conclude that there is an adverse effect on hydro-electric power at the NJHEP, India argues, a minor adverse

[291] India's Counter-Memorial, paras. 5.12-5.13, 5.24.

[292] India finds the NESPAK Report's regression analysis to show concurrent flow between Gurez and Muzaffarabad to be inappropriate as it does not accommodate seasonal variability. "Pakistan's argument that one regression equation based on monthly flows be used does not take account of the natural processes in the development of hydrologic time series." India, by contrast, calculates each season's flows separately. India's Rejoinder, para. 3.16.

[293] India's Rejoinder, para. 3.22. India notes that Pakistan used an 18-month data set to develop a long-term series for flow at Nauseri and comments that a period of 18 months is too short for any reliable regression analysis. In addition, it observes that one of Pakistan's consultants discarded Nauseri data from 1991 to 1996 because these data were "said to be underestimated by about 8%," but that Pakistan did not take this into account and retained the data. India's Rejoinder, para. 3.23. India also rejects Pakistan's flow data from Muzaffarabad which it claims was measured only intermittently (two or three times per month). India's Rejoinder, para. 3.24.

[294] India argues, first, that Pakistan withheld gauge and discharge information observed at Nauseri and Dudhnial which prevented India from verifying it. India's Rejoinder, para. 3.21. Next, India rejects Pakistan's "modification" of the data from Muzaffarabad, that is, Pakistan's claim that earlier collected data was "raw" and needed to be further processed before being provided to India. India's Rejoinder, paras. 3.28-3.29. To India, the presence of three different sets of flow data from a single gauging station has not been sufficiently explained. India's Rejoinder, para. 3.26.

[295] India's Rejoinder, para. 3.45. In fact, India contends, any daily flow variations in the high flow season can be accommodated by Pakistan without a reduction in the power-generating capacity of the NJHEP; Pakistan has not taken into account that the NJHEP has live storage that can even out variations across a ten-day period. India's Rejoinder, para. 3.47.

[296] India's Rejoinder, para. 3.33. Further, in response to Pakistan's criticism about India's use of a ten-day time-step rather than daily flow, India argues that ten-day average flow calculations are an accepted norm and consistent with the Treaty, whereas Pakistan's daily flow analysis is not reliable as it gives only a "single snapshot value at a particular time in the day." India's Rejoinder, paras. 3.41-3.43.

effect would not under the Treaty prevent delivery into the Bonar Nallah.[297] The Treaty requires an adverse effect "to a significant extent."[298]

253. Similarly, in India's view, Pakistan has not explained how the KHEP would have an impact on Pakistan's downstream agricultural use.[299] India states: "If Pakistan's concerns were that, in the reach of the Kishenganga (Neelum) Tributary below the KHEP, the timing of flow for irrigation essential to ensure food security would be significantly affected, its Memorial again does not throw any light in support of this statement. In fact, the irrigation water requirements for agricultural uses in the Neelum [V]alley are nominal and will not be affected by the reduction in volume of flow in this reach due to the KHEP."[300] Nor, India notes, did Pakistan provide any evidence to support its assertion that delivery of water to the Wular Lake would delay downstream flows and affect the early growing season.[301]

3. The Parties' arguments on Article IV(6) of the Treaty

254. In addition to its arguments regarding Article III and Annexure D, Pakistan claims that the construction of the KHEP breaches Article IV(6) of the Treaty, which provides:

> Each Party will use its best endeavours to maintain the natural channels of the Rivers, as on the Effective Date, in such condition as will avoid, as far as practicable, any obstruction to the flow in these channels likely to cause material damage to the other Party.

255. The Parties disagree as to the meaning of their obligation to "maintain the natural channels" and the scope of the obligation to "use their best endeavours" in doing so.

Pakistan's arguments

256. Pakistan accepts that Article IV(6) imposes a "best endeavours" obligation but submits that India has failed to live up to this standard.[302] As an initial matter, Pakistan claims that India is obliged, under Article IV(6), to avoid (as far as practicable) creating obstructions to the flow of

[297] India's Counter-Memorial, paras. 4.150; 5.25-5.33.

[298] India's Counter-Memorial, para. 4.150.

[299] India's Counter-Memorial, para. 4.36. With respect to the Muzaffarabad data, India contests Pakistan's data on the basis of the limited number of days included in Pakistan's study. India's Counter-Memorial, paras. 5.7, 5.8.

[300] India's Counter-Memorial, para. 4.36.

[301] India's Rejoinder, para. 2.122, referencing Pakistan's Reply, para. 4.50.

[302] Pakistan's Memorial, para. 5.59.

the waters of the rivers that cause material damage to Pakistan. Because the KHEP will divert waters from their natural channels—"a *prima facie* breach of the requirement to maintain the natural channels"—and cause the deterioration of those channels,[303] it will, in Pakistan's view, obstruct the flow and result in material damage.[304]

257. In Pakistan's view, "material damage," as the term is used in Article IV(6), extends beyond the direct obstruction and degradation of the natural channel of the Kishenganga/Neelum, and encompasses harm to the ecology of the riverine environment in that channel.[305] As described by Pakistan, the KHEP will contribute to substantial material damage downstream.[306] Pakistan describes "a large loss of natural habitat, biota and ecosystem functions" immediately downstream of the Line of Control, as well as a decline in abundance of fish species and important changes to socio-economic conditions downstream.[307] Further, Pakistan contends that protecting the flow of the waters in their natural channels is "an essential element in ensuring food security."[308] The KHEP will interfere with Pakistan's capacity to manage the irrigation of its crops.

258. Relying on India's own data on the anticipated flow below the KHEP, Pakistan is unconvinced that any fixed minimum environmental flow would avoid significant harm to the environment in the affected areas.[309] At the least, Pakistan argues, for India to employ its best endeavours to avoid these harms would require it to assess the damage its diversion is likely to cause. Thus, in Pakistan's view, India failed to use its best endeavours when it neither carried out an adequate

---

[303] Pakistan's Memorial, para. 5.63. Pakistan states that immediately downstream of the Line of Control, the "hydrological dry season would become more than two months longer and start about six weeks earlier" with the operation of the KHEP. Further, the "flood season would start about a week later and would finish a month earlier, while its peak flows would be about 14% lower." Pakistan's Memorial, para. 3.45.

[304] Pakistan's Memorial, para. 5.63.

[305] Pakistan's Memorial, para. 3.52; Pakistan's Reply, para. 2.88.

[306] Pakistan's Memorial, paras. 3.45-3.50.

[307] Pakistan's Memorial, para. 5.46. Referring to an EIA carried out by a consortium of specialists, Pakistan describes how at Dudhnial four fish species are expected to show a decline in abundance of 30 to 40 percent. "[T]he reduction in fish population . . . would reduce the revenues of local businesses and people associated with sport fishing." Pakistan's Memorial, para. 3.49. Further, reductions in the availability of water will affect its use for drinking and reduce "the navigational/transportation uses . . . for around six months in an average year." Pakistan's Memorial, para. 3.50.

[308] Pakistan's Memorial, para. 1.7.

[309] Hearing Tr., (Day 10), 31 August 2012, at 34.

EIA,[310] nor shared with Pakistan information on the anticipated impact of its project, despite Pakistan's requests for such information.[311] Pakistan relies on the judgment of the International Court of Justice in the *Pulp Mills* case to support its position.[312] There, the Court stated: "it may now be considered a requirement under general international law to undertake an environmental impact assessment where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context, in particular, on a shared resource."[313] In Pakistan's view, this requirement applies to the KHEP, notwithstanding the unique status of the Line of Control; the *Pulp Mills* judgment refers to the obligation on States to ensure that activities "within their jurisdiction and control" respect the environment of other States or of areas "beyond their national control," a construction that applies equally to Indian activities having an effect on Pakistan-administered Jammu and Kashmir.[314]

India's arguments

259. According to India, the purpose of Article IV(6) is to maintain the "geometry of the channels" of the rivers.[315] The term "obstruction" cannot relate to projects permitted by other provisions of the Treaty; otherwise no development work would be possible.[316] India points to comments made by Pakistan's negotiator in 1959 indicating that Article IV(6) was intended to prevent India from placing "'temporary bunds,' or dikes, 'across the Eastern Rivers'"—and not to

[310] In response to India's contention that it carried out an EIA in 2002, Pakistan maintains that this EIA is insufficient to ensure that its Treaty rights are upheld since only 12 pages are concerned with the impacts of the KHEP and the analysis undertaken is inadequate. Pakistan also observes that India requested information from Pakistan for it to carry out an EIA in 2008, but this request came two years after India had already finalized its plans for the KHEP. Pakistan's Reply, paras. 5.22, 5.23.

[311] Pakistan's Memorial, para. 5.60.

[312] Pakistan's Memorial, paras. 5.61-5.62.

[313] Pakistan's Memorial, para. 5.61, citing *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, I.C.J. Reports 2010, p. 14, p. 83. Pakistan locates additional support for its assertion that customary international law includes a prohibition on transboundary harm in Principle 21 of the Stockholm Declaration of the United Nations Conference on the Human Environment which, according to Pakistan, sets out a requirement that States not cause transboundary harm. Stockholm Declaration of the United Nations Conference on the Human Environment, (16 June 1972), UN Doc. A/CONF. 48/14/Rev 1.

[314] Pakistan's Reply, para. 5.22. Pakistan also submits that India has admitted, in an environmental assessment and management plan upon which it relies, that the Line of Control is an international boundary, thereby rendering the decision in *Pulp Mills* directly relevant. *See* Pakistan's Reply, para. 5.21, referencing para. 6.55 of India's Counter-Memorial, and a report titled, *Comprehensive Management Action Plan for Wular Lake, Kashmir*.

[315] India's Counter-Memorial, paras. 4.155, 4.157.

[316] India's Counter-Memorial, paras. 4.152, 4.157.

prevent inter-tributary transfers.[317] Moreover, India submits that Article IV(6) does not "provide a strong obligation [on the Parties], if in fact it provides an obligation at all." The word "will," rather than "shall," in the phrase "Each Party will use its best endeavours . . ." is, for India, an indication of intent rather than of obligation.[318]

260. In India's view, its interpretation is confirmed by the surrounding paragraphs in Article IV (all of which relate to drainage), which confirm that Paragraph 6 was intended to ensure effective drainage and smooth downstream flow—and not to maintain any particular volume of flow.[319] India submits that its interpretation is supported by the *travaux préparatoires*, insofar as an early draft of Article IV(6) used the phrase "natural flow in the Rivers," only to have this replaced by "flow in these channels." According to India, this change represents the drafters' recognition that "it would have been impossible to maintain the 'natural flow in the Rivers' as on the Effective Date in view of the uses India was permitted."[320]

261. India dismisses criticism of the scope of its EIA, noting that Pakistan refused to provide the information that would have permitted an environmental assessment covering the entire region.[321] India further defends the soundness of its EIA, arguing that this assessment considered impacts at the dam site and conformed to international best practices at the time.[322] Moreover, India observes, the EIA carried out by Pakistan contains flaws of its own, including a failure to consider the environmental effects of the NJHEP (and four other dams that Pakistan proposes to build) as well as the lack of consideration of environmental impacts in the area between Nauseri and Muzaffarabad.[323]

---

[317] India's Rejoinder, para. 2.155.

[318] India's Rejoinder, para. 2.168.

[319] India's Counter-Memorial, paras. 4.155, 4.157. For example, India refers to Paragraphs 4, 5, and 8 addressing maintenance of drainages, deepening or widening of drainages, and use of the natural channels for the discharge of excess waters, respectively.

[320] India's Counter-Memorial, para. 4.161.

[321] India's Counter-Memorial, para. 6.86.

[322] India's Rejoinder, paras. 3.75-3.84. India contends that the contents of the EIA make clear that the dam site was accounted for in its entirety. With respect to best practices, India argues that its EIA covered all the most important aspects of an EIA: that it be in writing, be conducted sufficiently early to be taken account in decision-making, include an opportunity for public comment, and be comprehensive.

[323] India's Rejoinder, para. 3.103. India also rejects Pakistan's classifications of fish species and of impact zones, as well as the socio-economic impacts in the region, as arbitrary and subjective. India's Rejoinder, para. 3.118.

262. Finally, India rejects what it considers to be an attempt to import principles of international environmental law that are applicable neither to the interpretation of Article IV(6) nor to this dispute as a whole.[324] In India's view, environmental principles not found in the Treaty fall outside the jurisdiction of the Court.[325] Nevertheless, India emphasizes that it takes environmental considerations seriously. It notes, first, that the KHEP meets all requirements of Indian environmental law[326] and, second, that the evidence India collected in its EIA in 2000 establishes that the KHEP would not cause irreversible harm to the environment.[327] India also notes that the KHEP will not have a significant impact on any terrestrial species, nor lead to an increased risk of disease in the valley.[328] At the hearing on the merits, the Agent for India further guaranteed that an "environmental flow will continue throughout the year."[329] According to the Agent, there would be no dry period below the KHEP, in accordance with Indian laws. The Agent indicated that the exact amount of the flow was under consideration by the Indian Ministry of Environment and Forests, but that it would not be less than "the minimum observed flow of 3.94 [cumecs] at the site."[330]

B. THE PERMISSIBILITY OF RESERVOIR DEPLETION UNDER THE TREATY

263. As stated in Pakistan's Request for Arbitration and Memorial, the Second Dispute relates to the following question:

> Whether under the Treaty, India may deplete or bring the reservoir level of a run-of-river Plant below Dead Storage Level in any circumstances except in the case of an unforeseen emergency.[331]

264. Pakistan's concern with reservoir depletion arises out of the KHEP's design as a Run-of-River Plant, as described in the Indian Commissioner's letter of 19 June 2006, notifying Pakistan of the KHEP's re-configured design, and in the appendices to India's Counter-Memorial. As set forth therein, the KHEP includes a spillway with a design flood of 2,000 m^3/s and three gated

[324] India's Rejoinder, para. 2.151.

[325] India's Rejoinder, para. 2.159.

[326] India's Rejoinder, paras. 2.172-2.177.

[327] India's Rejoinder, paras. 1.69-1.70.

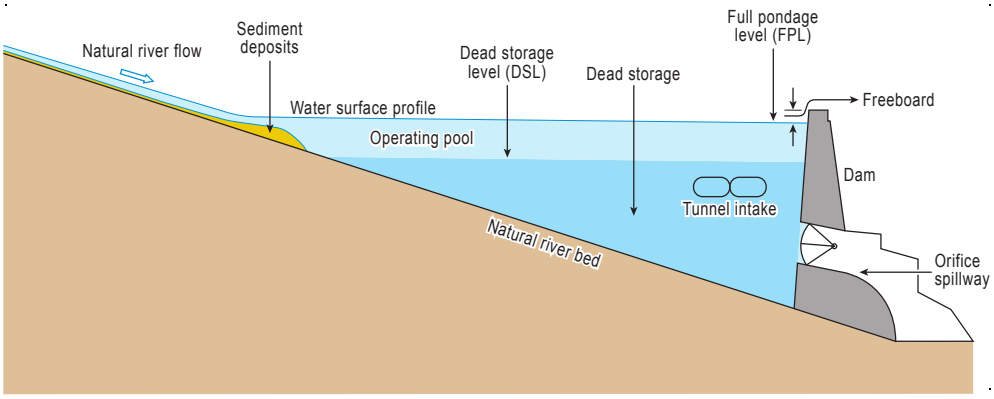
[328] Hearing Tr., (Day 6), 27 August 2012, at 33:2-20.

[329] Hearing Tr., (Day 9), 30 August 2012, at 114:13-15.

[330] Hearing Tr., (Day 9), 30 August 2012, at 115:4-15.

[331] Request for Arbitration, para. 4; Pakistan's Memorial, para. 1.12.

openings located at an elevation of 2,370 metres—that is, with the base of the gates 10 metres above the riverbed and 14.5 metres below the KHEP's Dead Storage Level.[332] India indicates that the spillway will perform the dual function of flood discharge and sediment removal and, in particular, signals its intention to use the spillway for drawdown flushing.[333] A dam with a low-level spillway can be represented schematically as follows:



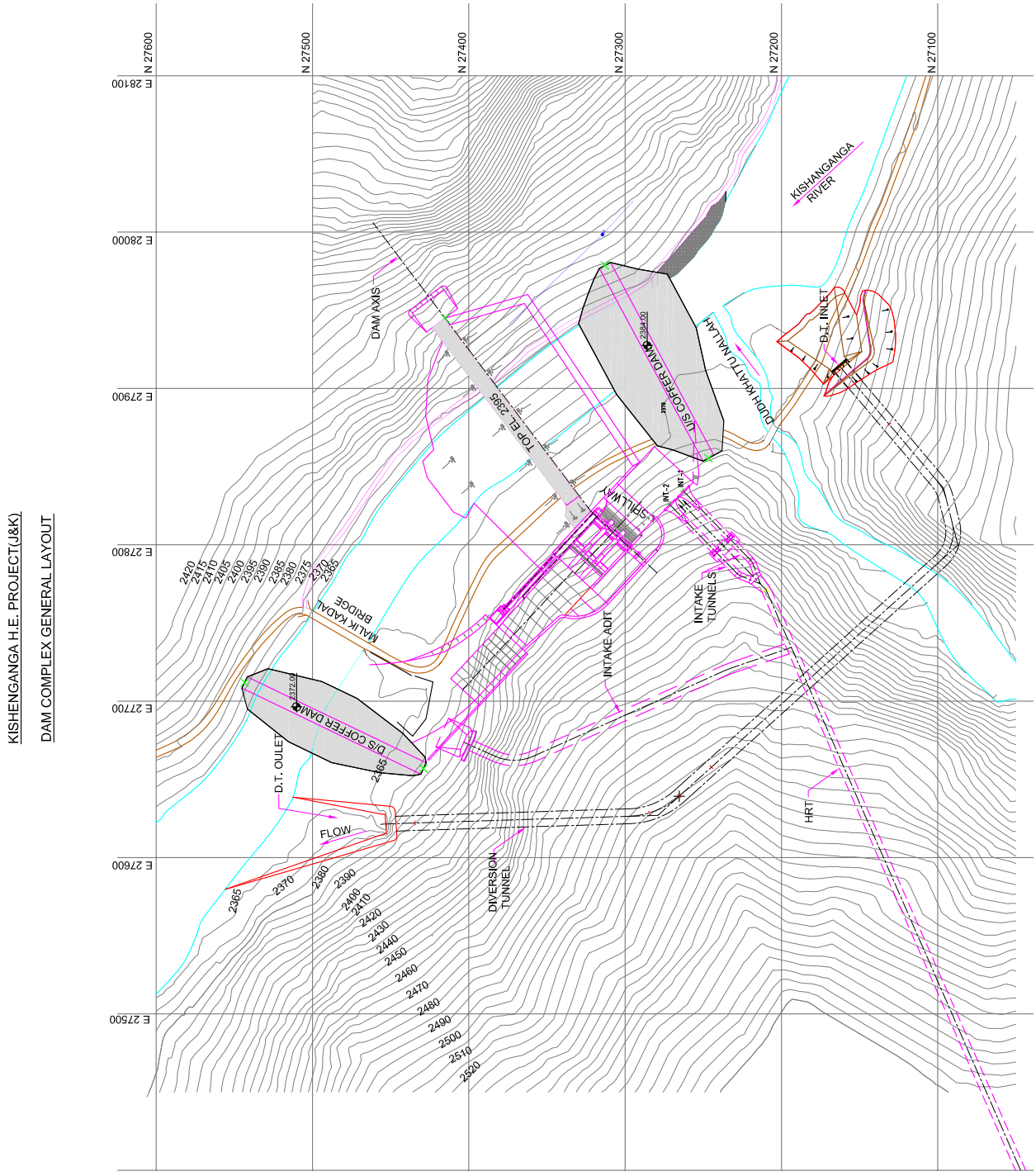
Source: Pakistan's Memorial, Volume 2, Figure 12.

265. The specific design of the KHEP, including the location of the spillway and gated openings, can be seen in the following technical diagrams, provided by India:

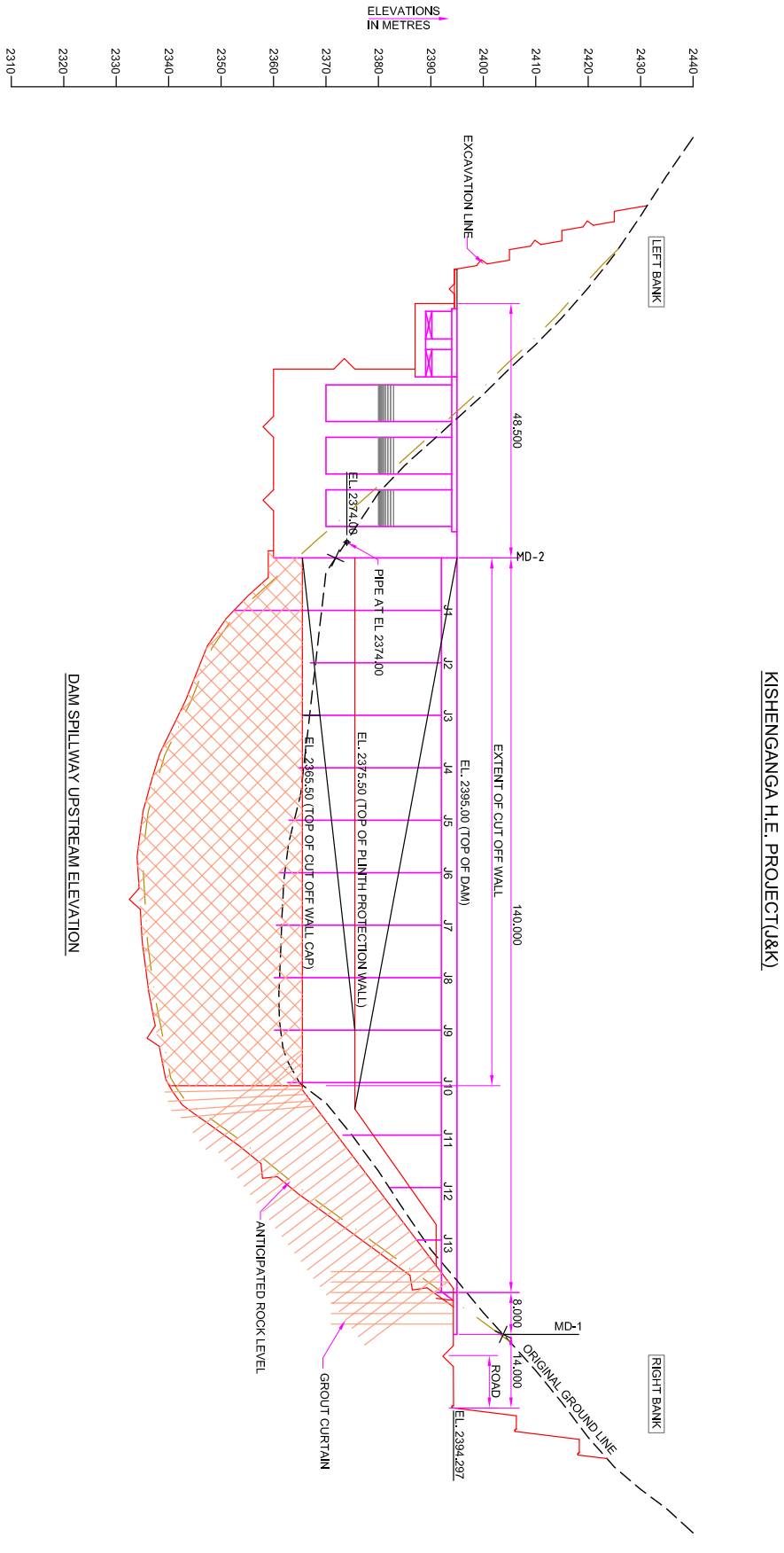
[332] *See* Indian Commissioner's letter to the Pakistani Commissioner, 19 June 2006, (Annex PK-163); India's Counter-Memorial, Appendix 2, paras. 12, 17; India's Counter-Memorial, Annex I, n.3 (*see* "MDDL"); *see also* Pakistan's Memorial, paras. 3.17, 6.19; India's Rejoinder, Report, Prof. Dr Anton J. Schleiss, Laboratory of Hydraulic Constructions (LCH), EPFL, Switzerland: "Note on Second Dispute regarding Drawdown Flushing," 7 May 2012, (IN-Tab I) (the "Schleiss Report"), p. 4.

Dead Storage is defined by the Treaty as "that portion of the storage which is not used for operational purposes"; Dead Storage Level "means the level corresponding to Dead Storage." In practice, the Dead Storage Level is calculated by reference to the surface of the reservoir at its maximum ordinary capacity (its "Full Pondage Level"). The storage between Full Pondage Level and the Dead Storage Level is termed the "Operating Pool," and its volume is regulated by Annexure D. The Dead Storage then extends from the riverbed to the lower limit of the Operating Pool, once the latter's capacity is determined under the Treaty. Pursuant to Paragraph 8(c) of Annexure D, the volume of the Operating Pool may not exceed twice the capacity required to meet fluctuations in the daily and weekly generating loads of the Plant when generating "Firm Power"—the electricity it can produce year round on the basis of the minimum average discharge at the site. In other words, the Dead Storage Level is a calculation based on the hydrological data for the minimum flow at the site and the engineer's determination of the storage capacity required to meet the planned daily and weekly variation in the generation of electricity.

[333] Indian Commissioner's letter to the Pakistani Commissioner, 25 May 2007, (Annex PK-174); India's Counter-Memorial, Appendix 2, paras. 12, 18, 35-37.



Source: India's Counter-Memorial, Volume 1, p. 291



Source: India's Counter-Memorial, Volume 1, p. 294

266. Drawdown flushing is a technique for the removal of sediment from the reservoir of a hydro-electric plant. The procedure consists of drawing the water in the reservoir down to a level close to that of the riverbed by releasing the water through low-level outlets in the dam. When the water is drawn down during drawdown flushing, its velocity through the reservoir approximates the river's natural flow and its increased capacity to transport sediment lifts accumulated deposits from the riverbed, expelling sediment from the reservoir through the outlets in the dam.[334] In the case of the KHEP, drawdown flushing would entail drawing down the water to the level of the spillway gates and therefore below Dead Storage Level.[335]

267. In this context, the Parties disagree as to whether, under the Treaty, India may bring the reservoir level of a Run-of-River Plant such as the KHEP below Dead Storage Level in circumstances other than unforeseen emergencies and, in particular, for the purpose of drawdown flushing. Pakistan submits that drawdown flushing is prohibited by specific provisions of the Treaty. India argues that it is permitted under the "state-of-the-art concept" enshrined in the Treaty, as confirmed by the *Baglihar* expert determination. India moreover objects to the admissibility of the Second Dispute for determination by the Court.

268. This Part summarizes the Parties' arguments regarding the Second Dispute, beginning with India's objection to admissibility and followed by the Parties' substantive arguments.

1. The Parties' arguments on the admissibility of the Second Dispute

269. Article IX of the Treaty provides for the settlement of differences and disputes that may arise in respect of the Treaty. Paragraphs (1) and (2) of Article IX read as follows:

> (1) Any question which arises between the Parties concerning the interpretation or application of this Treaty or the existence of any fact which, if established, might constitute a breach of this Treaty shall first be examined by the Commission, which will endeavour to resolve the question by agreement.
>
> (2) If the Commission does not reach agreement on any of the questions mentioned in Paragraph (1), then a difference will be deemed to have arisen, which shall be dealt with as follows:
>
> (a) Any difference which, in the opinion of either Commissioner, falls within the provisions of Part 1 of Annexure F shall, at the request of either Commissioner, be dealt with by a Neutral Expert in accordance with the provisions of Part 2 of Annexure F;

[334] Pakistan's Memorial, para. 6.20.

[335] India's Counter-Memorial, Appendix 2, para. 37.

(b) If the difference does not come within the provisions of Paragraph (2) (a), or if a Neutral Expert, in accordance with the provisions of Paragraph 7 of Annexure F, has informed the Commission that, in his opinion, the difference, or a part thereof, should be treated as a dispute, then a dispute will be deemed to have arisen which shall be settled in accordance with the provisions of Paragraphs (3), (4) and (5):

Provided that, at the discretion of the Commission, any difference may either be dealt with by a Neutral Expert in accordance with the provisions of Part 2 of Annexure F or be deemed to be a dispute to be settled in accordance with the provisions of Paragraphs (3), (4) and (5), or may be settled in any other way agreed upon by the Commission.

270. Paragraphs (3), (4) and (5) of Article IX establish the procedure for the Governments of India and Pakistan to resolve disputes by agreement or, should such efforts fail, for the constitution of a court of arbitration.

271. Article IX classifies issues that may arise between the Parties concerning the interpretation or application of the Treaty (or concerning the existence of a fact which, if established, might constitute a breach of the Treaty) as "questions," "differences," or "disputes." Any such issue will first be considered a "question." "Questions" are examined by the Commission, which endeavours to resolve them by agreement. If the Commission fails to reach agreement in respect of a question, the Treaty provides for some questions to be considered and resolved as "differences," while others proceed to become "disputes." Although the Parties remain free to employ any mode of settlement to deal with any disagreement between them, distinct procedures may apply in default of such agreement. "Differences" may be resolved in an expedited fashion by a neutral expert—a "highly qualified engineer" appointed following the procedure set out in Annexure F to the Treaty.[336] "Disputes," on the other hand, must be resolved either by agreement of the Governments of India and Pakistan or, if no settlement can be reached, by a court of arbitration.

272. India submits that the Second Dispute is not admissible for determination by the Court, because it should first have been submitted to a neutral expert and because there is, accordingly, at present no "dispute" within the meaning of Article IX of the Treaty.[337] Specifically, India argues that: (1) the consideration of the Second Dispute by the Court is premature, as Pakistan has failed to follow the procedure envisaged by Article IX of the Treaty for the submission of "disputes" to a court of arbitration;[338] and (2) the Second Dispute is a technical question that

[336] Treaty, Annexure F, Para. 4.

[337] India's Counter-Memorial, para. 7.2; India's Rejoinder, paras. 4.2, 4.4.

[338] India's Rejoinder, paras. 4.1, 4.4, 4.34.

falls within Part 1 of Annexure F to the Treaty and should therefore be classified as a "difference" and resolved by a neutral expert.[339] Pakistan disputes both propositions.

(a) Whether Pakistan has followed the procedure of Article IX for the submission of disputes to the Court

India's arguments

273. India's first objection to the admissibility of the Second Dispute concerns the procedure by which a dispute may be brought before a court of arbitration. According to India, Pakistan did not follow the procedural steps required by the Treaty for a "dispute" to be deemed to have arisen. In India's view, given the absence of agreement within the Commission on the disposition of the Second Dispute, Pakistan should have requested the appointment of a neutral expert and should have asked that expert to decide whether the Second Dispute constitutes a "difference" or a "dispute." Only, India argues, if a neutral expert were to determine that the Second Dispute was not a technical question within Part 1 of Annexure F to the Treaty could it be brought before a court of arbitration.

274. India accepts that any issue in respect of the Treaty raised by a Party would first be considered a "question" for the Commission to examine.[340] Indeed, India notes that Article VIII(4) of the Treaty obliges the Commission to "make every effort" to settle such questions promptly.[341] In India's view, however, this is more than a perfunctory obligation. India considers that "serious efforts must be made in the Permanent Indus Commission to resolve any 'Question' raised by either party under what may be referred to as the co-operative 'umbrella' of the Commission."[342] Members of the Commission must be highly qualified engineers, and "the Commissioners . . . carry a significant responsibility in scrupulously implementing the stage-wise mechanism provided under the Treaty."[343]

275. In the event that the Commission's efforts fail, however, India considers that there is only one path that a Commissioner may initiate unilaterally: the referral of the resulting difference to a

[339] India's Counter-Memorial, para. 1.16; India's Rejoinder, paras. 4.35, 4.41.

[340] India's Rejoinder, para. 4.7.

[341] India's Rejoinder, para. 4.7.

[342] India's Rejoinder, para. 4.8.

[343] India's Rejoinder, paras. 4.16-4.17.

neutral expert.[344] Article IX(2)(a), India notes, expressly empowers a Commissioner to request a neutral expert if—in that Commissioner's opinion—a difference is technical and within the ambit of Part 1 of Annexure F. If, however, the Commissioners disagree in this respect, India argues that reference must be had to Annexure F itself, and to its Paragraph 7, which provides for the neutral expert to decide on the procedure applicable to a difference in the event of a disagreement in the Commission.[345]

276. In contrast to Article IX(2)(a), India argues, Article IX(2)(b) includes no provision for a single Commissioner to deem a "dispute" to have arisen.[346] Instead, Article IX(2)(b) applies only if Article IX(2)(a) does not—in other words, if neither Commissioner considers the difference to be a technical matter for a neutral expert—or if a neutral expert, having considered the matter, determines that the difference falls outside his competence. Accordingly, India submits, in the event of a disagreement as to how to proceed, neither Party can simply initiate arbitration: "it has to go back to a neutral expert to decide whether or not [the difference] is a dispute" that can be taken to a court of arbitration.[347] In India's view, this priority in favour of the Commission and the neutral expert is understandable in light of the key role that the Treaty gives to engineers in interpreting its most important provisions[348] and the need for the Parties to be able to proceed quickly to a neutral expert in respect of the engineering questions arising from the Commission's day-to-day work.[349]

277. In the present case, India considers that this procedure was not followed. The Commissioners never agreed that the difference was not a technical matter for a neutral expert, nor was any neutral expert ever requested to pass upon the proper disposition of the difference. On the contrary, India submits, its Commissioner "was of the opinion that the 'difference' fell within the provisions of [P]aragraph 2(a)," a position with which the Pakistani Commissioner disagreed.[350] This disagreement was clear, India argues, notwithstanding its position that the

[344] India's Rejoinder, para. 4.21.

[345] Hearing Tr., (Day 6), 27 August 2012, at 109:8 to 110:11, 110:22 to 111:7.

[346] Hearing Tr., (Day 6), 27 August 2012, at 111:8-12.

[347] Hearing Tr., (Day 6), 27 August 2012, at 111:24 to 112:5.

[348] India's Rejoinder, para. 4.14.

[349] Hearing Tr., (Day 6), 27 August 2012, at 116:9-24.

[350] India's Rejoinder, para. 4.19; *see also* Hearing Tr., (Day 9), 30 August 2012, at 100:3-8 ("The Pakistan Commissioner in the present case did not accept that the difference fell within paragraph 2(a), that is within the [23] items of Part 1 of Annexure F to go to a Neutral Expert. The Indian Commissioner held the contrary view . . .").

matter could be resolved even without recourse to a neutral expert. Far from attempting to forestall discussion within the Commission or denying that the Second Dispute constituted at least a "question,"[351] India submits that its position recognized the importance of such discussions and of the Commission. India considers its consistent position to have been that the Commission should resolve these questions by agreement and that it was unnecessary to address the issue outside the Commission—in particular because the authoritative precedent of the *Baglihar* expert determination was available to assist the Commission in understanding the substance of the Second Dispute.[352]

278. Given the Commissioners' disagreement on how to proceed, India argues that it was incumbent upon the Pakistani Commissioner to submit the Second Dispute to a neutral expert and for that expert to determine that Dispute's proper disposition.[353] In India's view, the Pakistani Commissioner's decision not to make such a request and to instead unilaterally qualify the Second Dispute as a "dispute" in the 11 March 2009 Letter "usurp[ed] the role of the Commission and the Neutral Expert" and caused the premature submission of the Second Dispute for consideration by this Court.[354]

Pakistan's arguments

279. Pakistan submits that the Second Dispute is properly before the Court.[355] First, Pakistan notes that the Court's jurisdiction over both disputes is not contested.[356] Second, Pakistan argues that it made extensive efforts to resolve the Second Dispute through negotiation and has fulfilled the procedural requirements of Article IX of the Treaty.[357]

---

[351] India's Rejoinder, paras. 4.6-4.7, 4.11. According to India, the substance of the Second Dispute was raised by Pakistan in the form of "*Questions*" during the 100th meeting of the Commission. India's Rejoinder, para. 4.11. In accordance with Arts. VIII(4)(b) and IX(1) of the Treaty, the Commission discussed and attempted to resolve these questions at its 100th, 101st and 103rd meetings held respectively in May-June 2008, July 2008 and May 2009. India's Rejoinder, paras. 4.11-4.12, 4.25, 4.32, referring to Record of the 100th Meeting of the Commission, Lahore, 31 May–4 June 2008, (Annex PK-34), pp. 147-185, and Record of the 103rd Meeting of the Commission, New Delhi, 31 May–5 June 2009, (Annex PK-36), pp. 227-228.

[352] India's Rejoinder, para. 4.13.

[353] India's Counter-Memorial, para. 7.6; India's Rejoinder, paras. 1.84, 4.18-4.19, 4.21, 4.33.

[354] India's Counter-Memorial, para. 1.16; India's Rejoinder, paras. 1.84, 4.1, 4.4, 4.26, 4.32, 4.34.

[355] Pakistan's Memorial, paras. 4.8-4.9.

[356] Hearing Tr., (Day 10), 31 August 2012, at 41:17-19 ("this Court has jurisdiction—indeed, it is not contested that this Court has jurisdiction—over both disputes").

[357] Pakistan's Memorial, para. 4.8.

280. In Pakistan's view, Article IX(2)(a) permits either Party to insist on the appointment of a neutral expert. If a request for such an appointment is made, it falls to the neutral expert to determine whether the question put to him is within his competence. But a request for the appointment of a neutral expert must in fact be made, and in the absence of such a request, this Court is competent to evaluate and decide the Second Dispute itself. In other words, "if the Commissioner doesn't trigger the Neutral Expert procedure under Article IX(2)(a) prior to the establishment of the Court of Arbitration, that priority is never triggered and the Court of Arbitration has jurisdiction under Article IX(5) of the Treaty."[358]

281. According to Pakistan, prior to its submissions in these proceedings, India had never argued that the Second Dispute was a matter for a neutral expert or that it constituted a "difference" under the Treaty. Moreover, Pakistan argues, India has "consistently denied the existence even of a question for the purposes of Article IX(1) of the Treaty."[359] Turning to the record of the Commission, Pakistan observes that India repeatedly sought to characterize matters relating to the Second Dispute as "issues," rather than "questions," and objected to any reference to the terminology of Article IX of the Treaty.[360] Against this background, Pakistan submits, it is not now open to India to "backtrack" through multiple years—during which Pakistan submitted the Second Dispute to this Court—and argue that there is in fact a "difference" to be resolved by a neutral expert.[361]

282. Not only did India reject the applicability of Article IX, Pakistan observes, but India never sought the appointment of a neutral expert.[362] Had such a request been made, Pakistan acknowledges that "the question whether the difference did fall within Part 1 of Annexure F

---

[358] Hearing Tr., (Day 4), 23 August 2012, at 172:20-24.

[359] Hearing Tr., (Day 4), 23 August 2012, at 155:13-15; *see also* Hearing Tr., (Day 4), 23 August 2012, at 157:13-15; Hearing Tr., (Day 8), 29 August 2012, at 78:2-7.

[360] Hearing Tr., (Day 4), 23 August 2012, at 161:17 to 172:3; *see also* Record of the 100th Meeting of the Commission, Lahore, 31 May–4 June 2008, (Annex PK-34), pp. 3, 26-29; Record of the 101st Meeting of the Commission, New Delhi, 25–28 July 2008, (Annex PK-35), pp. 12-14; Record of the 103rd Meeting of the Commission, New Delhi, 31 May–5 June 2009, (Annex PK-36), pp. 12-22.

[361] Pakistan's Memorial, para. 4.9(d)-(f); Pakistan's Reply, paras. 1.39-1.41, referring to Record of the 100th Meeting of the Commission, Lahore, 31 May–4 June 2008, (Annex PK-34); Record of the 101st Meeting of the Commission, New Delhi, 25–28 July 2008, (Annex PK-35); Record of the 103rd Meeting of the Commission, New Delhi, 31 May–5 June 2009, (Annex PK-36); Pakistani Commissioner's letter to the Indian Commissioner, 11 March 2009, (Annex PK-194); India's Note Verbale, 20 August 2009, (Annex PK-214).

[362] Pakistan's Memorial, para. 4.11; Pakistan's Reply, para. 1.41.

would have been a matter for the Neutral Expert."[363] However, Pakistan argues, "as neither party made such a request—and indeed the Indian Commissioner expressly took the position that there was no difference—Article IX(2)(a) does not apply in this case."[364] Pakistan therefore considers that it correctly initiated proceedings before this Court.[365] Having determined not to request a neutral expert at the appropriate juncture, India is no longer free to insist that a neutral expert determine the disposition of the Second Dispute in the first instance.[366]

283. According to Pakistan, it is now for the Court to decide whether the Second Dispute before it is a "dispute" within the meaning of the Treaty. Pakistan points to Paragraph 16 of Annexure G to the Treaty, which provides that the Court "shall decide all questions relating to its competence."[367] Once a dispute is referred to the Court, Pakistan argues, "the Court has the power to make a final determination on all questions of competence and procedure."[368] Accepting India's admissibility argument to the contrary, Pakistan submits, would amount to permitting India to frustrate the working of the Treaty's dispute resolution provisions, first in the Commission and now before the Court.[369]

(b) Whether the Second Dispute is a technical matter that falls within Part 1 of Annexure F and should therefore be classified as a "difference" to be decided by a neutral expert

India's arguments

284. India's second objection to admissibility is that, irrespective of the procedure followed, the Second Dispute is a matter for a neutral expert. The Second Dispute relates to the design of the KHEP and the location of outlets for sediment control below Dead Storage Level pursuant to Paragraph 8(d) of Annexure D.[370] Questions concerning the conformity of a Plant with this provision are consigned by the Treaty to the determination of a neutral expert.[371] Moreover,

[363] Hearing Tr., (Day 10), 31 August 2012, at 40:21-24.

[364] Hearing Tr., (Day 4), 23 August 2012, at 158:16-20.

[365] Hearing Tr., (Day 8), 29 August 2012, at 78:8-12.

[366] Hearing Tr., (Day 4), 23 August 2012, at 155:3-6; Hearing Tr., (Day 8), 29 August 2012, at 78:12-14.

[367] Pakistan's Memorial, para. 4.7, quoting Para. 16 of Annexure G.

[368] Pakistan's Memorial, paras. 4.7, 4.10.

[369] Hearing Tr., (Day 4), 23 August 2012, at 172:6-12.

[370] India's Counter-Memorial, para. 7.2.

[371] India's Counter-Memorial, para. 7.8.

India observes, Pakistan has itself committed to referring the question of low-level outlets to a neutral expert—the same issue it now seeks to bring before the Court.

285. India recalls that, at the 100th meeting of the Commission in May–June 2008, Pakistan raised the following two questions:

> (4) Whether the design of the [KHEP] is in conformity with Paragraph 8(d) of Annexure D to the Treaty?
>
> [. . .]
>
> (6) Whether under the Treaty, India may deplete or bring the reservoir level of a run-of-river Plant below dead storage level in any circumstances except in the case of an unforeseen emergency?[372]

286. When questioned on the appropriateness of including Question 6 in the Commission's discussions of the KHEP, India notes, Pakistan explicitly accepted that the questions are a "single composite issue," stating that "while Question No. 6 may be general in scope, the need for its examination arises directly out of Pakistan's objections to the current design of the Kishenganga Project."[373] At the same time, Pakistan outlined its objections, pursuant to Paragraph 8(d), to the low-level orifice spillways contemplated for the KHEP. By the 11 March 2009 Letter, Pakistan then notified India of its intention to seek the appointment of a neutral expert with respect to the following difference concerning low-level orifice spillways:

> Pakistan is of the considered view that the orifice spillway provided in the current design of the [KHEP] constitutes an outlet below Dead Storage Level which is not in accordance with the criteria contained in Paragraph 8(d) of Annexure D to the Treaty. India does not agree with Pakistan's position.[374]

287. In India's view, "Pakistan is thus on record as having confirmed a direct connection, as a matter of design, between the questions referred to the Court as the subject-matter of the second Dispute and the difference in regard to the design of the Kishenganga Project covered by Paragraph 8(d) of Annexure D, which Pakistan has notified should be dealt with by a Neutral Expert."[375] According to India, the question of conformity with Paragraph 8(d) relates to the use of orifice spillways for sediment control. Pakistan's own view, India argues, is that such

---

[372] India's Rejoinder, para. 4.11, quoting Record of the 100th Meeting of the Commission, Lahore, 31 May–4 June 2008, (Annex PK-34), p. 183.

[373] Pakistani Commissioner's letter to the Indian Commissioner, 29 April 2009, (Annex PK-202), p. 5; *see also* India's Rejoinder, para. 4.28.

[374] India's Counter-Memorial, paras. 7.3-7.4, quoting Pakistani Commissioner's letter to the Indian Commissioner, 11 March 2009, (Annex PK-194).

[375] Hearing Tr., (Day 6), 27 August 2012, at 127:13-20.

spillways can only contribute to sediment control through drawdown flushing, which requires the depletion of the reservoir.[376] The question of depletion is thus intrinsically linked to the question Pakistan has proposed to refer to a neutral expert.

288. However, even had Pakistan not committed to refer the question to a neutral expert, India submits that the Second Dispute is inherently technical and "concerns a matter of design which [pursuant to the Treaty] has to be resolved by a Neutral Expert."[377] Under the Treaty, questions "as to whether or not the design of KHEP conforms to the criteria set out in Paragraph 8(d)" are within the competence of the neutral expert and—as Pakistan itself accepts—the need to consider drawdown flushing arises directly out of that provision.[378] Additionally, India considers the Second Dispute to be "demonstrably technical,"[379] noting in particular the technical examination of the question in the expert report by Professor Dr Anton J. Schleiss submitted by India (the "**Schleiss Report**"), the expert report by Dr Gregory L. Morris submitted by Pakistan (the "**Morris Report**"), and the minutes of the 100th, 101st and 103rd meetings of the Commission.[380] India also points to the *Baglihar* determination, noting that the neutral expert in that case treated a "similar question" as technical and proceeded to render a determination on that basis. In India's view, it would be appropriate for another neutral expert to decide the Second Dispute.[381]

Pakistan's arguments

289. In Pakistan's view, the Second Dispute is "manifestly . . . not a technical argument"[382] and does not fall within the list of technical questions for referral to a neutral expert.[383] On the contrary, Pakistan considers the Second Dispute to be "an important legal argument about the correct

[376] Hearing Tr., (Day 6), 27 August 2012, at 124:8-16; *see also* Pakistani Commissioner's letter to the Indian Commissioner, 29 April 2009, (Annex PK-202), p. 4 ("Orifice spillways will only provide any incremental sediment control benefits (as compared to either an ungated spillway or crest gated spillways) if India is able to carry out drawdown flushing with the level of the reservoir below dead storage level").

[377] India's Counter-Memorial, para. 7.8.

[378] India's Rejoinder, para. 4.35.

[379] India's Rejoinder, para. 4.24.

[380] India's Rejoinder, paras. 4.35-4.39, referring to Schleiss Report; Pakistan's Reply, Tab E, Gregory L. Morris, "Response to Items A, B and C in Chapter 7, Counter-Memorial of the Government of India" (18 February 2012).

[381] India's Counter-Memorial, paras. 7.12-7.14; India's Rejoinder, para. 4.43.

[382] Hearing Tr., (Day 4), 23 August 2012, at 173:12.

[383] Pakistan's Memorial, para. 4.11.

interpretation of certain specific provisions of the treaty,"[384] in particular the meaning of Paragraphs 2 and 14 of Annexure D to the Treaty, and the question of the weight to be given to the *Baglihar* expert determination.[385]

290. Moreover, Pakistan submits, it never notified India of any intention to refer the Second Dispute to a neutral expert.[386] The permissibility of orifice spillways is a distinct question and "there is no composite issue."[387] Rather, Pakistan argues, "[t]here is a series of separate questions, two of which Pakistan has identified as suitable for a Court of Arbitration and four of which Pakistan has identified as suitable for determination by a Neutral Expert."[388] India's use of drawdown flushing to justify a certain type of low-level outlet at the KHEP does not subsume the underlying legal question of "whether drawdown flushing is permitted at all."[389]

2. The Parties' arguments on the permissibility of reservoir depletion below Dead Storage Level

291. Pakistan is concerned that permitting drawdown flushing would allow India to exercise control over the waters of the Western Rivers by allowing the design of larger and lower outlets for reservoirs on those rivers. Such outlets would, in practice, increase India's physical ability to control the flow of the Western Rivers. With this concern in mind, it is Pakistan's case that drawdown flushing is prohibited by specific provisions of the Treaty restricting India's ability to deplete the reservoir of a Run-of-River Plant.[390] India opposes Pakistan's interpretation of the relevant provisions and argues that drawdown flushing is permitted under the Treaty's "state-of-the-art" concept, which permits the Treaty to be interpreted in light of technological advances. The Parties also disagree on the weight to be given by the Court to the *Baglihar* expert determination.

---

[384] Hearing Tr., (Day 4), 23 August 2012, at 173:13-15.

[385] Pakistan's Reply, paras. 1.42, 6.4.

[386] Pakistan's Reply, para. 1.41, referring to India's Counter-Memorial, para. 1.16.

[387] Hearing Tr., (Day 8), 29 August 2012, at 79:15-16.

[388] Hearing Tr., (Day 8), 29 August 2012, at 79:16-20.

[389] Hearing Tr., (Day 8), 29 August 2012, at 80:1-7.

[390] Pakistan's Reply, paras. 6.12-6.13.

(a) The permissibility of reservoir depletion generally

Pakistan's arguments

292. As is the case for the permissibility of the KHEP in the First Dispute, Pakistan submits that the question of whether India may deplete reservoirs on the Western Rivers—for drawdown flushing or otherwise—concerns the basic issue of "the permitted extent of Indian interference with the flow of the Western Rivers."[391]

293. According to Pakistan, "if India were permitted to deplete reservoirs as it saw fit, it would have very important rights in terms of interference with flow: first in terms of increasing the flow so as to deplete a given reservoir, and then in terms of reducing or halting the flow entirely when the reservoir is being refilled."[392] Given the significant number of Indian hydro-electric projects on the upper reaches of the Western Rivers, permitting India to use low-level outlets without restriction would enable it to have a "major impact on the timing of flows into Pakistan."[393]

294. The Treaty addresses this concern, Pakistan argues, by permitting India to generate hydro-electric power on the Western Rivers only to the extent permitted by Annexure D. Annexure D, in turn, contains specific provisions (discussed in detail below) that both prohibit India from lowering the water level of a reservoir below Dead Storage Level and restrict the design of Indian dams on the Western Rivers to limit India's ability to effect such depletion.[394] As presented to the Court, the Second Dispute is thus general in nature; it concerns the permissible operation, and by extension design, of any hydro-electric plant on the Western Rivers—not merely the KHEP.[395]

295. According to Pakistan, physical restrictions on India's ability to alter the flow of the Western Rivers were part of the bargain enshrined in the Treaty. Quoting Professor John Briscoe, former Senior Water Advisor at the World Bank, Pakistan submits that it "would agree [to the Treaty] only if limitations on India's capacity to manipulate the timing of flows was hardwired into the

---

[391] Hearing Tr., (Day 4), 23 August 2012, at 153:23-24; *see also* Pakistan's Memorial, para. 6.2.

[392] Hearing Tr., (Day 4), 23 August 2012, at 154:2-8; *see also* Pakistan's Memorial, paras. 6.2-6.4, 6.32.

[393] Pakistan's Memorial, para. 6.31, quoting J. Briscoe, "War or Peace on the Indus?" *The News*, 3 April 2010, (Annex PK-229).

[394] Pakistan's Memorial, para. 6.32.

[395] Hearing Tr., (Day 10), 31 August 2012, at 42:15-17; Hearing Tr., (Day 4), 23 August 2012, at 154:16-18.

treaty."[396] This was done even though the Parties were aware of the need to control sediment accumulation,[397] as well as the practice of using low-level outlets to flush sediments from a reservoir.[398] Paragraph 8(d) of Annexure D, Pakistan observes, refers to the need for "sediment control" even as it imposes restrictions on the size and placement of outlets.[399] And according to Pakistan's expert, Dr Morris, "flushing and sluicing techniques were recognized and employed prior to the treaty," although their use in storage reservoirs was comparatively new.[400] As evidence of the state of sediment control knowledge in 1960, Pakistan points to a 1951 paper (published in the proceedings of the 1951 Congress in New Delhi of the International Commission on Large Dams (the "**ICOLD**")) on the design of the Mera Dam in Italy's Villa di Chiavenna valley and the planned use of drawdown flushing in the operation of those works.[401] Dr Morris also noted the well-known use of flushing in the operation of the Old Aswan Dam.[402]

296. Finally, Pakistan observes, India acknowledged the existence of the prohibition on depletion and drawdown flushing for most of the life of the Treaty, stating in the course of Commission meetings in 1995 that "restrictions imposed by the Treaty not to lower the water level in the reservoir below [Dead Storage Level], even though the same may be necessary for effective flushing of the reservoir, is a major handicap in efficient operation of sediment sluices."[403]

India's arguments

297. According to India, Pakistan's fear that drawdown flushing will be used to control the flow of the Western Rivers and deprive Pakistan of water is unfounded.[404] Moreover, India submits that

[396] Hearing Tr., (Day 4), 23 August 2012, at 176:17-19, quoting J. Briscoe, "War or Peace on the Indus?" *The News*, 3 April 2010, (Annex PK-229).

[397] Hearing Tr., (Day 4), 23 August 2012, at 184:4-6.

[398] Hearing Tr., (Day 2), 21 August 2012, at 124:6-7 (Court examination of Dr Morris) ("I could say that the technique was already known").

[399] Pakistan's Reply, para. 6.19; Morris Report, p. 5.

[400] Morris Report, p. 18.

[401] Hearing Tr., (Day 2), 21 August 2012, at 94:12 to 95:12 (direct examination of Dr Morris); C. Marcello, *Le Barrage du Mera à Villa di Chiavenna*, Communication of the Quatrieme Congrès de Grands Barrages, New Delhi, 1951, (Annex PK-251).

[402] Hearing Tr., (Day 2), 21 August 2012, at 124:6 to 125:3 (Court examination of Dr Morris).

[403] Pakistan's Memorial, para. 6.12, quoting Record of the 96th Meeting of the Commission, New Delhi, 1-2 June 2005, (Annex PK-31), p. 4; Pakistan's Reply, para. 6.13.

[404] India's Counter-Memorial, paras. 7.43-7.44, 7.95.

the intense focus Pakistan places on this possibility ignores the Treaty's concern that India be able effectively to generate hydro-electric power on the Western Rivers, a concern reflected in the Treaty's flexible accommodation of an evolving technological state of the art.[405] Drawdown flushing, India argues, was not known or accepted as a sediment management practice in 1960, but has since become the state of the art.[406]

298. With respect to the flow of the Western Rivers, India submits that Pakistan is adequately protected under the Treaty even if the KHEP is equipped with outlets intended for drawdown flushing. Under any circumstances, India argues, the flushing and refilling of the KHEP reservoir would be limited by the Treaty to the prescribed flood period of the year—that is, from 21 June to 20 August—unless the Parties agreed otherwise.[407] Moreover, it would be "wholly unrealistic" to deplete and refill the Dead Storage on an *ad hoc* basis, or during the lean season. Such operation requires a complete stop in power generation, which for the KHEP would cause a loss of power worth some 30 million rupees (approximately USD 560,000) per day;[408] during the lean season this process would extend unacceptably over many weeks, instead of the few days that would be required during the high flow season.[409]

299. At the same time, India considers that Pakistan ignores the Treaty's accommodation of evolving technology. According to India, "the framers of the Treaty were mindful of the rapid evolution of the technology and therefore enshrined the 'state of the art' concept in the Treaty."[410] Design criteria are required to be "consistent with sound and economical design and satisfactory construction and operation,"[411] India notes, and "in the absence of any prohibition under the Treaty, India is entitled to use state-of-the-art maintenance processes and measures, including drawdown flushing, to ensure long-term sustainability of the KHEP."

300. For India, the Treaty drafters cannot have intended to prohibit drawdown flushing insofar as knowledge of the technique was limited in the 1960s. India endorses the review of the historical record undertaken in the *Baglihar* determination for the following proposition:

---

[405] India's Counter-Memorial, para. 7.56.

[406] India's Rejoinder, para. 1.85.

[407] India's Counter-Memorial, paras. 7.43-7.44, 7.95.

[408] India's Counter-Memorial, paras. 7.45, 7.95.

[409] India's Counter-Memorial, para. 7.96.

[410] India's Counter-Memorial, para. 7.56.

[411] India's Counter-Memorial, para. 7.52.

> Before 1960, the theoretical aspects of sediment transport were generally known, with the exception of the turbidity currents. The removal processes of deposited sediment by flushing and dredging, and the routing by sluicing and venting were also known and applied, but only in some cases. It was after 1970 that these processes of flushing, sluicing, and venting became more generally developed.[412]

301. Similarly, India argues, the risks of sedimentation were less thoroughly appreciated in 1960 than they are today: "it was only 20 years later, in 1980, that the concept of an integrated reservoir sedimentation management began to be clear and coherent."[413] In light of this level of awareness—and in light of the fact that the "provision of gates at low elevation in the 1960s would have been very difficult because [the] technologies related to gate operation were not developed at that time"[414]—India considers it reasonable that the Treaty would not expressly address drawdown flushing and would continue to require outlets at the highest level "consistent with sound and economical design."[415] Nevertheless, India considers flushing permissible in light of the evolving nature of this standard.[416]

302. Finally, with respect to its prior position on drawdown flushing, India accepts that "for a considerable period up to the time the Baglihar case came up before the Neutral Expert, it was assumed by the Indian and Pakistani engineers that in terms of the definition of Dead Storage, drawdown below Dead Storage Level was not allowed for flushing or otherwise."[417] However, India notes, the questions in *Baglihar* led to a re-examination of the Treaty by India and the adoption of a revised legal interpretation.[418]

(b) The Treaty's definition of "Dead Storage"

303. Paragraph 2(a) of Annexure D to the Treaty defines "Dead Storage" as follows:

> "Dead Storage" means that portion of the storage which is not used for operational purposes and "Dead Storage Level" means the level corresponding to Dead Storage.

---

[412] Hearing Tr., (Day 6), 27 August 2012, at 150:13-20, quoting *Baglihar* Determination, (Annex PK-230), p. 42.

[413] Hearing Tr., (Day 6), 27 August 2012, at 150:23 to 151:1, quoting *Baglihar* Determination, (Annex PK-230), p. 42.

[414] Hearing Tr., (Day 3), 22 August 2012, at 102:12-15 (cross-examination of Dr Rangaraju).

[415] Hearing Tr., (Day 3), 22 August 2012, at 95:13 to 96:4 (cross-examination of Dr Rangaraju).

[416] India's Rejoinder, para. 1.85.

[417] India's Counter-Memorial, para. 7.22.

[418] India's Counter-Memorial, para. 7.23.

Pakistan's arguments

304. In Pakistan's view, the definition of Dead Storage in Annexure D should be seen in light of the obligation on India to let flow the waters of the Western Rivers.[419] Restrictions on storage, including through this definition, represent "one of the techniques," agreed upon by the Parties, "to restrict the scope for interference with flow."[420] For Pakistan, the definition acts as a prohibition: because Dead Storage is not used for operational purposes, it "cannot just be drawn down as India see fit" in the course of operating a Run-of-River Plant.[421]

305. According to Pakistan, this restriction "cannot be sidestepped" by labelling the flushing of reservoir storage a "maintenance" activity and attempting to distinguish it from "operation."[422] Despite India's efforts to the contrary, Pakistan argues, "the fine distinction . . . that India seeks to draw is nowhere supported by the language of the Treaty."[423] On the contrary, at least two of the sources invoked by India in fact support the opposite interpretation, treating sediment removal as an aspect of the operation of a reservoir.[424] Paragraph 8(d) of Annexure D provides that "outlets . . . necessary for sediment control . . . shall be of the minimum size, and located at the highest level, consistent with sound and economical design and with satisfactory operation of the works." In this provision, Pakistan argues, "[s]ediment control is seen as a matter of operation, not some separate concept of maintenance."[425] Similarly, the ICOLD Code of Ethics invoked by India addresses sediment management as a matter of operation.[426]

306. Not only, Pakistan argues, is there no textual basis for the confined understanding of "operational purposes" advocated by India, but other aspects of the Treaty are incompatible with such a view as well. The restrictions on the flow below a Plant in the course of "operation," for instance, cannot be viewed as applying only to the generation of hydro-electric

[419] Pakistan's Memorial, para. 6.8.

[420] Hearing Tr., (Day 4), 23 August 2012, at 176:9-11.

[421] Pakistan's Memorial, para. 6.9; *see also* Pakistan's Memorial, para. 6.21.

[422] Hearing Tr., (Day 4), 23 August 2012, at 177:20-23.

[423] Pakistan's Reply, para. 6.17; *see also* Hearing Tr., (Day 4), 23 August 2012, at 178:3-4.

[424] Hearing Tr., (Day 8), 29 August 2012, at 85:18-24.

[425] Pakistan's Reply, para. 6.17.

[426] Pakistan's Reply, para. 6.18; Hearing Tr., (Day 4), 23 August 2012, at 180:15-25; Hearing Tr., (Day 8), 29 August 2012, at 85:20-23.

power.[427] Pakistan would be offered "no practical protection" if India could obviate such flow restrictions simply by claiming to engage in "maintenance" rather than "operations."[428]

India's arguments

307. India submits that, by its explicit terms, the definition of "Dead Storage" at Paragraph 2(a) of Annexure D to the Treaty—"that portion of storage which *is not* used for operational purposes"—describes the actual practice of using Dead Storage.[429] According to India, the definition does not incorporate a prohibition: "there are no words of obligation, such as 'shall,' in the definition."[430] Had the framers of the Treaty intended to prohibit the use of Dead Storage for operational purposes, the definition would have described that "portion of the storage *which cannot/may not* be used for operational purposes."[431]

308. Although the Treaty does not define "operational purposes," India submits that drawdown flushing is not an operational purpose. For India, "operational purposes" are confined to power generation and do not include the maintenance of the reservoir[432] and, in particular, activities that make use of the "operating pool"—a term defined in the Treaty. According to India, "if dead storage is depleted for purposes of sediment control, this cannot be an operational purpose. . . . For such purposes, the operating pool is used."[433] In fact, during drawdown flushing, Dead Storage is not used at all, but is rather "disused or discharged."[434]

309. In India's view, drawdown flushing, like "lubrication of bearings, maintaining the requisite cleanliness, painting of gates, removal of weeds, plastering of worn concrete, replacement of chains, pulleys, etc.," is inherently a maintenance operation and ancillary to the generation of power.[435] Importantly, India observes, "[t]here is no prohibition in Annexure D against

---

[427] Pakistan's Memorial, para. 6.30.

[428] Pakistan's Memorial, para. 6.30.

[429] India's Counter-Memorial, paras. 7.23, 7.46, quoting Treaty, Annexure D, Para. 2(d) (emphasis added by India); India's Rejoinder, paras. 4.55, 4.57, 4.87, 4.94.

[430] Hearing Tr., (Day 6), 27 August 2012, at 145:4-5.

[431] India's Rejoinder, para. 4.59.

[432] India's Counter-Memorial, paras. 7.50, 7.94.

[433] Hearing Tr., (Day 6), 27 August 2012, at 145:13-16.

[434] India's Counter-Memorial, para. 7.50.

[435] India's Rejoinder, para. 4.89.

maintenance."[436] On the contrary, "maintenance is implicitly contemplated in [P]aragraph 8(d)'s recognition that sediment control may be necessary."[437] This interpretation, India notes, was also endorsed by the Neutral Expert in the *Baglihar* determination[438] and by Dr Schleiss in his expert report in these proceedings.[439]

(c) The Treaty's provisions on the filling of reservoirs

310. Paragraph 14 of Annexure D provides as follows:

> The filling of Dead Storage shall be carried out in accordance with the provisions of Paragraph 18 or 19 of Annexure E.

311. In turn, Paragraphs 18 and 19 of Annexure E provide, in relevant part:

> 18. The initial filling below Dead Storage Level, at any site, shall be carried out at such times and in accordance with such rules as may be agreed upon. In case the Commissioners are unable to reach agreement, India may carry out the filling as follows:
>
> [. . .]
>
> 19. The Dead Storage shall not be depleted except in an unforeseen emergency. If so depleted, it will be re-filled in accordance with the conditions of its initial filling.

Pakistan's arguments

312. In Pakistan's submission, Paragraph 14 of Annexure D, through its reference to the provisions for Storage Works in Annexure E, imposes on Run-of-River Plants the restriction that Dead Storage "shall not be depleted except in an unforeseen emergency." According to Pakistan, the need for removal of accumulated sediment cannot constitute an "unforeseen emergency," given that this need has already been anticipated by India, as well as by the Treaty at Paragraph 8(d) of Annexure D.[440] Accordingly, Pakistan argues, the depletion of Dead Storage for drawdown flushing is prohibited by Paragraph 14.

313. In interpreting the incorporation from Annexure E, Pakistan submits that the ordinary meaning of Paragraph 14 is a reference to all of Paragraphs 18 and 19 of Annexure E—including the

[436] Hearing Tr., (Day 6), 27 August 2012, at 145:16-17.

[437] Hearing Tr., (Day 6), 27 August 2012, at 145:18-20.

[438] India's Counter-Memorial, paras. 7.25, 7.26; India's Rejoinder, para. 4.94.

[439] India's Counter-Memorial, paras. 4.87-4.88, referring to Schleiss Report, pp. 6-7.

[440] Pakistan's Memorial, para. 6.21.

prohibition on reservoir depletion.[441] According to Pakistan, "the second sentence of paragraph 19 of Annexure E follows on—and only follows on—from the rule on depletion in the first sentence of paragraph 19."[442] The second sentence begins with the words "if so depleted"; grammatically it "makes no sense"[443] without the preceding sentence. In Pakistan's view, the provision "cannot be interpreted and applied as if it established a rule for 'filling' that applied in other circumstances."[444] Moreover, Pakistan asks, given that the schedule for filling is contained in Paragraph 18, if the Parties' concern was related only to filling (and not to depletion), "why would there be the reference to paragraph 19 of Annexure E at all? Why not just refer to paragraph 18?"[445]

314. In Pakistan's consideration, the prohibition on depletion resulting from Paragraph 14 is also logical in the context of the Treaty's overall effort to limit storage and restrict India's ability to control the flow of the Western Rivers.[446] The Parties were aware that sediment would be a problem.[447] Yet sedimentation, Pakistan argues, is a greater problem for Storage Works than for Run-of-River installations, for which the techniques for sediment management were well-developed in 1960. Annexure E expressly prohibits the depletion of Storage Works for sediment control and provides instead that, as such works fill with sediment, India is entitled to construct additional, replacement storage on the Western Rivers.[448] It would be counter-intuitive for concerns over sedimentation to have resulted in greater flexibility precisely for those run-of-river installations where sediment is actually a lesser problem.[449]

315. Finally, Pakistan observes, the KHEP is not typical of the type of Run-of-River Plant that may have been contemplated by Annexure D. After its re-design from a Storage Work in 2006, the KHEP retained many characteristics of an Annexure E Storage Work,[450] in particular, a Dead

[441] Pakistan's Reply, paras. 6.23-6.25; *see also* Hearing Tr., (Day 4), 23 August 2012, at 185:13-18.

[442] Hearing Tr., (Day 4), 23 August 2012, at 186:9-12.

[443] Hearing Tr., (Day 4), 23 August 2012, at 186:12-15.

[444] Pakistan's Reply, para. 6.25.

[445] Hearing Tr., (Day 8), 29 August 2012, at 82:11-16; Hearing Tr., (Day 8), 29 August 2012, at 82:17-22.

[446] Hearing Tr., (Day 4), 23 August 2012, at 184:17-23.

[447] Hearing Tr., (Day 4), 23 August 2012, at 184:4-6.

[448] Hearing Tr., (Day 4), 23 August 2012, at 187:1-3.

[449] Hearing Tr., (Day 4), 23 August 2012, at 187:5-8.

[450] Pakistan's Reply, paras. 6.27, 6.30.

Storage volume far greater than is characteristic of typical Run-of-River Plants.[451] Considering its design and the large hydrological size of its reservoir,[452] Pakistan suggests that the KHEP could be better characterized as an Annexure E Storage Work. Viewed as a Storage Work in terms of Annexure E, Pakistan considers that the express prohibition on depletion in Paragraph 19 would unquestionably apply.[453]

India's arguments

316. In India's view, Paragraph 14 of Annexure D, and its reference to the relevant provisions of Annexure E, restricts the filling and refilling of the reservoirs of Run-of-River Plants—but not the depletion of such reservoirs. Depletion, India notes, "isn't mentioned at all in Annexure D."[454]

317. In drafting the Treaty, India argues, the Parties employed cross-references as a matter of economy and consistency.[455] Paragraph 14 of Annexure D addresses the filling of the reservoir of a Run-of-River Plant by reference to Paragraphs 18 and 19 of Annexure E. The scope of the reference, however, is established by its own terms: Paragraph 14 refers only to the "filling" of Dead Storage—not to its depletion. Accordingly, for India, only the portions of Paragraphs 18 and 19 dealing with filling are relevant to the reference.[456] In India's view, such an interpretation is consistent with other provisions of the Treaty[457] and with the practice

[451] Pakistan's Reply, para. 6.27, referring to Morris Report, p. 13.

[452] Pakistan argues that the relatively small overall reservoir capacity of the KHEP (in comparison with other, much-larger dams) is "irrelevant" because it is based on gross volume only. Instead, the relevant metric should be the relationship between reservoir capacity and annual watershed runoff volume (inflow)—the reservoir's "hydrologic size." Pakistan's Reply, para. 6.28, citing Morris Report, p. 11. Viewed in such terms, the KHEP reservoir is not small; indeed in hydrological terms it is 20 times larger than the reservoir of the NJHEP. Pakistan's Reply, para. 6.29, quoting Morris Report, p. 12.

[453] Pakistan's Reply, paras. 6.30-6.31.

[454] Hearing Tr., (Day 6), 27 August 2012, at 139:24-25.

[455] Hearing Tr., (Day 6), 27 August 2012, at 140:9-20.

[456] India's Counter-Memorial, paras. 7.40-7.41.

[457] Paragraph 17 of Annexure D, India notes, refers to the reservoir of a Run-of-River Plant "being filled in accordance with . . . Paragraph 14." India's Rejoinder, para. 4.63, quoting Treaty, Annexure D, Para. 17 (emphasis added by India).

elsewhere of making prohibitions explicit.[458] Had the drafters contemplated a prohibition on depletion, India argues, it would have been expressly stated.[459]

318. According to India, the existence of distinct rules on depletion for Storage Works (Annexure E), and Run-of-River Plants (Annexure D) is consistent with the different nature of such projects. Run-of-River Plants such as the KHEP require the impoundment of a significantly smaller quantity of water than Storage Works. In the KHEP's design, the volume of water between Dead Storage Level and the spillway gates is small and would require only a few hours to refill with average minimum daily flows.[460] In view of the reduced capacity for Run-of-River Plants to impact downstream flows, India argues, the Treaty allows for greater flexibility in the depletion of the reservoirs of such Plants.[461] Further, India notes, the absence of a rule on depletion in Annexure D is consistent with the Treaty's approach to lost storage capacity. Annexure E prohibits the use of flushing on Storage Works, but Paragraph 23 of that Annexure permits India to construct additional replacement storage.[462] No equivalent provision for Run-of-River Plants exists, suggesting that the Treaty intended the flushing of storage, rather than its replacement, for such Plants.[463]

319. Finally, India rejects Pakistan's allegation that the KHEP is actually an Annexure E Storage Work. The Treaty, India notes, defines a Run-of-River Plant as "a hydro-electric power plant that develops power without the use of Live Storage as an integral part of the Plant, except for Pondage and Surcharge Storage." According to India, this definition does not depend on the overall volume of water impounded by a project, but only on the relationship between Live Storage and the volume of water used in regular power generation.[464] In India's view, the KHEP conforms to that definition.[465] Moreover, the re-design of the KHEP from a Storage

[458] India notes the practice in Paragraph 8 of Annexure D, which provides that "[t]here shall be no outlets below the Dead Storage Level" except under the prescribed conditions. India's Rejoinder, para. 4.64.

[459] India's Rejoinder, para. 4.65.

[460] India's Counter-Memorial, paras. 7.31-7.32, 7.35; India's Rejoinder, para. 4.72, referring to the Schleiss Report.

[461] India's Counter-Memorial, paras. 7.33, 7.42; Hearing Tr., (Day 6), 27 August 2012, at 142:6-21.

[462] Hearing Tr., (Day 6), 27 August 2012, at 143:6 to 144:2.

[463] India's Counter-Memorial, para. 7.38.

[464] India's Rejoinder, para. 4.74.

[465] India's Rejoinder, paras. 4.67-4.68, referring to Pakistan's Memorial, para. 3.9.

Work greatly reduced both the overall and Live Storage volumes of the Plant,[466] and with a capacity to inflow ratio of 0.59 percent, India considers the KHEP consistent with other Run-of-River Plant designs.[467] India also observes that Pakistan itself has "treated, described and objected to aspects of [the] KHEP since 2006 on the basis it is a run-of-river plant."[468]

(d) The Treaty's provisions on low-level outlets

320. Paragraph 8 of Annexure D requires the design of any new Run-of-River Plant to conform to the following criteria:

> [. . .]
>
> (d) There shall be no outlets below the Dead Storage Level, unless necessary for sediment control or any other technical purpose; any such outlet shall be of the minimum size, and located at the highest level, consistent with the sound and economical design and with satisfactory operation of the works.
>
> [. . .]

Pakistan's arguments

321. Pakistan considers that the references to "sediment control" and to "outlets below the Dead Storage Level" in Paragraph 8(d) of Annexure D are "not a permission to deplete below dead storage level; it's simply a permission to have outlets below dead storage level."[469] This distinction is important, because such outlets can—and in Pakistan's view must—be used to control sediment "without drawing down below the dead storage level."[470] Although Pakistan acknowledges that the provision operates with reference to "sound and economical design," Pakistan submits that this cannot "entirely remove the general rule that is in the first part of the provision: minimum size, located at the highest level."[471]

---

[466] The KHEP's design as a Storage Work included 220 MCM of Gross Storage and 173.75 MCM of Live Storage. As a Run-of-River Plant, the KHEP's current design envisages respectively only 18.35 MCM and 7.55 MCM.

[467] India's Rejoinder, para. 4.73.

[468] India's Rejoinder, para. 4.84.

[469] Hearing Tr., (Day 10), 31 August 2012, at 43:10-15.

[470] Hearing Tr., (Day 8), 29 August 2012, at 83:21-22.

[471] Hearing Tr., (Day 4), 23 August 2012, at 190:18-20.

India's arguments

322. According to India, the relevance of Paragraph 8(d) is that it "expressly contemplates two things: both control of sedimentation and outlets below the dead storage level . . . for sediment control."[472] Nowhere in the provision is there any mention of a prohibition on depletion or a requirement of an unforeseen emergency.[473] On the contrary, because "depletion of dead storage would in fact occur for sediment control," and because Paragraph 8(d) expressly permits sediment control, depletion is implicitly permitted by Annexure D.[474] This being the case, India argues, the control of sediment through drawdown flushing "cannot be deemed to be an 'exercise of control over the waters of the Western Rivers.'"[475]

(e) The Treaty's provisions on water flow

323. The chapeau of Paragraph 15 of Annexure D restricts the flow that may be released below a Plant in the following terms:

> Subject to the provisions of Paragraph 17 [excluding periods of filling], the works connected with a Plant shall be so operated that (a) the volume of water received in the river upstream of the Plant during any period of seven consecutive days, shall be delivered into the river below the Plant during the same seven-day period, and (b) in any one period of 24 hours within that seven-day period, the volume delivered into the river below the Plant shall not be less that 30%, and not more than 130%, of the volume received in the river above the Plant during the same 24-hour period.

Pakistan's arguments

324. Pakistan submits that, although Paragraph 15 does not expressly address the release of water from Dead Storage, the practical impact of the flow restrictions is such that "[d]rawdown flushing is . . . severely curtailed (if not prohibited)."[476] According to Pakistan, the rapid depletion of the reservoir to flush it "would contravene paragraph 15 of Annexure D, insofar as 130% or more of the volume received in the river above the Plant within a given 24 hour period was being delivered into the river below the Plant."[477] Pakistan considers this concern to be

[472] Hearing Tr., (Day 6), 27 August 2012, at 138:11-15; *see also* India's Rejoinder, para. 4.49.

[473] Hearing Tr., (Day 6), 27 August 2012, at 138:16-17.

[474] Hearing Tr., (Day 6), 27 August 2012, at 141:5-9.

[475] India's Rejoinder, para. 4.49.

[476] Pakistan's Memorial, para. 6.30.

[477] Pakistan's Reply, para. 6.32.

present irrespective of the season in which drawdown flushing is carried out, and notes that the Treaty does not limit the restrictions on the release of water to any particular season.[478]

India's arguments

325. India accepts that the restrictions under Paragraph 15 of Annexure D on the release of water below a Plant remain applicable, but submits that these restrictions do not prevent drawdown flushing. According to India, given that drawdown flushing would be effected in the high flow season, "the question of any reduced flow does not arise."[479]

(f) The necessity of drawdown flushing

Pakistan's arguments

326. In Pakistan's view, the permissibility of drawdown flushing turns on the interpretation of the specific Treaty provisions discussed in the preceding sections and not on any general test of necessity. Nevertheless, Pakistan briefly addresses India's arguments concerning the necessity of drawdown flushing.[480]

327. Pakistan does not dispute the need for effective sediment management of reservoirs of hydro-electric projects.[481] However, in Pakistan's view, effective sediment management at Run-of-River Plants, including the KHEP, can be accomplished without recourse to drawdown flushing. Relying on the Morris Report, Pakistan explains that sediment management in Run-of-River Plants is routinely achieved by sluicing high sediment loads downstream:

> sediment management in run-of-river facilities was worked out many decades ago by providing large gate capacity which allows sediment to be sluiced through the impounded river during high flow periods. This is achieved by opening the large gates and allowing the river to flow through the impounded river reach at a high velocity.[482]

---

[478] Pakistan's Reply, para. 6.32.

[479] India's Counter-Memorial, para. 7.51.

[480] Pakistan's Reply, paras. 6.10-6.12.

[481] Pakistan's Reply, para. 6.10.

[482] Morris Report, p. 3; Hearing Tr., (Day 2), 21 August 2012, at 113:18-24 (cross-examination of Dr Morris). Pakistan's expert discussed, in particular, the effective use of sluicing at the Kali Gandaki hydro-electric project in Nepal, a run-of-river facility which, like the KHEP, features a high dam design. *See* Hearing Tr., (Day 2), 21 August 2012, at 108:15 to 110:1 (cross-examination of Dr Morris).

328. According to Pakistan, these well-established procedures do not change if a Run-of-River facility is designed to include a high dam rather than a low barrage: "A run-of-river project, . . . if properly designed, would operate as a typical run-of-river facility once the large dead storage volume has become filled with sediment."[483] In the words of Pakistan's expert, the distinction between a barrage and a dam "rests a little bit on semantics"; provided that gates are in place to scour sediment from in front of the intake area, the process of controlling sediment will be the same.[484]

329. In Pakistan's view, the emphasis that India places on drawdown flushing is appropriate only for storage reservoirs.[485] India's case relies primarily on examples of storage reservoirs rather than Run-of-River Plants.[486] The ICOLD recommendations on which India places heavy reliance were developed primarily with the problem of storage dams in mind.[487] Moreover, Pakistan argues, India has understated the substantial environmental impact of flushing.[488] According to Dr Morris, the heavily concentrated sediments released in the course of flushing "can have very large impacts a very long way downstream," as a consequence of which, flushing is restricted or prohibited by regulation in many areas of the world.[489] In Pakistan's view, such negative impacts would need to be assessed in any evaluation of the necessity of drawdown flushing, were it permitted by the Treaty.[490]

330. Turning to the KHEP and the Treaty, Pakistan does not accept that flushing constitutes the only viable means of controlling sediment.[491] As stated by Dr Morris, sluicing would also present "a

---

[483] Morris Report, p. 3.

[484] Hearing Tr., (Day 2), 21 August 2012, at 107:7-12 (cross-examination of Dr Morris).

[485] Pakistan's Reply, para. 6.11; Morris Report, pp. 9, 19.

[486] Pakistan's Reply, para. 6.11.

[487] Morris Report, pp. 3, 9, 18.

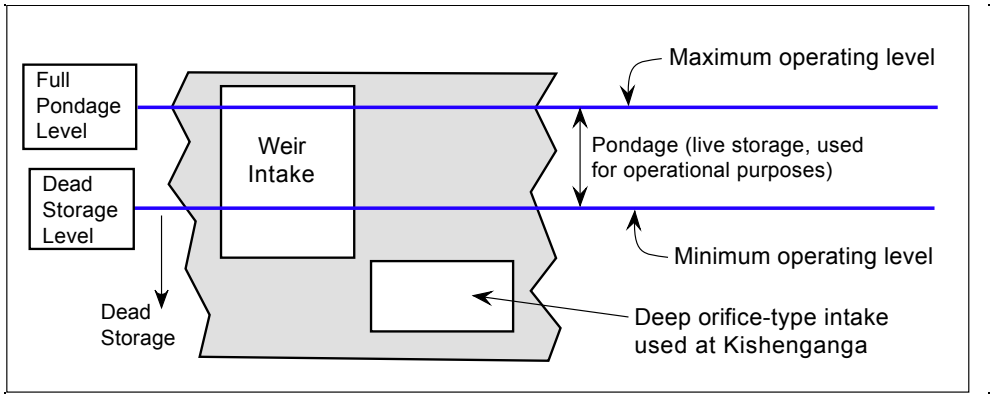
[488] Hearing Tr., (Day 8), 29 August 2012, at 87:8-13.

[489] Hearing Tr., (Day 2), 21 August 2012, at 131:14-16 (Court examination of Dr Morris). Specifically, Dr Morris states that flushing will have a significant impact on downstream aquatic life by clogging the gills of fish, clogging the loose gravel in the bed material, and depleting oxygen levels. *See* Hearing Tr., (Day 2), 21 August 2012, at 132:24-25 (Court examination of Dr Morris); *see also* Hearing Tr., (Day 2), 21 August 2012, at 100:13-15 (cross-examination of Dr Morris).

[490] *See* Hearing Tr., (Day 8), 29 August 2012, at 87:8-13.

[491] Hearing Tr., (Day 8), 29 August 2012, at 90:9-12 ("Pakistan does challenge any conclusion that only drawdown flushing would work at KHEP."); *see also* Hearing Tr., (Day 8), 29 August 2012, at 87:19-21. Pakistan further notes that even India's submissions indicate that excluding flushing would only marginally increase the problem of sedimentation in the KHEP reservoir. *See* Hearing Tr., (Day 8), 29 August 2012, at 88:2-4.

very viable option to examine" for the KHEP that "could function well."[492] With respect to protecting the KHEP intake from sediment, Dr Morris testified that the same result could be achieved with intakes and outlets placed at a higher level (as required by Paragraph 8 of Annexure D to the Treaty). As coarse and abrasive particles tend to be concentrated near the bottom of a reservoir, a Run-of-River Plant will typically use a high-level intake by "establishing a weir running parallel to the flow path which allows only the water from the upper portion of the water column to be withdrawn from the river."[493] For the KHEP, however, India has chosen to use a "deeper orifice-type intake design which also requires significant submergence depth to control the effect of vortices."[494] The Morris Report illustrates the difference between the high level intakes of typical Run-of-River Plants and the KHEP's deep orifice-type intakes by the following diagram:



In effect, having chosen an atypically deep intake design, India then justifies an even deeper outlet by the need to clear sediment from the area of the intake.[495]

India's arguments

331. India submits that no provisions of the Treaty were intended specifically to prohibit the use of drawdown flushing for reservoirs of Run-of-River Plants; the framers of the Treaty did not intend to "freeze" the construction of hydro-electric projects to the technology of 1960. On the

[492] Hearing Tr., (Day 2), 21 August 2012, at 126:22-24 (Court examination of Dr Morris). Under cross-examination, Dr Morris accepted that flushing was also technically feasible and could be considered as an alternative where permitted. *See* Hearing Tr., (Day 2), 21 August 2012, at 100:24-25, 104:11-13, 117:9-10 (cross-examination of Dr Morris).

[493] Morris Report, p. 15.

[494] Morris Report, p. 15.

[495] Morris Report, pp. 14, 15.

contrary, they enshrined a "state-of-the-art" concept in the Treaty through the use of provisions relating to the "sound and economical design and satisfactory construction and operation of the works" and "customary and accepted practice of design."[496] As such, the relevant question for India is whether drawdown flushing in fact represents the state of the art, and whether such techniques are necessary for the KHEP.[497]

332. In India's view, "the state of art today is that '. . . [f]or the control of reservoir sedimentation, bottom outlets should be designed (and operated) to preserve reservoir storage in the long term.'"[498] At the KHEP, India considers that "drawdown flushing is the only effective measure which can ensure sustainability of the pondage."[499] Although technical aspects of the KHEP—in particular the practice of assigning spillways the dual function of flood control and sediment management—are relatively new, India considers that they are in keeping with the provision for low-level outlets included in the Treaty.[500]

333. Elaborating on this argument, India notes that sediment management is essential for the sustainability of any hydro-electric project. The absence of effective sediment management rapidly leads to the loss of capacity of reservoirs and the abandonment of hydro-electric projects,[501] and conservation of storage is especially crucial in light of the "diminishing availability of suitable, environmentally acceptable and economically viable sites."[502] Thus, the ICOLD Code of Ethics enjoins engineers to "take great care, during operation of the scheme, to extend the life to the maximum extent possible and especially as regards the management (prevention of removal) of sedimentation."[503] India and Pakistan, as members of ICOLD, are in

---

[496] India's Counter-Memorial, para. 7.52; India's Rejoinder, paras. 4.94-4.95.

[497] India's Counter-Memorial, para. 7.59.

[498] India's Counter-Memorial, para. 7.59, quoting ICOLD, Bulletin 115, "Dealing with reservoir sedimentation," 1999, (Annex IN-TX-1), p. 79.

[499] Hearing Tr., (Day 6), 27 August 2012, at 161:24 to 162:1, quoting Schleiss Report, p. 7.

[500] India's Rejoinder, para. 4.100.

[501] India's Counter-Memorial, paras. 7.60-7.63, referring to Alessandro Palmieri, *Sustainability of Dams – Reservoir Sedimentation Management and Safety Implications* (World Bank, 1998), (Annex IN-TX-2); Yang Xiaoqing, "Manual on Sediment Management and Measurement," World Meteorological Organization Operational Hydrology Report No. 47, WMO-No. 948 (2003), (Annex IN-TX-3), para. 7.76; India's Rejoinder, para. 4.88, referring to Schleiss Report, pp. 6-7.

[502] India's Counter-Memorial, para. 7.64.

[503] India's Counter-Memorial, para. 7.65, quoting ICOLD Code of Ethics, adopted at the 74th Executive Meeting, Sitges, June 2006, (Annex IN-TX-4).

India's view "morally committed" to following this tenet.[504] Controlling sediment is also essential to ensure that the water drawn in by the intake is free from sediments to avoid damage to the turbines and sediment deposits in the head-race tunnel.[505]

334. According to India, drawdown flushing, when it involves bringing the water level of the reservoir close to the original riverbed level, is an effective and internationally recognized method for sediment management.[506] This is confirmed in modern literature,[507] as well as by ICOLD Bulletin 115[508] and the experience of a variety of hydro-electric projects across the world.[509] In India's view, the ICOLD recommendations are not limited to Storage Works, but expressly apply to any dams exceeding 15 metres in height, regardless of whether they involve storage or Run-of-River projects; this includes the KHEP, with its 37-metre dam design.[510] Accordingly, India considers the Morris Report incorrect in stating that drawdown flushing is required in Storage Works only. Drawdown flushing is also necessary in high-head Run-of-River Plants because the latter are often built in mountain regions on steep rivers that are endangered by sedimentation.[511] In fact, India notes, drawdown flushing is considered particularly efficient for small reservoirs with a low capacity/inflow ratio.[512]

---

[504] India's Counter-Memorial, para. 7.66.

[505] India's Counter-Memorial, para. 7.85; Schleiss Report, p. 5.

[506] India's Counter-Memorial, para. 7.81; *see also* Hearing Tr., (Day 3), 22 August 2012, at 67:21-68:6, 78:19-25, 82:21-25.

[507] India's Counter-Memorial, paras. 7.98, 7.81, referring to W.R. White, "World Water: Resources, Usage and the Role of Man-Made Reservoirs" (March 2010), (Annex IN-TX-7), and to R. White, "Evacuation of sediment from reservoirs," (Annex IN-TX-8).

[508] ICOLD, Bulletin 115, "Dealing with reservoir sedimentation," 1999, (Annex IN-TX-1), paras. 4.1.2, 7.1.

[509] According to India, successful drawdown flushing operations were carried out at the Baira (India), Gebidem (Switzerland), Gmund (Austria), Hengshan (China), Honglinggjin (China), Mangahao (New Zealand), Naodehai (China), Palagneda (Switzerland), Santo Domingo (Venezuela), Cherry Creek (U.S.A.), Dashidaira (Japan), Roseires (Sudan), Three Gorges (China), and Welbedacht (South Africa) reservoirs. India's Counter-Memorial, paras. 7.81-7.82, referring to E. Atkinson, The Feasibility of Flushing Sediment from Reservoirs, Report OD137 (November 1996), (Annex IN-TX-10), p. 2; para. 7.82, referring to Record of the 96th Meeting of the Commission, New Delhi, 1-2 June 2005, (Annex PK-31), p. 5; para. 7.102. India also mentions that the NJHEP envisages drawdown flushing on a "much larger scale" than the KHEP. India's Counter-Memorial referring to the Pakistani Water and Power Development Authority (WAPDA), (Annex IN-79).

[510] India's Rejoinder, para. 4.77.

[511] Schleiss Report, p. 2.

[512] India's Rejoinder, paras. 4.75-4.78, referring to W. Rodney White, "Flushing of Sediments from Reservoirs," Contributing Paper to the World Commission on Dams, (Annex IN-TX-9), p. vi; Schleiss Report, p. 5; K.G. Rangaraju, "Critical Appraisal of the Report of Dr Morris," 14 May 2012.

335. With respect to the KHEP, India notes that sedimentation problems are particularly acute in the Himalayan rivers such as the Kishenganga/Neelum, due to climatic, tectonic and geological factors.[513] Contrary to the suggestions made in the Morris Report,[514] India does not accept that a Run-of-River project will operate without adverse effect once the Dead Storage has filled with sediment. In India's view, this assertion ignores the fact that sediments do not accumulate along a horizontal plane, but settle simultaneously in the Dead and Live Storage, a fact Dr Morris acknowledges in another document.[515]

336. Based on its calculations, India submits that "it is imperative to carry out regular flushing [at the KHEP] to minimize sedimentation and loss of storage capacity as well as to maintain the favourable sediment environment near the power intake."[516] Modelling exercises carried out by both India and Pakistan[517] illustrate the benefits drawdown flushing would have for the KHEP.[518] In contrast, India argues, the use of non-drawdown methods of sediment management such as sluicing through an ungated or crest-gated spillway would present difficulties—both technically and in terms of conformity with the Treaty.[519] In India's view, this would not change with a higher level of intake and outlets, or with the use of a small barrage/weir intake.[520] The latter method is used exclusively at low-head Run-of-River Plants with limited

---

[513] India's Counter-Memorial, paras. 7.67-7.68.

[514] Morris Report, p. 3.

[515] India's Rejoinder, para. 4.96, referring to Gregory L. Morris and Jiahua Fan, *Reservoir Sedimentation Handbook: Design and Management of Reservoirs, Dams, and Watersheds for Sustainable Use*, Electronic version 1.01, September 2009, (Annex IN-135). For example, in 31 years of operation, the Tarbela reservoir in Pakistan lost 33.30 percent of its Dead Storage and 27.22 percent of its Live Storage. India's Counter-Memorial, paras. 7.72-7.73, referring to Izhar-ul-Haq & S. Tanveer Abbas, "Sedimentation of Tarbela & Mangla Reservoirs," Paper No. 659, Pakistan Engineering Congress, 70th Annual Session Proceedings, 2006, (Annex IN-TX-6), p. 28.

[516] India's Counter-Memorial, para. 7.92.

[517] Pakistan's Memorial, Hagler Bailly Pakistan, Water Matters, Southern Waters & Beuster, Clarke and Associates, "Kishenganga/Neelum Water Diversion: Environmental Assessment," May 2011, pp. 334-336. India's Counter-Memorial, paras. 7.88-7.91.

[518] India's Counter-Memorial, paras. 7.86-7.91.

[519] The Indian Commissioner explained at the 100th and 101st meetings of the Commission that an ungated spillway was not an option due to the site conditions, including the narrowness of the Gurez Valley, the geology, and the design flood and sediment. With a crest-gated spillway, the outlets in the dam would have had to be placed lower than those of the KHEP and the gates would have had a discharge capacity of 140 percent of the river flow. These features could have invited Pakistan's objections under the Treaty. India's Counter-Memorial, paras. 7.83-7.84, referring to Record of the 100th Meeting of the Commission, Lahore, 31 May–4 June 2008, (Annex PK-34), p. 24; Record of the 101st Meeting of the Commission, New Delhi, 25–28 July 2008, (Annex PK-35), p. 10; India's Rejoinder, paras. 4.98, 4.106.

[520] India's Rejoinder, paras. 4.107-4.108, referring to the Schleiss Report, pp. 4-5.

storage.[521] Effective sediment management requires that the spillway be as close as possible to the riverbed to create river-like flow conditions allowing the maximal displacement of sediments. The intake must, on the one hand, be above the level of the spillway to avoid being affected by sediments. At the same time, the intake must be sufficiently submerged to avoid vortex formation and air entrainment into the intake as well as to ensure pressure flow in the head-race tunnel.[522]

337. In evaluating its design options, India accepts that, as the upstream State, it must examine any design options submitted to it by the downstream State. Nevertheless, India is entitled to "give preference to the solution contained in its own scheme provided that it takes into consideration in a reasonable manner the interests of the [downstream] State."[523] For India, the KHEP's spillway outlets, as currently designed and located, are consistent with sound and economical design.[524]

(g) The *Baglihar* expert determination

338. The *Baglihar* expert determination, issued on 12 February 2007 by Professor Raymond Lafitte, a neutral expert appointed under Annexure F to the Treaty, addressed a number of differences between the Parties with respect to the Baglihar hydro-electric project located on the Chenab River. Among other issues, the Neutral Expert considered the conformity of the design of the Baglihar project's low-level sluice spillway with Paragraph 8(d) of Annexure D to the Treaty.[525]

339. In this context, the Neutral Expert stated the following:

> Sound operation of the outlets will necessitate carrying out maintenance of the reservoir with drawdown sluicing each year during the monsoon season. The reservoir level should be drawn down to a level of about 818 m asl, that is to say 17 m below that of the Dead

[521] Schleiss Report, p. 2.

[522] Schleiss Report, pp. 3-4.

[523] India's Counter-Memorial, para. 7.92, referring to *Lake Lanoux*, (Annex IN-14), para. 23.

[524] Schleiss Report, p. 4.

[525] *Baglihar* Determination, (Annex PK-230), pp. 92-100. Paragraph 8(d) of Annexure D to the Treaty provides as follows:

> There shall be no outlets below the Dead Storage Level, unless necessary for sediment control or any other technical purpose; any such outlet shall be of the minimum size, and located at the highest level, consistent with sound and economical design and with satisfactory operation of the works.

> Storage Level. For this level, the free flow discharge is the annual flood of the order of 2,500 m^3/s. This is in conformity with Annexure D, Part 1, 2(a) of the Treaty, which provides that "'Dead Storage' means that portion of the storage which is not used for *operational purpose*". Operational purpose refers to power generation (and this is impossible for the Dead Storage because of the high level of the power intake). The reservoir drawdown below the Dead Storage Level will be done for *maintenance purposes*. It is commonly agreed in practice that maintenance is an absolute necessity, with its ultimate objective of ensuring the *sustainability of the scheme*.[526]

340. The Parties disagree as to the relevance of this section of *Baglihar* to the Court's consideration of the Second Dispute.

Pakistan's arguments

341. At the outset, Pakistan submits that it is not seeking to appeal *Baglihar*, but only to show that this Expert determination is not binding upon the Court with respect to the Second Dispute.[527] For Pakistan, *Baglihar* could have no more than persuasive value although, for the reasons stated in the preceding sections, Pakistan disagrees with the reasoning of the Neutral Expert.[528]

342. Pakistan points out that, pursuant to the explicit terms of Paragraph 11 of Annexure F to the Treaty, the decision of a neutral expert is "final and binding" on the Parties and a court of arbitration only "in respect of the particular matter on which the decision is made." *Baglihar* concerned a different matter from the one presently before the Court as it involved a different hydro-electric project (the Baglihar project rather than the KHEP) on a different river (the Chenab rather than the Kishenganga/Neelum).[529]

343. While acknowledging that the issue of the Neutral Expert's competence "is not a matter for this Court to decide," Pakistan nevertheless asserts that, in deciding on the permissibility of drawdown flushing under the Treaty, the Neutral Expert exceeded his competence.[530] Pakistan's principal complaints are that the Parties did not refer to the Neutral Expert any difference concerning drawdown flushing and that Pakistan did not have an opportunity to address the issue. In support, Pakistan provides a brief account of *Baglihar*'s procedural

[526] *Baglihar* Determination, (Annex PK-230), p. 100.

[527] Pakistan's Memorial, para. 6.24; Pakistan's Reply, para. 6.6.

[528] Hearing Tr., (Day 4), 23 August 2012, at 195:1-8.

[529] Pakistan's Memorial, para. 6.25; Pakistan's Reply, para. 6.6.

[530] Pakistan's Memorial, para. 6.28; Pakistan's Reply, para. 6.7.

history, which it submits is confirmed by India's own narrative of the course of those proceedings.[531]

344. According to Pakistan, the Parties made their submissions on the basis that the Baglihar project would be operated without drawdown flushing, assuming that the Treaty prohibited this technique.[532] The Neutral Expert's draft determination, which was communicated to the Parties for their comments prior to the issuance of the final determination, also proceeded on the basis that drawdown flushing was prohibited under the Treaty.[533] India for the first time asserted that drawdown flushing was permitted in its written comments on the draft determination, which were not communicated to Pakistan, and in the oral hearing that followed.[534] At the hearing, India only outlined the arguments "it would have made" were the question of drawdown flushing before the Neutral Expert. Pakistan therefore correctly did not seek to respond to these arguments immediately, but reserved its position on the matter.[535] Nevertheless, the Neutral Expert reversed his conclusion on drawdown flushing in his final determination, without giving Pakistan the opportunity to respond to the positive case made by India.[536]

345. Pakistan concludes that being outside the Neutral Expert's competence, the *Baglihar* determination cannot be properly regarded as "final and binding," nor given any weight.[537]

346. In any event, Pakistan submits that the Neutral Expert's reasoning is unpersuasive and his conclusion with regard to the permissibility of drawdown flushing under the Treaty—

---

[531] Pakistan's Reply, para. 6.7, referring to India's Counter-Memorial, paras. 7.19-7.26; Hearing Tr., (Day 4), 23 August 2012, at 196:13 to 197:14.

[532] Pakistan's Memorial, para. 6.26, referring to *Baglihar* Determination, (Annex PK-230), p. 96, which excerpts the Parties' respective memorial and counter-memorial in that case; *Baglihar* transcript, 28 May 2006, (Annex PK-233), pp. 138-139; *Baglihar* transcript, 19 October 2006, (Annex PK-232), p. 33; Hearing Tr., (Day 4), 23 August 2012, at 179:17-25; Hearing Tr., (Day 8), 29 August 2012, at 92:14 to 93:15.

[533] Pakistan's Memorial, para. 6.27, referring to Raymond Lafitte, *Baglihar*, "Final Draft Determination by the Neutral Expert," 30 October 2006, (Annex PK-231), pp. 88-89.

[534] Pakistan's Memorial, para. 6.27, fn. 232, referring to *Baglihar* transcript, 8 November 2006 (Annex PK-234), p. 264; Hearing Tr., (Day 8), 29 August 2012, at 93:16-24.

[535] Pakistan's Memorial, para. 6.27, fn. 232; Pakistan's Reply, para. 6.8; Hearing Tr., (Day 8), 29 August 2012, at 93:23 to 94:7, referring to *Baglihar* transcript of 8 November 2006 (Annex PK-234).

[536] Pakistan's Memorial, para. 6.27.

[537] Pakistan's Memorial, para. 6.28, fn. 233; Hearing Tr., (Day 8), 29 August 2012, at 96:20-21.

erroneous.[538] In particular, the Neutral Expert erred in according priority to India's concerns about sedimentation over the wording of the Treaty.[539]

India's arguments

347. In its Counter-Memorial, India argues that the Second Dispute constitutes an appeal of the *Baglihar* determination and, as such, is not admissible for consideration by the Court. India points out that Pakistan challenges the Neutral Expert's competence and the correctness of his decision.[540]

348. In its Rejoinder, India submits that it seeks to rely on *Baglihar* not as a "binding" precedent, but as only "a relevant and applicable precedent . . . dealing with similar facts and law; and therefore one that obviously sheds authoritative light . . . on the interpretation of the provisions in question."[541] In this regard, India contends that relying on precedents is a "desirable and universally accepted practice."[542] At the hearing, India referred to *Baglihar* as an "authoritative precedent."[543]

349. With regard to the procedure in *Baglihar*, India explains that the Neutral Expert invited the Parties' comments on a draft of his determination "as a courtesy" and "[a]s is usual in the relationship between engineers."[544] His draft determination prompted India to re-examine its position on the interpretation of Paragraph 2(a) of Annexure D to the Treaty and submit its new views to the Neutral Expert by way of comments.[545] Pakistan chose not to reply to India's new argument.[546] The Neutral Expert then issued his final determination, deciding without referring to any of the submissions made before him by the Parties, "in the light of his own experience and understanding of the modern technical processes of generating power from hydroelectric

---

[538] Pakistan's Memorial, paras. 6.29-6.33; Hearing Tr., (Day 4), 23 August 2012, at 195:7-15.

[539] Pakistan's Memorial, para. 6.31, referring to J. Briscoe, "War or Peace on the Indus?" *The News*, 3 April 2010, (Annex PK-229), pp. 1-2; Hearing Tr., (Day 4), 23 August 2012, at 195:16 to 196:5.

[540] India's Counter-Memorial, paras. 7.17, 7.27.

[541] India's Rejoinder, paras. 4.44.

[542] India's Rejoinder, para. 4.44.

[543] Hearing Tr., (Day 6), 27 August 2012, at 126:14-22.

[544] India's Counter-Memorial, para. 7.19, quoting *Baglihar* Determination, (Annex PK-230), p. 4.

[545] India's Counter-Memorial, paras. 7.20-7.23.

[546] India's Counter-Memorial, para. 7.24.

projects."[547] The Neutral Expert's conclusions reflected his concern that without drawdown flushing, the Baglihar project would by all accounts last no more than two decades.[548]

C. THE RELEVANCE OF TERRITORIAL CLAIMS

350. The Parties disagree as to whether Pakistan, in the course of this arbitration, has improperly invoked the Treaty in support of any territorial claims it may have in Pakistan-administered Jammu and Kashmir, thus violating Article XI(1) of the Treaty.

351. Article XI(1) of the Treaty provides:

> (1) It is expressly understood that
>
> (a) this Treaty governs the rights and obligations of each Party in relation to the other with respect only to the use of the waters of the Rivers and matters incidental thereto; and
>
> (b) nothing contained in this Treaty, and nothing arising out of the execution thereof, shall be construed as constituting a recognition or waiver (whether tacit, by implication or otherwise) of any rights or claims whatsoever of either of the Parties other than those rights or claims which are expressly recognized or waived in this Treaty.
>
> Each of the Parties agrees that it will not invoke this Treaty, anything contained therein, or anything arising out of the execution thereof, in support of any of its own rights or claims whatsoever or in disputing any of the rights or claims whatsoever of the other Party, other than those rights or claims which are expressly recognized or waived in this Treaty.

Pakistan's arguments

352. In Pakistan's submission, Article XI of the Treaty was adopted so as to allow the Treaty to regulate the rights and obligations of the Parties with respect to the use of the waters of the *entire* relevant area of the Indus system of rivers, including those parts of it located in Pakistan-administered and India-administered Jammu and Kashmir, while avoiding the underlying dispute over these territories.[549]

---

[547] India's Counter-Memorial, paras. 7.25-7.26.

[548] Hearing Tr., (Day 9), 30 August 2012, at 109:12 to 111:6.

[549] Hearing Tr., (Day 1), 20 August 2012, at 25:18-27:10; Hearing Tr., (Day 3), 22 August 2012, at 162:1-11, 166:2-12, quoting Niranjan Das Gulhati, *Indus Waters Treaty: an exercise in international mediation* (Allied Publishers, 1973), p. 263 ("In the light of the disagreement between India and Pakistan on the status of Jammu and Kashmir, it was agreed that effort be made to write the treaty in such manner as to bypass the problem of Jammu and Kashmir"); Hearing Tr., (Day 7), 28 August 2012, at 1:22-4:15.

353. Pakistan agrees with India that Article XI(1) of the Treaty prevents the Parties from invoking the Treaty in support of any territorial claims that they may have over Pakistan-administered or India-administered Jammu and Kashmir, and submits that it has complied with this provision.[550] Specifically, in presenting arguments concerning the alleged adverse impact of the KHEP on the territory of Pakistan-administered Jammu and Kashmir, Pakistan has not invoked the Treaty improperly.[551] This is because the Parties' rights and obligations under the Treaty with respect to the use of the waters of the Indus system of rivers extend to uses made in territories, such as Pakistan-administered and India-administered Jammu and Kashmir, that are under the factual control of one of the Parties.[552] The opposite interpretation would create a gap in the Treaty.[553] During the negotiation of the Treaty, this interpretation was confirmed by the World Bank, advised by an English barrister, Sir John Foster. Pakistan put the following question to the Bank:

> It is the intent that –
>
> (a) The rights and obligations of India under the Treaty shall extend to acts and omissions in, or affecting, that portion of Jammu and Kashmir that is under the control of India.
>
> (b) The rights and obligations of Pakistan under the Treaty shall extend to acts and omissions in, or affecting, the remainder of Jammu and Kashmir.
>
> (c) The Treaty shall not affect the respective positions taken by the Parties in the dispute over Jammu and Kashmir.
>
> Question: Does the present draft accomplish the foregoing?[554]

354. In response to this question, Pakistan was assured that its fears were "ill-founded."[555] Pakistan therefore submits that it is entitled to argue that the KHEP will have an adverse impact on areas located in Pakistan-administered Jammu and Kashmir.[556]

---

[550] Pakistan's Reply, paras. 2.15-2.17.

[551] Pakistan's Reply, paras. 2.18-2.20a.

[552] Pakistan's Reply, para. 2.20b. Pakistan adds that in any event it represents Pakistan-administered Kashmir for purposes of the Treaty, and that such representation is opposable to India. Hearing Tr., (Day 3), 23 August 2012, at 167:14 to 169:18.

[553] Hearing Tr., (Day 1), 20 August 2012, at 25:25 to 26:4; Hearing Tr., (Day 7), 28 August 2012, at 13:7-21.

[554] Pakistan's Reply, para. 2.20c, quoting Memorandum Regarding Questions to be put to John Foster Esq. (Annex PK-241).

[555] Pakistan's Reply, para. 2.20c, quoting Telegram from G. Mueenuddin, Pakistan's chief negotiator, to "Foreign Rawalpindi," 15 April 1960, (Annex PK-242).

[556] Pakistan's Reply, paras. 2.18-2.20a.

355. Finally, Pakistan submits that in accordance with Article XI(1) of the Treaty, India's arguments concerning the validity of Pakistan's and India's claims over Pakistan-administered Jammu and Kashmir are not a proper subject for adjudication by the Court.[557] In any event, Pakistan rejects all of India's arguments regarding the juridical status of Pakistan-administered Jammu and Kashmir.[558]

India's arguments

356. India claims that there is "an important territorial element" in the present case.[559] It points out that all the areas which would, according to Pakistan, be adversely affected by the KHEP, whether in terms of hydro-electric or agricultural use, or environmentally, are located in Pakistan-administered Jammu and Kashmir.[560] It further contends that Pakistan-administered Jammu and Kashmir is not legally a part of Pakistan.[561] On this basis, India argues that Pakistan is invoking the Treaty to support its claims in the territory of Pakistan-administered Jammu and Kashmir and to dispute India's claims in the same territory. In so doing, Pakistan is in direct violation of Article XI(1)(b) of the Treaty.[562]

357. In addition, in India's view, it has no obligation under the Treaty to avoid adverse impact on territories that do not form part of Pakistan, as the Treaty does not apply to regions that are only under Pakistan's *de facto* control.[563] India recalls that during the negotiation of the Treaty, Pakistan proposed a provision that would have extended the application of the Treaty to "all of the territories which at the time are under [a Party's actual control]" and that this provision was

[557] Pakistan's Reply, para. 2.22.

[558] Hearing Tr., (Day 7), 28 August 2012, at 11:16-22.

[559] India's Counter-Memorial, para. 1.32.

[560] India's Counter-Memorial, paras. 1.34, 2.65-2.66.

[561] India's Counter-Memorial, paras. 1.34-1.38, 1.42; India's Rejoinder, paras. 1.94-1.95; Hearing Tr., (Day 5), 24 August 2012, at 46:1-21.

[562] India's Counter-Memorial, paras. 1.33, 6.49; India's Rejoinder, paras. 1.93, 1.99; Hearing Tr., (Day 5), 24 August 2012, at 47: 4-22, 48:14 to 49:17.

[563] India's Counter-Memorial, paras. 1.43, 2.66; India's Rejoinder, para. 1.105; Hearing Tr., (Day 5), 24 August 2012, at 48:8-13, referring to VCLT, Art. 29. India adds that Pakistan-administered Kashmir is not a party to the Treaty and is not represented in the Treaty by Pakistan. Hearing Tr., (Day 5), 24 August 2012, at 45:12-18; Hearing Tr., (Day 9) 30 August 2012, at 3:23 to 7:11.

rejected by India and excluded from the final text of the Treaty.[564] While Pakistan alleges that it received confirmation from the World Bank that the Treaty would apply to Pakistan-administered and India-administered Jammu and Kashmir, India notes that in support of this allegation, Pakistan mostly cites internal correspondence of Pakistan, which does not form part of the *travaux préparatoires* of the Treaty. In addition, Pakistan appears to be relying on an interpretation made not by the World Bank, but by Sir John Foster, retained to answer certain questions of the World Bank.[565]

[564] India's Counter-Memorial, paras. 1.39-1.40, 2.63-2.64, quoting World Bank's list of riders proposed by India and Pakistan for inclusion in draft text, rider No. 11 (Pakistan), 24 November 1959, (Annex IN-49); India's Rejoinder, paras. 1.96-1.98.

[565] India's Rejoinder, paras. 1.102-1.103.

IV. ANALYSIS OF THE COURT

358. At the outset of its analysis, the Court considers it appropriate to note the extraordinary contribution of the World Bank to the conception, mediation, negotiation, drafting and financing of the Indus Waters Treaty, an instrument critical to the life and well-being of hundreds of millions of people of India and Pakistan. The conclusion of the Indus Waters Treaty in 1960, in which the leaders and staff of the World Bank lent vital support to the Parties, was and remains a great achievement of international cooperation.

A. THE TERRITORIAL SCOPE OF THE TREATY

359. In the course of these proceedings, the Parties have advanced arguments concerning the status of Pakistan-administered and India-administered Jammu and Kashmir and have differed over whether and how this Partial Award may bear upon the question of sovereignty over Jammu and Kashmir. Before engaging in an analysis of the two disputes at hand, the Court considers it important to clarify at the outset the scope of its inquiry—and of the Indus Waters Treaty itself—as it relates to the question of sovereignty over Jammu and Kashmir.

360. The Treaty was negotiated and concluded amid difficulties in the relations between India and Pakistan. One of the most profound and sensitive issues between the Parties was (and remains) the question of sovereignty over Jammu and Kashmir. While negotiating the Treaty, the danger that unresolved questions of sovereignty could stand in the way of agreement on the allocation of the waters of the Indus river system was plain to the representatives of the World Bank and the Parties, who clearly sought to craft the Treaty so as to avoid those difficulties. The Court thus has no doubt that the manner in which the Treaty expresses the Parties' respective rights and obligations represents a conscious effort to reach a definitive apportionment of the use of the waters of the Indus system of rivers, while avoiding entirely the matter of sovereignty over the areas through which those waters flow. To this end, the Treaty focuses on the right of each Party to the *use* of some of the waters of the Indus system of rivers without going into the question of sovereignty over the territory of Jammu and Kashmir through which some of those rivers transit.

361. Article XI(1) of the Treaty embodies this approach:[566] although its phrasing makes no reference to any territorial dispute between India and Pakistan, its purpose was precisely to assure the Parties that their respective rights in or claims to disputed territories would remain unaffected by the Treaty.[567] The Treaty "governs the rights and obligations of each Party in relation to the other with respect *only* to the *use of the waters* of the Rivers" and, further, provides that nothing therein "shall be construed as constituting a recognition or waiver . . . of any rights or claims whatsoever of either of the Parties *other than those rights or claims which are expressly recognized or waived in this Treaty*."[568] These terms preclude any effect on the rights or claims of the Parties with respect to anything but the use of the waters.

362. In keeping with the terms and intentions of Article XI(1), this Partial Award does not—and cannot—have any bearing on the rights or claims that either Party may maintain to sovereignty over the territory of Jammu and Kashmir. Nor are such putative rights or claims relevant to the resolution of the disputes placed before this Court. The Court thus finds it unnecessary to set out in detail the arguments put forth by the Parties on the status of Jammu and Kashmir.

363. Having established that this Partial Award can have no bearing on the Parties' territorial dispute over Jammu and Kashmir, the remaining consideration for the Court in this regard is whether

---

[566] In full, Article XI(1) of the Treaty reads as follows:

> (1) It is expressly understood that
>
> (a) this Treaty governs the rights and obligations of each Party in relation to the other with respect only to the use of the waters of the Rivers and matters incidental thereto; and
>
> (b) nothing contained in this Treaty, and nothing arising out of the execution thereof, shall be construed as constituting a recognition or waiver (whether tacit, by implication or otherwise) of any rights or claims whatsoever of either of the Parties other than those rights or claims which are expressly recognized or waived in this Treaty.
>
> Each of the Parties agrees that it will not invoke this Treaty, anything contained therein, or anything arising out of the execution thereof, in support of any of its own rights or claims whatsoever or in disputing any of the rights or claims whatsoever of the other Party, other than those rights or claims which are expressly recognized or waived in this Treaty.

[567] *See* Letter from William A.B. Iliff, the most senior of the World Bank's negotiators, to Niranjan D. Gulhati, India's chief negotiator, 16 June 1959, (Annex PK-246): "My recollection of the understanding reached in the course of our conversations with the Indian authorities in Delhi is that . . . India was concerned that the actual construction by Pakistan of a reservoir at Mangla should not carry any implication that India's sovereign rights in Jammu and Kashmir were in any way or to any degree eroded. India therefore wished to find some formula that would protect her in this respect . . . The general principle underlying the Bank approach was that neither party should, on the one hand, seek to gain, in or from the Water Treaty, any support for its own general position on the Kashmir issue, or, on the other hand, should seek to erode the general position of the other party."

[568] Emphasis added.

the Parties' rights and obligations under the Treaty regarding the use of the waters of the Indus system of rivers extend to those portions of the rivers that flow in disputed territory, including the area in which India is building the KHEP and those reaches of the Neelum Valley that Pakistan contends will be adversely affected by the KHEP's operation.

364. In addressing this question, each Party refers to a different portion of the documentary record of the negotiations preceding the Treaty. Arguing that disputed territories are covered by the Treaty, Pakistan relies on the opinion of Sir John Foster, an eminent English barrister, whose views were sought by the World Bank to reassure the Parties that "the text of the draft of [the] Treaty expresses clearly and correctly [their] intent,"[569] namely, to avoid any indication that the Treaty would affect disputes over sovereign rights in Jammu and Kashmir. For its part, India emphasizes the omission from the final Treaty text of a proposed rider that would have provided that the rights and obligations of each Party under the Treaty "apply to all the territories which at the time were under its actual control."[570] The Court finds the spare negotiating record on this matter to be inconclusive; insofar as Foster did not represent the Parties, his opinion is not determinative of the meaning of Article XI. Nonetheless, the Parties' agreement to the text of this provision in full knowledge of Foster's interpretation may be construed as acceptance of his view. As for the Parties' rejection of the proposed rider, it may be that the Parties simply wished to avoid overt reference to the divisions between them. But it is clear that the Parties shared the view of the World Bank that the Treaty should not and did not affect questions of sovereignty over Jammu and Kashmir.

---

[569] Memorandum Regarding Questions to be put to John Foster Esq., (Annex PK-241). Foster opined that the text of Article XI (then Article X) expressed clearly and correctly the following stated intent of Pakistan:

> (a) The rights and obligations of India under the Treaty shall extend to acts and omissions in, or affecting, that portion of Jammu and Kashmir that is under the control of India.
>
> (b) The rights and obligations of Pakistan under the Treaty shall extend to acts and omissions in, or affecting, the remainder of Jammu and Kashmir.
>
> (c) The Treaty shall not affect the respective positions taken by the Parties in the dispute over Jammu and Kashmir.

See also Telegram from G. Mueenuddin, Pakistan's chief negotiator, to "Foreign Rawalpindi," 15 April 1960, (Annex PK-242): "In general Foster's opinion was that our fears were ill-founded and the Draft of the Treaty (a) accomplished the common intent and (b) excluded all other matters."

[570] World Bank's list of riders proposed by India and Pakistan for inclusion in the draft text of 24 November 1959, rider no. 11 (Pakistan), (Annex IN-49). The proposal reads, in full:

> The rights and obligations of each of the Parties under this Treaty apply to all the territories which at the time are under its actual control; but neither the provisions of this Treaty nor any steps taken as permitted in this Treaty, or to promote compliance therewith, shall be construed as affecting in any way the positions of the Parties as to the right to exercise such control.

365. The Court recognizes that the text of the Treaty itself, read in context and in light of its object and purpose, is paramount in resolving the disputes brought before it. The Preamble of the Treaty refers to the Parties' desire to attain the "most complete and satisfactory utilisation of the waters of the Indus system of rivers" and states further that the Treaty fixes the rights and obligations of the Parties concerning the use of "these waters." These words are emblematic of the Treaty's intent to apply to the aggregate of the Indus river system and not only to those waters flowing through uncontested territory. The Parties have not pointed to—and the Court has not found—any provision that would exclude from the scope of the Treaty any portion of the waters of the Indus system of rivers that flow through Pakistan and India. Moreover, four of the rivers governed by the Treaty (the Indus, the Jhelum, the Chenab and the Ravi) flow partly through the territory of Jammu and Kashmir. Were the Treaty to exclude these watercourses during their transit of the region, it would fall significantly short of providing the comprehensive solution sought by the Parties for the development and allocation of the waters of the Indus system.

366. For these reasons, the Court finds that the rights and obligations of the Parties under the Treaty extend to their use of those waters of the Indus system that flow through Pakistan and India, including those waters flowing through either Pakistan-administered or India-administered Jammu and Kashmir. Pakistan is therefore entitled to invoke the Treaty, as it does here, to object to the construction of the KHEP as a hydro-electric project located in India-administered territory, by arguing that it will impermissibly affect the flow of the river and uses of the waters thereof (including future uses by the NJHEP) in Pakistan-administered territory.[571]

B. THE FIRST DISPUTE: THE PERMISSIBILITY OF DELIVERING THE WATERS OF THE KISHENGANGA/NEELUM RIVER INTO ANOTHER TRIBUTARY THROUGH THE KHEP

367. The Court now turns to the First Dispute. In essence, the Court has been asked to decide whether India is permitted under the Treaty to deliver the waters of the Kishenganga/Neelum River into another tributary in the course of the operation of the KHEP. Pakistan maintains that the KHEP is not in conformity with the Treaty; the Court's analysis of the specific objections set out by Pakistan follows.

[571] Similar considerations apply in relation to the area of Azad Jammu and Kashmir ("AJK"), where the NJHEP is located and many of the KHEP's adverse effects alleged by Pakistan would occur. India has argued that AJK is a self-governing state and not part of Pakistan under its constitution. Following the Treaty's logic, however, the Court observes that Pakistan has uses of water belonging to the Indus system of rivers in AJK. It is not for the Court to pass upon the relationship between Pakistan and AJK.

1. India's general obligations under Articles III and IV(6)

368. Pakistan argues that the Treaty contains a number of provisions that restrict Indian uses of the Western Rivers in general, regardless of whether they involve hydro-electric power generation. It invokes Article III of the Treaty, which sets out both India's fundamental obligation to "let flow" the waters of the Western Rivers and its right to employ those waters, under certain conditions, for hydro-electric power generation and other uses. Specifically, Pakistan contends that the KHEP does not conform to Article III(2) of the Treaty, which in its view restricts India's use of the Western Rivers (including for hydro-electric power generation) to "the drainage basin thereof." Insofar as the electricity generated by the KHEP would be contributed to India's whole northern grid, Pakistan maintains that such a use will not be restricted to the drainage basin of the Jhelum.[572]

369. In the Court's view, however, Article III(2) restricts what India may do with the waters of the Western Rivers, and not with the products that may be generated from their use. There is no indication in the Treaty that a geographic restriction on the use of electricity or any other product of the use of the waters was intended.

370. Pakistan also invokes India's general obligation to "use its best endeavours to maintain the natural channels of the Rivers" as stipulated in Article IV(6) of the Treaty. Article IV(6) provides as follows:

> Each Party will use its best endeavours to maintain the natural channels of the Rivers, as on the Effective Date, in such condition as will avoid, as far as practicable, any obstruction to the flow in these channels likely to cause material damage to the other Party.

371. As set forth above,[573] Pakistan maintains that by failing to assess adequately the environmental impact of the KHEP's inter-tributary transfer, India has breached its Article IV(6) obligation. Arguing that a thorough assessment of the KHEP's downstream environmental impact is necessary to comply with the "best endeavours" obligation of Article IV(6), Pakistan seeks to demonstrate that the diversion of water at the KHEP will, by significantly reducing the flow in the Kishenganga/Neelum, cause material environmental damage below the Line of Control.

[572] *See* paras. 194-196 of this Partial Award.

[573] *See* paras. 256-256 of this Partial Award.

372. The Court considers that this provision, which is worded in "best endeavours" terms, is obligatory and not merely aspirational in nature. Where the Parties contemplated the latter, they specified so expressly, such as in paragraphs 9 and 10 of Article IV of the Treaty, which provide that "[e]ach Party declares its *intention*."[574] In contrast, the phrase "[e]ach Party *will use its best endeavours*"[575] expresses a stronger commitment.

373. Nonetheless, Article IV(6) bears no direct relevance to inter-tributary transfer as such. On the plain meaning of its terms, Article IV(6) concerns the maintenance of the physical condition of the *channels* of the rivers, and not the maintenance of the volume and timing of the flow of water in these channels. The Court understands the term "channel" in Article IV(6) in its common usage, i.e., to denote the bed of the river, which may or may not be filled with water.[576] Accordingly, the Court sees this provision as mandating the preservation of the natural paths of the rivers (what India calls the "geometry of the channels")[577] in an effort to conserve the rivers' capacity to carry water, thereby protecting the Parties from dry spells and floods. This interpretation is confirmed by the Treaty's *travaux préparatoires.*[578]

374. Further, Article IV(6) does not require the maintenance of the condition of the channels so as to avoid any type of riverbed degradation, but bears more precisely on the avoidance of "any obstruction to the flow in these channels likely to cause material damage to the other Party."[579] While Pakistan has emphasized that by trapping sediment in its reservoir and releasing "sediment hungry" water below the dam, the KHEP may contribute to the erosion of the riverbed,[580] it has not adequately explained what specific *obstructions* to the flow of waters in

---

[574] Emphasis added.

[575] Emphasis added.

[576] *See* the relevant definition of "channel" in *Webster's Third New International Dictionary of the English Language*, unabridged (G & C Merriam Co., 1981): "1 a: the hollow bed where a natural body or stream of water runs or may run"); *Oxford English Dictionary*, online (http://oxforddictionaries.com): "a hollow bed for a natural or artificial waterway: *the river is confined in a narrow channel*" (emphasis in the original). "Riverbed" is defined by Webster's Dictionary as "the channel occupied or formerly occupied by a river" and by the Oxford English Dictionary as "the bed or channel in which a river flows."

[577] India's Counter-Memorial, para. 4.155.

[578] A December 1959 draft of the Treaty shows that Article IV(6) initially provided for the avoidance of obstructions to "the natural flow in the Rivers." Treaty, draft of 9 December 1959, Art. IV(4), (Annex PK-12). This early phrasing could have been taken to refer to the volume of water normally passing through at any given time of year, but was replaced by the present text.

[579] Treaty, Art. IV(6).

[580] Pakistan's Memorial, Tab D, Hagler Bailly Pakistan, Water Matters, Southern Waters & Beuster, Clarke and Associates, "Kishenganga/Neelum Water Diversion: Environmental Assessment," May 2011, p. 2-4.

the Kishenganga/Neelum downstream of the KHEP would be created as a result of its construction and operation.

375. Nor can the KHEP itself be considered an "obstruction" of the kind foreseen by Article IV(6). The general obligation upon both India and Pakistan covering all uses of the Western and the Eastern Rivers under Article IV(6) must yield to the specific Treaty rights of the Parties. The Court cannot accept that Article IV(6) debars the construction and operation of works specifically contemplated by the Treaty. The KHEP was designed and is intended to be operated under the regime of Annexure D, to which the Court now turns.[581]

2. The requirements for Run-of-River Plants under Annexure D

376. The right to generate hydro-electric power (provided that such generation is conducted in accordance with Annexures D or E) is an express exception to India's obligation to let flow the waters of the Western Rivers.[582] Annexure D provides comprehensive criteria for the design and operation of new Run-of-River Plants.

377. As set out in greater detail above,[583] Pakistan submits, first, that Annexure D does not permit the permanent diversion of a tributary of the Jhelum; second, that even if Annexure D does permit such diversion, the KHEP does not qualify as a Plant under Paragraph 15(iii); and, third, that even if the KHEP does qualify as such a Plant, it fails the test of necessity provided in that Paragraph. India counters that the KHEP is permissible and consistent with Paragraph 15 in all respects. The Court will address each issue in turn.

---

[581] The Court would however note that the reference in Article IV(6) to the avoidance of material damage to the other Party, a reference which reappears in Article IV(9), has environmental connotations and lends a measure of support to Pakistan's invocation of contemporary environmental jurisprudence. Article IV(9) provides:

> Each Party declares its intention to operate its storage dams, barrages and irrigation canals in such manner, consistent with the normal operations of its hydraulic systems, as to avoid, as far as feasible, material damage to the other Party.

[582] Treaty, Art. III(2)(d). Pursuant to Paragraph 1 of Annexure D, however, where a new hydro-electric plant is incorporated within a Storage Work, its design, construction, and operation are governed by the provisions of Annexure E to the Treaty.

[583] *See* paras. 199-227 of this Partial Award.

(a) The permissibility of inter-tributary transfers in general

378. Whether Annexure D permits inter-tributary transfers is answered by the plain text of Paragraph 15(iii). This Paragraph provides that "where a Plant is located on a Tributary of The Jhelum . . . , the water released below the Plant may be delivered . . . into another Tributary . . . ," thus allowing the diversion of water from one tributary to another, provided that the works in question fall within the terms of that Paragraph.

379. With respect to the scope of permissible diversion, the Court is not convinced that Paragraph 15(iii) was intended only to permit the occasional diversion of water in the course of operation, rather than diversion as an integral part of the design and operation of a Plant.[584] No such distinction is evident from the text itself. Moreover, whether effected by tunnel or canal, any release of water from one tributary into another will be a major undertaking, involving substantial engineering works constructed at great expense. The Court can see no purpose that would be served by investing in the extensive infrastructure required for transfer, only to carry out such transfers on an occasional basis and in a manner ancillary to the *raison d'être* of a Plant—power generation.

380. This interpretation is consistent with the letter from the Chairman of India's Central Water and Power Commission to India's Ministry for Irrigation and Power dated 16 May 1960, which shows that India was contemplating, at the time the Treaty was concluded, a diversion scheme on the Kishenganga/Neelum River similar to the KHEP as now presented.[585] Although there is

---

[584] *See* Hearing Tr., (Day 1), 20 August 2012, at 15:10 to 16:1.

[585] The CWPC Letter (Annex IN-54) provided the comments of the Power Wing of India's CWPC with respect to the draft of the Treaty under consideration as at 16 May 1960. With respect to the draft of Annexure E and the construction of Storage Works on the Jhelum, the CWPC Letter states in relevant part as follows (emphasis in the original):

> (b) JHELUM (excluding JHELUM main): A note on the preliminary hydro-electric survey for the Indus basin in India was forwarded to Shri R. R. Bahl, the then Joint Secretary, Ministry of Irrigation & Power under my D.O. letter No. 20/1/58-HE, dated the 13th January, 1958. This was also then seen by Shri Gulati and other officers connected with the Canal Water Dispute. As pointed out therein, the only tributary of the Jhelum where storage is required for generation of power is Kishenganga. A 200 ft. high dam at Nail with a catchment area of about 770 sq. miles with a storage of about 0.25 maft. would afford a regulated power draft of 1,000 cusecs which can then be conveyed across the ridge and dropped into lake Wular utilising a total drop of 2740 ft. and yielding a power potential of the order of 300,000 kw at 60% load factor. This regulated power draft can be further utilised, along with the natural flows of the main Jhelum in three power stations at a total head of about 1700 ft. below Baramula. In view of this, a minimum storage of *0.3 million aft* should be secured on the tributaries of the Jhelum for power generation.

no indication in the record that India's projections were shared with Pakistan or raised in the course of negotiations,[586] the CWPC Letter demonstrates that one Party to the Treaty was fully aware of and interested in the power to be generated by such an inter-tributary diversion.[587]

(b) The KHEP as a Run-of-River Plant located on a tributary to the Jhelum

381. Paragraph 15(iii) of Annexure D provides:

> Subject to the provisions of Paragraph 17, the works connected with a Plant shall be so operated that (a) the volume of water received in the river upstream of the Plant, during any period of seven consecutive days, shall be delivered into the river below the Plant during the same seven-day period, and (b) in any one period of 24 hours within that seven-day period, the volume delivered into the river below the Plant shall be not less than 30%, and not more than 130%, of the volume received in the river above the Plant during the same 24-hour period: Provided however that:
>
> […]
>
> (iii) where a Plant is located on a Tributary of The Jhelum on which Pakistan has any Agricultural use or hydro-electric use, the water released below the Plant may be delivered, if necessary, into another Tributary but only to the extent that the then existing Agricultural Use or hydro-electric use by Pakistan on the former Tributary would not be adversely affected.

382. For India to take advantage of the possibility of inter-tributary transfer provided for in Paragraph 15(iii), the KHEP must meet the following three conditions: (1) it must be a Run-of-River Plant; (2) it must be located on a tributary of the Jhelum; and (3) the inter-tributary transfer must be within the terms laid down in Paragraph 15(iii). The Court will consider these three requirements in turn.

383. As to condition (1), "Run-of-River Plant" is a term of art under the Treaty. Following the definition in Paragraph 2(g) of Annexure D, a Run-of-River Plant is "a hydro-electric plant that develops power without Live Storage as an integral part of the plant, except for Pondage and Surcharge Storage." Live Storage, Pondage and Surcharge Storage are themselves defined in

---

[586] In this context, the Court notes that Article 32 of the VCLT was not meant to close the category of supplementary means that may be utilized in treaty interpretation to those enumerated therein. *See HICEE B.V. v. the Slovak Republic*, PCA Case No. 2009-11, Partial Award, 23 May 2011, at paras. 117 and 135.

[587] In light of the significance that the Court accords to the CWPC Letter, the Court does not consider it important that, in 1960, the CWPC apparently contemplated a diversion scheme based on a Storage Work (and raised the issue in the context of its comments on Annexure E), while the Treaty's only express provision on diversion concerns Run-of-River Plants under Annexure D. The relevance of the CWPC Letter is not as a comment on any specific treaty provision, which was part of the draft or was developed thereafter, but rather as an indication of India's interest, as early as 1960, in producing hydro-electricity through the diversion of the Kishenganga River.

Paragraph 2 of the Annexure, and it is not the volume of water impounded, but the volume of water stored for hydro-electric power generation that establishes whether a project constitutes a Run-of-River Plant pursuant to the definition.[588] Bearing these provisions in mind, the Court does not doubt that, although originally conceived as a Storage Work, the KHEP has been designed and notified to Pakistan as a Run-of-River Plant within the meaning of that definition. Pakistan has drawn the Court's attention to documents that have described Run-of-River Plants in other ways, but these descriptions cannot stand against the formal definition given in Annexure D for the purposes of that Annexure.

384. As to condition (2), the comprehensive definition of "Tributary" in Article I(2) of the Treaty encompasses the Kishenganga/Neelum River.[589] There is no dispute between the Parties that the Kishenganga/Neelum is a tributary of the Jhelum. The question is therefore whether the KHEP is "located on" the Kishenganga. On this issue, the Parties have taken very different views.[590] For India, it suffices if part of the works is situated on the river itself, and the decisive criterion is the origin of the water that will be used for the operation of the Plant. For Pakistan, the crux is that the generation of hydro-electricity in the KHEP will take place at a substantial distance (23 kilometres) from the Kishenganga/Neelum River.

385. The arguments raised by Pakistan are serious ones. They put into question whether the KHEP conforms to the natural understanding of what would constitute a Run-of-River Plant. As the Court has pointed out, however, "Run-of-River Plant" is the subject of a specific Treaty definition, so that for all purposes under Annexure D it must be given a "special meaning" of

---

[588] In Annexure D, "Surcharge Storage" is defined as "uncontrollable storage occupying space above the Full Pondage Level" and essentially describes the margin of safety between the maximum ordinary capacity of the reservoir and the parapet of the dam, designed to prevent the dam from being overtopped during extreme floods or in the face of strong wind and wave action (Para. 2(e)). "Pondage" is storage intended to meet variations in the daily and weekly generating loads of the Plant and is regulated by the Treaty by reference to the designed generating capacity of the Plant (*see* Para. 2(c)). Accordingly, for the purposes of the Treaty a "Run-of-River Plant" is any Plant that is not designed to generate power from stored water beyond the volume expressly permitted to be stored and utilized as "Pondage."

[589] Article I(2) of the Treaty reads as follows:

> The term "Tributary" of a river means any surface channel, whether in continuous or intermittent flow and by whatever name called, whose waters in the natural course would fall into that river, e.g. a tributary, a torrent, a natural drainage, an artificial drainage, a *nadi*, a *nallah*, a *nai*, a *khad*, a *cho*. The term also includes any subtributary or branch or subsidiary channel, by whatever name called, whose waters, in the natural course, would directly or otherwise flow into that surface channel.

[590] *See* paras. 210-218 of this Partial Award.

the kind foreseen in Article 31(4) of the Vienna Convention on the Law of Treaties (the "**VCLT**") in place of its "ordinary meaning."[591]

386. The Court notes that, while the terms "Plant" and "works" are both repeatedly used in the Treaty, neither is the subject of a specific Treaty definition either in Annexure D or more generally. The variety of provisions in which the term "Plant" appears, however, shows that the term was intended to cover all aspects of a hydro-electric installation and not merely those components involved in the actual generation of electricity (such as the powerhouse). Paragraph 8 of Annexure D, for instance, expressly deals with the design of a "Plant" and includes restrictions, ranging from the dam and spillway to the need for a regulating basin, that are in no way limited to a particular element of the works. Similarly, Appendix II to Annexure D, which identifies the information that must be shared for any new Run-of-River Plant, requires the provision of a plan "showing dam spillway, intake and outlet works, diversion works, head-race and forebay, powerhouse, tail-race and Regulating Basin." This demonstrates, in the view of the Court, that the term "Plant," as employed in Annexure D, is apt to describe the entirety of an installation such as the KHEP.

387. That being so, the Court sees no warrant under the Treaty for disaggregating the elements that comprise an installation such as the KHEP, designed to operate as an integrated whole and to serve a single purpose, namely, the generation of hydro-electricity. The works that trap and channel the water feeding the KHEP are *a fortiori* located on the Kishenganga. While the Court would not go so far as to endorse the argument that any Plant must necessarily be regarded as "located on" the watercourse from which it draws water, it has no hesitation in reaching the conclusion that, for the specific purposes of Paragraph 15(iii) of Annexure D, the KHEP must be regarded as "located on" the Kishenganga, which is in turn a tributary of the Jhelum.

388. Turning now to condition (3), the Court observes that the requirement that inter-tributary transfer must be within the terms of Paragraph 15(iii) comprises two elements: the criterion of "necessity" (which will be dealt with in the following section) and the place into which the water delivered from the Kishenganga/Neelum is released after passing through the KHEP powerhouse. Pakistan submits that, in delivering water from the turbines into the Bonar Nallah, the KHEP is not delivering the "water released below the Plant" "into another Tributary" as foreseen in Paragraph 15(iii).

[591] Article 31(4) of the VCLT provides: "A special meaning shall be given to a term if it is established that the parties so intended."

389. The Court is unconvinced by Pakistan's argument that this water must first be released back into the Kishenganga/Neelum below the dam before it may permissibly be delivered into another tributary of the Jhelum. The additional restriction would make no operational sense. Paragraph 15(iii), moreover, refers to water "released below the Plant," not to water "released below the dam." In the Court's understanding of the term "Plant," water released from the KHEP tail-race into the Bonar Nallah is undoubtedly released below the Plant. It is simply the case that here, there is not one watercourse but two flowing below (or downstream of) the Plant into which water may be released. Similarly, the Court cannot accept that the phrase "into another Tributary" was intended to mean anything other than another tributary of the Jhelum. There is no textual basis for concluding that the second use of the term "Tributary" in Paragraph 15(iii) differs from the first and refers exclusively, as Pakistan suggests, to tributaries of the Kishenganga/Neelum itself.

(c) The criterion that inter-tributary transfers must be "necessary"

390. Having concluded that Paragraph 15(iii) permits diversion, and that the KHEP is generally in keeping with the type of scheme envisaged therein, the Court turns to the question of whether such diversion is "necessary." This analysis initially raises a further question: necessary for what? Before proceeding, the Court finds it useful for the light it may throw on the Parties' underlying intention to recall how the term entered into the draft of the Treaty.

391. The record put before the Court shows that the word "necessary" was added at a very late stage. In the World Bank's draft of 6 June 1960, inter-tributary transfer was dealt with in the following terms:

> (c) where a Plant is located on a Tributary of The Jhelum on which Pakistan has any Agricultural Use or hydro-electric use the water released below the Plant may not be delivered into another Tributary if the then existing Agricultural Use or hydro-electric use by Pakistan on the former Tributary would be adversely affected.[592]

392. In the final text of the Treaty, the language had become the following:

> (iii) where a Plant is located on a Tributary of The Jhelum on which Pakistan has any Agricultural use or hydro-electric use, the water released below the Plant may ~~not~~ be delivered, <u>if necessary</u>, into another Tributary <u>but only to the extent that</u> ~~if~~ the

[592] Treaty, draft of 6 June 1960, (Annex PK-22), Annexure D, para. 15(iii).

> then existing Agricultural Use or hydro-electric use by Pakistan on the former Tributary would not be adversely affected.[593]

393. The record shows that this change was proposed by India, but does not indicate the reasons underlying the change. The Court feels justified in assuming, all the same, that India's purpose was to underline that it had a right (albeit not an unlimited one) to undertake inter-tributary transfers; this would explain why the provision was changed from a negative construction into a positive one.

394. The change of form entailed certain drafting problems, however. In the first place, there was the question of the tributaries to which the provision would apply. Here the drafters left the wording unchanged: "where a Plant is located on a Tributary of The Jhelum on which Pakistan has any Agricultural Use or hydro-electric use." The literal effect of this phrase might now appear to be—to the eyes of a reader coming fresh to the final text—that India's right to make inter-tributary transfers at all only came into being once Pakistan had established some use on the downstream reaches of that tributary. Such a result would be so contrary to plain common sense that the Court would in any case rule it out *in limine.* Once the negotiating background described above is considered, it becomes plain that a description of the relevant tributaries which made perfect sense as part of a provision in negative form cannot have been intended to have a radically restrictive effect when the provision was recast in positive form. The very purpose of changing into the positive form was to emphasize the right, not to curtail it.

395. The second drafting problem arising out of the change of form was evidently one to which the drafters did pay specific attention. The change from a provision constructed as a double negative, i.e., a prohibition qualified by an exception, into a permission seems to have been thought to require the introduction of some kind of qualification to indicate that the permission was not an absolute one. The device chosen was the limiting phrase "if necessary." It served to indicate that the change to the positive, permissive form was not intended to turn inter-tributary transfer into the rule, but to leave it as something that had to be justified by the exigencies of each particular case. Once this is understood, it becomes easier to attribute the proper meaning to the words chosen.

396. Paragraph 15(iii) thus provides that "the water released below the Plant may be delivered, if necessary, into another Tributary." In this formulation, the relevant action for which necessity

[593] Modifications from the 6 June 1960 draft indicated.

is to be determined is the delivery of water—not the act of constructing a new Run-of-River Plant. As no specific purpose is identified against which necessity could be evaluated, the Court concludes that necessity is to be determined by reference to the purpose for which the water is to be delivered into another tributary; in the case of the KHEP, this purpose is the generation of hydro-electric power. The Court therefore concludes that the relevant question for the interpretation of this element of Paragraph 15(iii) is whether the delivery of water into another Tributary is necessary to generate hydro-electric power.

397. Turning to the threshold for necessity, the Court sees no need to associate this term with indispensability or emergency action, as argued by Pakistan. The concept of necessity appears elsewhere in the Treaty without such connotations, including the provisions of Annexure G interpreted by the Court in its Order on Interim Measures.[594] The Court sees no reason, for purposes of the Treaty, to ascribe to it any special meaning beyond the normal use of the term to describe action that is "required, needed or essential for a particular purpose."[595] The Court considers inapposite the concepts of necessity developed in international trade law, investment law and other special areas. Likewise, the Court finds it inappropriate to import the understanding of necessity as a circumstance precluding wrongfulness under the law of State responsibility.

398. The Court has little difficulty in holding that the delivery of water from the Kishenganga/Neelum to another tributary is required to achieve the purpose of generating hydro-electricity through the KHEP. If, as the Court has decided, the Treaty confers a right on a Party (in this case, India's right to the use of the waters for the purpose of generating hydro-electricity in conformity with Annexure D), it must be taken to be a right that can meaningfully be exercised. It is true that some hydro-electricity can be generated from the natural flow of the Kishenganga/Neelum at Gurez, but in the Court's understanding, no Run-of-River Plant operating without making use of the difference in elevation between the two tributaries of the Jhelum would begin to approach the power-generating capacity of the KHEP. Therefore, diversion is necessary for any attempt to generate hydro-electric power on the scale contemplated by India, and Annexure D imposes no limit on the amount of electric power that

[594] Order on Interim Measures, para. 139.

[595] *Ibid*. The Oxford English Dictionary defines "necessary" as a synonym of "required to be done, achieved, or present; needed" (Concise, 11th ed., 2008). Similarly, the New Oxford American Dictionary provides the following synonyms for "necessary": "required to be done, achieved, or present; needed; essential" (3rd ed., 2010).

India may generate through Run-of-River Plants.[596] This interpretation does not, however, reduce necessity to a mere test of what is desirable, nor does it become a self-judging matter for India alone to evaluate. The Court can imagine situations in which the benefits of including the diversion of water within the scheme of a Run-of-River Plant would be so marginal that such a diversion could not fairly be termed "necessary." In the present case, however, the Court concludes, on the basis of its understanding of the KHEP and its appreciation of the Gurez site, that diversion from that site is, in fact, "necessary" for India to generate significant power.

399. The Court's conclusion on this matter should not be taken to mean that potential downstream harm is irrelevant to the analysis. On the contrary, the Court considers that adverse effects on downstream uses are a central element of Paragraph 15(iii), but one that operates in a different manner from the proportionality test advanced by Pakistan. Where necessity is invoked under customary international law as a circumstance precluding the international wrongfulness of State action, proportionality may properly be considered. In that case, the claim being made is not simply that the acts in question were necessary to protect an essential State interest, but also that such interest is of paramount importance—and therefore sufficient to override the rights and interests of the State that would otherwise be wronged.[597] Viewed in terms of its ordinary meaning, however, "necessary" lacks this additional connotation. As a matter of common sense, it is apparent that certain actions may be necessary to accomplish even very modest purposes, and that such actions do not become any less necessary to their intended purpose if it happens that they also inflict ancillary harm.

3. The interpretation of the "then existing Agricultural Use or hydro-electric use by Pakistan" in Paragraph 15(iii)

400. As the Parties have emphasized,[598] the essence of the First Dispute is a difference of views between the Parties as to the proper interpretation of Paragraph 15(iii) of Annexure D, particularly this provision's requirement that any Indian inter-tributary Run-of-River Plant

[596] Indeed, the Treaty provides in Paragraph 1 of Annexure D that "subject to the provisions of this Annexure," the use by India of the waters of the Western Rivers to generate hydro-electricity "shall be unrestricted."

[597] For this reason, Article 25 of the International Law Commission's Articles on State Responsibility requires both an "essential interest" of the State invoking necessity and consideration of the essential interests of other affected States. *See* Responsibility of States for International Wrongful Acts, UN Doc. A/RES/56/83, 12 December 2001, Art. 25.

[598] Hearing Tr., (Day 1), 20 August 2012, at 14:24 to 15:1 (Counsel for Pakistan): "[T]he case comes down to the interpretation and application of Annexure D, paragraph 15 (iii), which by the end of this case will be engraved on your hearts."

operate "only to the extent that the then existing Agricultural Use or hydro-electric use by Pakistan on the former Tributary would not be adversely affected." What exactly constitutes a "*then existing* Agricultural Use or hydro-electric use" lies at the very centre of the First Dispute.

401. In seeking the proper meaning of Paragraph 15, the Court is guided by the fundamental rules of treaty interpretation as set out in Article 31(1) of the VCLT: "[a] treaty shall be interpreted in good faith and in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose."

(a) The text

402. The Court's interpretation begins with the text of Paragraph 15, and specifically with the ordinary meaning of the terms there used.[599] The provision is reprinted below:

> 15. Subject to the provisions of Paragraph 17, the works connected with a Plant shall be so operated that (a) the volume of water received in the river upstream of the Plant, during any period of seven consecutive days, shall be delivered into the river below the Plant during the same seven-day period, and (b) in any one period of 24 hours within that seven-day period, the volume delivered into the river below the Plant shall be not less than 30%, and not more than 130%, of the volume received in the river above the Plant during the same 24-hour period: Provided however that:
>
> (i) where a Plant is located at a site on the Chenab Main below Ramban, the volume of water received in the river upstream of the Plant in any one period of 24 hours shall be delivered into the river below the Plant within the same period of 24 hours;
>
> (ii) where a Plant is located at a site on the Chenab Main above Ramban, the volume of water delivered into the river below the Plant in any one period of 24 hours shall not be les than 50% and not more than 130%, of the volume received above the Plant during the same 24-hour period; and
>
> (iii) where a Plant is located on a Tributary of The Jhelum on which Pakistan has any Agricultural use or hydro-electric use, the water released below the Plant may be delivered, if necessary, into another Tributary but only to the extent

[599] *Polish Postal Service in Danzig, Advisory Opinion*, [1925] P.C.I.J. Series B, No. 11 (May 16), p. 39 ("It is a cardinal principle of interpretation that words must be interpreted in the sense which they would normally have in their context, unless such interpretation would lead to something unreasonable or absurd."); *Arbitral Award of 31 July 1989 (Guinea-Bissau v. Senegal)*, I.C.J. Reports 1991, p. 53 at p. 69, quoting *Competence of the General Assembly for the Admission of a State to the United Nations, Advisory Opinion*, I.C.J. Reports 1950, p. 4 at p. 8 ("the first duty of a tribunal which is called upon to interpret and apply the provisions of a treaty, is to endeavour to give effect to them in their natural and ordinary meaning, in the context in which they occur."); *Abyei Arbitration (The Government of Sudan/The People's Liberation Army/Movement)*, Final Award, 22 July 2009, *PCA Award Series* (2012), para. 575 ("In accordance with Article 31 of the [VCLT], the Tribunal must interpret the text of the Formula by initially looking at the ordinary meaning of the terms used.").

> that the then existing Agricultural Use or hydro-electric use by Pakistan on the former Tributary would not be adversely affected.

403. Read on its own, Paragraph 15 seems to be operational in character. The text leading to sub-paragraph (iii) delineates a number of operational constraints for new Run-of-River Plants. To begin with, the first sentence of Paragraph 15 states, quite plainly, that "the works connected with a Plant shall be so *operated* that . . ."[600] The remaining part of Paragraph 15's chapeau lays out the operational constraints on a new Run-of-River Plant when it delivers water below the Plant over "any one period" of 24 hours and "any period" of seven consecutive days. Finally, sub-paragraphs (i) and (ii) modify the operational constraints on a Plant located on the Chenab Main above or below Ramban.

404. In the same vein, sub-paragraph (iii) is phrased as an operational provision: its function is to qualify the general operational constraints found in the chapeau of Paragraph 15 where a Plant "is located on a Tributary of The Jhelum on which Pakistan has any Agricultural Use or hydro-electric use." The present tense structure ("*is* located"; "*has*" any agricultural or hydro-electric use)[601] suggests that the determination whether Pakistan has any agricultural or hydro-electric uses should take place throughout the operational life of a Run-of-River Plant, whenever India diverts water through an inter-tributary transfer.

405. Sub-paragraph (iii) then continues with the words "the water released below the Plant may be delivered, if necessary, into another Tributary but only to the extent that the then existing Agricultural Use or hydro-electric use by Pakistan on the former Tributary would not be adversely affected." Here again, the choice of the words "*then existing* Agricultural Use or hydro-electric use"[602] suggests that the sub-paragraph is to be given an operational meaning, as any delivery of water by the KHEP for purposes of power generation can occur "only to the extent" that Pakistan's "then existing" agricultural or hydro-electric uses "would not be adversely affected." The formulation of Paragraph 15(iii) thus lends credence to what has been termed in these proceedings an "ambulatory" interpretation of Paragraph 15.

---

[600] Emphasis added.

[601] Emphasis added.

[602] Emphasis added.

(b) The context

406. Under Article 31(1) of the VCLT, "context" comprises other parts of the Treaty's text, including its Preamble and Annexures.[603] Paragraph 15 cannot be interpreted in a textual vacuum—its location within Part 3 of Annexure D ("New Run-of-River Plants") and, indeed, within the entirety of Annexure D ("Generation of Hydro-Electric Power by India on the Western Rivers") must be taken into account.

407. A review of the context of Paragraph 15 makes clear that the provision is placed within a continuum of design, construction and operation that cannot properly be separated into watertight compartments. Within the context of Part 3 of Annexure D ("New Run-of-River Plants"), Paragraph 15(iii) comes toward the end of an orderly progression beginning with the design restrictions with which India must comply if it wishes to build and operate a new Run-of-River Plant (Paragraph 8). India is required to provide detailed design information to Pakistan (Paragraph 9). Pursuant to Paragraph 9 of Annexure D, for example, India must provide at least six months' advance notice of the design of a new Run-of-River Plant before construction is permitted. This advance notice must be given in writing with the information specified in Appendix II to Annexure D. Appendix II, in turn, requires India to provide Pakistan with key information on the contemplated Plant, including "Particulars of Design" that go into great detail about the Plant and its power-generating capacity. Required disclosure includes "[d]ischarge proposed to be passed through the Plant, initially and ultimately, and expected variations in the discharge on account of the daily and weekly load fluctuations,"[604] and "[m]aximum aggregate capacity of power units (exclusive of standby units) for Firm Power and Secondary Power."[605] India is also required to provide the "[e]stimated effect of proposed development on the flow pattern below the last plant downstream."[606] The Court has no doubt that the foregoing details were placed in these sections of the Treaty to put Pakistan on notice

[603] Under Article 31(2) of the VCLT,

> [t]he context for the purpose of the interpretation of a treaty shall comprise, in addition to the text, including its preamble and annexes:
>
> (a) any agreement relating to the treaty which was made between all the parties in connection with the conclusion of the treaty;
>
> (b) any instrument which was made by one or more parties in connection with the conclusion of the treaty and accepted by the other parties as an instrument related to the treaty.

[604] Treaty, Annexure D, Appendix II, para. 4(h).

[605] Treaty, Annexure D, Appendix II, para. 4(i).

[606] Treaty, Annexure D, Appendix II, para. 5(a).

not only in respect of the *design details* of a new Plant but also in respect of its intended *operational modalities*. Thus, as is clear from early on in Part 3 of Annexure D, a single paragraph can encompass both design and operational provisions.[607]

408. Following Paragraph 9, Pakistan may object to any aspect of the proposed design within three months of receipt of India's information (Paragraph 10). If a question regarding the permissibility of the proposed design arises, "either Party may proceed to have the question resolved" pursuant to the dispute resolution mechanism provided in Article IX(1) and (2) (Paragraph 11). This is the time at which the legality of a particular design can properly be challenged. The following two paragraphs confirm this: in the event of any alteration to the design before or after the Plant comes into operation (Paragraph 12), or should an emergency arise requiring immediate repairs or alterations (Paragraph 13), Pakistan has the express right to question the design changes contemplated or made in accordance with Paragraph 11 and the dispute resolution mechanism set forth in Article IX. Paragraph 13 also marks the point where Annexure D moves into the operational restrictions on new Run-of-River Plants; the operational provisions then continue through to Paragraph 17.[608] Notably, at no point does the sequence of Paragraphs 8 to 12 specify Pakistan's "then existing Agricultural Use or hydro-electric use" as a factor.

409. In the Court's view, the various paragraphs contained in Part 3 of Annexure D must be interpreted in a mutually reinforcing manner to avoid forbidding with one provision what is permitted by others. It would make little sense, and cannot have been the Parties' intention, to read the Treaty as permitting new Run-of-River Plants to be designed and built in a certain manner, but then prohibiting the operation of such a Plant in the very manner for which it was designed. Such an interpretation of the various paragraphs of Part 3 in isolation from one

[607] Beyond Annexure D, the intermingling of design and operational provisions continues. For example, Annexure F, which deals with the competence of the neutral expert, supports the view that Part 3 of Annexure D (of which Paragraph 15 forms part) contemplates both the construction and operational phases in the life of a Run-of-River Plant. Annexure F, Part 1 ("Questions to be Referred to a Neutral Expert") states, in part:

> 1. Subject to the provisions of Paragraph 2, either Commissioner may, under the provisions of Article IX(2)(a), refer to a Neutral Expert any of the following questions:
>
> […]
>
> (12) Whether or not the operation by India of any plant constructed in accordance with the provisions of Part 3 of Annexure D conforms to the criteria set out in Paragraphs 15, 16 and 17 of that Annexure.

[608] Paragraphs 18 to 23 of Annexure D concern "Small Plants," which are not directly relevant to this dispute.

another would render ineffective those provisions that specifically permit the development of hydro-electric power in accordance with the design constraints of Annexure D.

(c) The object and purpose of the Treaty

410. Turning to the object and purpose of the Treaty, the Court notes that the Treaty establishes a regime of qualified rights and priorities in respect of specific uses, which governs the interpretation of Paragraph 15. The Treaty recognizes Pakistan's right to "unrestricted" use of all the waters of the Western Rivers, including the Kishenganga/Neelum.[609] The deliberate division and allocation of the six main watercourses of the Indus system of rivers between the Parties is a defining characteristic of the Treaty. The inevitable conclusion is that Pakistan is given priority in the use of the waters of the Western Rivers, just as India has priority in the use of the waters of the Eastern Rivers.[610]

411. Pakistan's right to the Western Rivers is not absolute since it relates only to those waters of the Western Rivers "which India is under an obligation to let flow under the provisions of [Article III(2) of the Treaty]." The right is subject to expressly enumerated Indian uses on the Western Rivers, including the generation of hydro-electric power to the extent permitted by the Treaty.

412. Article III(1) of the Treaty states:

> Pakistan shall receive for unrestricted use all those waters of the Western Rivers which India is under obligation to let flow under the provisions of Paragraph (2).

In turn, Paragraph (2) provides:

> India shall be under an obligation to let flow all the waters of the Western Rivers, and shall not permit any interference with these waters, *except* for the following uses, restricted . . . in the case of each of the rivers, The Indus, The Jhelum and The Chenab, to the drainage basin thereof:
>
> [. . .]
>
> (d) *Generation of hydro-electric power*, as set out in Annexure D.[611]

[609] Treaty, Art. III(1).

[610] For India's "unrestricted use" of the waters of the Eastern Rivers, *see* Treaty, Art. II(1).

[611] Emphasis added.

Similarly, although the chapeau of Annexure D confirms India's right to generate hydro-electric power on the Western Rivers in language similar to that of Pakistan's unrestricted "let flow" right, it is circumscribed by the terms of Annexure D itself:

> 1. The provisions of this Annexure shall apply with respect to the use by India of the waters of the Western Rivers for the generation of hydro-electric power under the provisions of Article III(2)(d) and, *subject to the provisions of this Annexure*, such use shall be *unrestricted*: . . . [612]

413. Thus, on the one hand, the Treaty establishes that Pakistan enjoys unrestricted use of those waters of the Western Rivers which it is entitled to receive. On the other hand, the Treaty's specifications in respect of India's hydro-electric uses on the Western Rivers are inconsistent with denying to India the capacity to generate electricity from power plants built in conformity with the Treaty. Any interpretation of Paragraph 15 the logical result of which would be to allow Pakistan unilaterally to curtail the ability of such Indian Plants to operate would subvert an important element of the object and purpose of the Treaty.

4. Challenges of the application of Paragraph 15(iii) to the KHEP

414. The Court now turns to the application of Paragraph 15(iii) to the specific case of the KHEP, the first occasion on which India has undertaken to build a Plant the power-generating capacity of which is derived from an inter-tributary transfer between two tributaries of the Jhelum River.

(a) The Parties' approaches to "then existing" uses as applied to the KHEP

415. As discussed at some length above,[613] the *text* of Paragraph 15(iii) lends a measure of support to an ambulatory interpretation—one which would subject the regular operation of Plants to any "then existing" agricultural or hydro-electric use Pakistan may have. However, in the *context* of the KHEP, that analysis requires a measure of qualification: under the overall structure of Annexure D, the general permissibility of any new Run-of-River Plant's design is determined prior to the commencement of that Plant's construction.[614] Once a Plant's design is accepted or acquiesced in as being consistent with the requirements of Paragraph 8 of Annexure D—or is found to be so consistent by a neutral expert or court of arbitration, in the event that

[612] Emphasis added.

[613] *See* paras. 402-405 of this Partial Award.

[614] *See* Treaty, Annexure D, Paras. 8-12.

one Party challenges the legality of the design[615]—the construction of that Plant can proceed as designed. Paragraph 9 requires India to communicate to Pakistan in writing the specific information detailed in Appendix II to Annexure D, "[t]o enable Pakistan to satisfy itself that the design of a Plant conforms to the criteria mentioned in Paragraph 8." Pakistan is thus effectively put on notice, at the time the design is communicated to it, of India's intended uses.

416. Part 3 of Annexure D sets out a deliberate sequence of design restrictions (Paragraphs 8 to 12) and operational constraints (Paragraphs 13 to 17) consistent with the natural cycle of development for hydro-electric (indeed, any large-scale) infrastructure projects: by defining the point at which proposed designs can be fixed, Annexure D gives the State, its creditors, its contractors and all others involved in such projects the stability and predictability that are indispensable for such projects to proceed to construction and operation over a period of years.

417. A strictly ambulatory approach to Paragraph 15(iii) would undermine the progression of design and operations provisions of Annexure D. The several sub-paragraphs of Paragraph 8 would not encompass all the design requirements necessary for India to consider and communicate to Pakistan, and Paragraphs 9-11 would not provide a mechanism that leads to certainty as to the legality of a Plant's design, construction and operation. Notably, as opposed to the clear mechanism provided by Paragraphs 9-11, no such mechanism is found in Annexure D for Pakistan to provide, on an ongoing basis, information as to its "then existing" agricultural and hydro-electric uses of which India would need to take account. Moreover, a fixed point after which a particular design would create a right upon which India could rely would never emerge. Fixing such a point, however, is the evident purpose of the progression of necessary steps set out in Paragraphs 8 to 17 of Annexure D.

418. Looking at the question more broadly by reference to the object and purpose of the Treaty, the Court cannot accept in full the interpretation proffered by either Party. As discussed above, Article III and Annexure D of the Treaty speak of the right of Pakistan to the "unrestricted" use of the waters of the Jhelum and its tributaries and of India's corresponding obligation to "let flow" the waters of the Jhelum. The Treaty allocates the use of the waters of the Western Rivers (including the Jhelum and its tributaries) to Pakistan, curtailing, sometimes quite severely,

[615] Under Paragraph 11 of Annexure D, "[i]f a question arises as to whether or not the design of a Plant conforms to the criteria set out in Paragraph 8, then either Party may proceed to have the question resolved in accordance with the provisions of Article IX(1) and (2)." In turn, Article IX(1) and (2) outlines the various dispute settlement options—Commission, neutral expert, court of arbitration—available to the Parties to resolve a question, difference or dispute.

India's freedom to utilize the waters of the Western Rivers for the generation of hydro-electric power and limiting, for the most part, the use of those waters to certain agricultural uses, and to domestic and non-consumptive uses.[616]

419. On that basis, Pakistan has argued that an ambulatory interpretation of Paragraph 15(iii) of Annexure D is merely an extension of this preference, inherent in the Treaty, with respect to the Western Rivers. Following that line of argument, Pakistan's "then existing" downstream agricultural and hydro-electric uses would be privileged even if, as a result, the KHEP could only be operated during half of the year or less to accommodate the operational requirements of the NJHEP or, equally, the requirements of other subsequent hydro-electric plants to be constructed by Pakistan further downstream. India would enjoy no effective rights to the use of the waters of the Western Rivers for power generation vis-à-vis Pakistan, just as Pakistan has no effective rights to the use of the waters of the Eastern Rivers.[617]

420. However, India points to equally weighty considerations of object and purpose in support of its position. India relies on its express right to use the waters of the Western Rivers, including the Jhelum and its tributaries, to generate hydro-electric power. Under Article III(2) of the Treaty, the generation of hydro-electric power as set out in Annexure D is one of the specified exceptions to the "let flow" principle. And Annexure D's opening paragraph speaks of the "unrestricted" right of India to generate hydro-electric power so long as it is in a manner consistent with Annexure D as a whole.[618] Given the significant rights enjoyed by India as the upstream riparian under customary international law, as well as the natural advantages enjoyed by the upstream riparian, the Court recognizes, in view of the acute need both of India and Pakistan for hydro-electric power, that India might not have entered into the Treaty at all had it not been accorded significant rights to the use of those waters to develop hydro-electric power on the Western Rivers.

421. The Preamble magnifies this tension in the object and purpose of the Treaty: each Party can claim one part of the Preamble to buttress its argument, as the Treaty is "equally desirous" of (1) "attaining the most complete and satisfactory utilization of the waters of the Indus system of rivers," and "the need, therefore," of (2) "fixing and delimiting, in a spirit of goodwill and

---

[616] Treaty, Art. III(2).

[617] *See* Treaty, Art. II(1): "[a]ll the waters of the Eastern Rivers shall be available for the unrestricted use of India, except as otherwise expressly provided in this Article."

[618] Treaty, Annexure D, Para. 1. For the full text of this provision, *see* para. 413 of this Partial Award.

friendship, the rights and obligations of each in relation to the other concerning the use of these waters."

(b) Implications of adopting the "ambulatory" approach

422. If the Court were to adopt Pakistan's "ambulatory" approach, a new inter-tributary Run-of-River Plant could be cleared for construction when its design was consistent with Paragraph 8 of Annexure D; but India would nonetheless be required to yield whenever Pakistan subsequently sought to use the waters. Such an interpretation would have a chilling effect on the undertaking of any inter-tributary project on the Kishenganga/Neelum River as no responsible project proponent, financing creditor or government agency would incur the expense or make the effort to construct a Plant the viability of which would be subject to the unilateral will and action of another party.

423. In the case of the KHEP, its operation—and thus its power-generating capacity and its economic viability—would be perpetually subject to the sword of Damocles. A strictly ambulatory approach might well require the KHEP to shut down for the drier months of the year, given the significantly larger throughput of water at the NJHEP.[619] The future establishment of Pakistani agricultural and hydro-electric uses could require India to direct most or even all of the river's water downstream without being able to reserve any for use by the KHEP during a large part of the year. Hypothetically, were a new Plant to be built by Pakistan at, say, Dudhnial (or at any other point on the Kishenganga/Neelum between the Line of Control and the NJHEP), the KHEP would need to release as much of the Kishenganga/Neelum's water as would be necessary to allow such new Pakistani plants to operate. The upshot is that, under Pakistan's approach, the KHEP could quite easily be rendered inert—or, at the very least, reduced to generating only a small fraction of its design capacity. Such a result would deprive India of a key benefit recognized by the Treaty: the generation of hydro-electric power through an inter-tributary transfer from one tributary of the Jhelum to another.

424. The lack of stability, potential for wastage of resources and incompatibility of Pakistan's approach with the design and construction approval requirements of Annexure D lead the Court

[619] *See* India's Counter-Memorial, para. 5.10 ("With a design discharge of 280 cumec to generate 969 [megawatts], the N-JHEP will require a minimum daily flow of 47 cumec (one-sixth) to cater to four hours (one-sixth of a day) of peaking power.").

to conclude that the strictly ambulatory approach is not reconcilable with the context of Paragraph 15(iii) and the object and purpose of the Treaty when applied to the KHEP. No sound reading of the Treaty's framework for Indian hydro-electric uses on the Western Rivers can foreclose entirely India's ability to generate electricity from a power plant built in accordance with Annexure D.

(c) Implications of adopting the "critical period" approach

425. If Pakistan's preferred approach to Paragraph 15(iii) calls for a dynamic assessment by India of the agricultural and hydro-electric uses of Pakistan whenever water is released by the KHEP, India's competing approach is comparatively static, focusing only on a key moment, or critical date. Simply put, for India, the phrase "then existing use" means that any new development by India is limited by such downstream uses of waters by Pakistan as are demonstrated to exist on the date when India communicates to Pakistan its "firm intention" to proceed with a project.[620]

426. The question of when a particular set of facts concerning a project crystallizes into a "firm intention" is therefore a key consideration in ascertaining the reasonableness of this approach. India maintains that this moment of "firm intention" can be determined by reference to Paragraph 9 of Annexure D (requiring that India provide Pakistan with complete information about its intended design at least six months before beginning construction). Accordingly, India argues that Pakistan's agricultural and hydro-electric uses must be "frozen at the stage when the design is being finalized."[621]

427. The Court has discussed Part 3 of Annexure D, including Paragraph 9, elsewhere in this Partial Award,[622] and agrees that under Annexure D, the date when India proposes its design is an important moment. But as the succeeding paragraphs of Annexure D make clear, notification of design is insufficient to exhibit a "firm intention" to proceed; the three-month period following such notice within which Pakistan may object must be taken into account, as well as the time it may take for questions of the Plant's conformity with the criteria in Paragraph 8 to be resolved through the Treaty's dispute resolution mechanisms (Paragraphs 10-11). Annexure D also acknowledges the possibility of design changes during the construction phase of a Plant, prior to it coming into operation (Paragraph 12(a)). Alterations in the configuration of the Plant may

[620] India's Counter-Memorial, para. 4.139.

[621] India's Counter-Memorial, para. 4.123.

[622] *See* paras. 407-409 of this Partial Award.

equally occur after it comes into operation (Paragraph 12(b)) or in response to emergencies (Paragraph 13).

428. Put in more general terms, the sequence of Paragraphs 9-13 may not in practice reflect the vast and often contradictory record that can attend large infrastructure projects of this nature, with different changes and evolutions in the Plant's design specifications, unforeseen discoveries in the areas to be excavated and tunnelled, and the vagaries of securing proper financing and government approvals. Thus, when faced with an actual project, the moment at which a "firm intention" crystallizes can be very difficult to pinpoint.[623] It would not be wise for the Court to identify *ex ante* any one fact or formula to make this determination. The Court appreciates the difficulty of determining the critical date at any one stage in this continuum of design, financing, government approval, construction, completion and operation. Each project will be unique; its progressive crystallization can be linear or, more often than not, episodic, with redesigns, stops and restarts, changes in contractors and sources of financing, and the like.

429. That said, finding a particular period during which India's right to construct and operate a Run-of-River Plant became vested would be consistent with the framework of Paragraphs 8 to 11 of Annexure D. Rather than focusing on a moment of "firm intention" on the part of India, the Court considers it more appropriate to speak of a "critical period," wherein a cumulation of facts—tenders, financing secured, government approvals in place and construction underway—has achieved a level of certitude indicating that a project will proceed "firmly" as proposed.

430. In identifying the critical period prior to the completion of construction, the Court has deliberately ruled out two other possible points at which crystallization could be said to occur. One moment that could provide near certainty as to when a particular project crystallizes is the date on which construction of a Plant is completed. But setting the critical date at completion of construction could lead to undesirable results by encouraging both States to proceed to build their respective plants in the hopes of winning the race to completion, but with no guarantee that what is being built will be able to be operated as designed. This could lead to an extreme waste in resources and exacerbation of international tensions. At the opposite end of

[623] This critical date or period could be situated at various points in the life of a project: design, public tender, government approvals, securing of financing, breaking of ground for construction, completion of construction. Crucially, apart from the progress being made toward design, approval, construction and completion of the project, the *communication* of each step to the other Party in the manner envisaged by the Treaty is essential, because the other Party must be able to rely on the information provided through the Treaty process in order for the Treaty itself to work as envisaged. One must therefore analyze both the "facts on the ground" and which facts were formally notified to the other Party under the Treaty.

the spectrum between design and operation, selecting as the critical date the time at which design plans are communicated to the other Party is also unsatisfactory. While at this point in time it is possible to give notice to the other Party of an intention to build a Plant, there is no guarantee that that Plant will be completed within the time projected (or ever).

431. Having clarified what the Court considers an appropriate critical reference period in which a Party's intention to proceed with a project becomes established, the Court can now consider the key issue: just as the Court has examined whether a strictly ambulatory approach would lead to unreasonable results (which the Court has concluded it does), the Court must examine the implications of adopting a critical period interpretation for the Parties' respective rights to the use of the waters of the Kishenganga/Neelum. Such an analysis exposes a basic concern in relation both to the text of Paragraph 15(iii) of Annexure D and to the Treaty's object and purpose.

432. Inherent in the critical period approach is the requirement that any new Indian Run-of-River Plant take account of Pakistan's existing agricultural and hydro-electric uses, pursuant to Paragraph 15(iii) of Annexure D.[624] This is a point India does not contest; it believes that at the time India's project crystallized, Pakistan did not—and still does not—have any *existing* hydro-electric uses nor any significant agricultural uses. But such a view begs the question of when a "then existing" agricultural or hydro-electric use crystallizes for Pakistan. Pakistan's uses need to be judged in the same manner as India's. Accordingly, crystallization of Pakistani hydro-electric design plans may create a "freeze" on additional Indian upstream hydro-electric uses. Sustaining an unqualified critical period approach could thus result in a race in which each Party would seek to create uses that would freeze out those by the other. The Court considers that its interpretation of Annexure D (including Paragraph 15(iii)) must minimize, to the greatest extent possible, the implications of a regime for the Kishenganga/Neelum's waters that would result in such a race, in which the first Party reaching the critical period would have the ability to freeze upstream or downstream uses (as the case may be, depending on who the "winner" is).

[624] Presumably, pre-existing agricultural and hydro-electric uses would be one of the objections Pakistan can make to any Indian Plant design brought to it under Paragraph 9 of Annexure D.

(d) The Treaty's balance between the rights of both Parties

433. The Court considers that neither of the two approaches to interpretation discussed above—the ambulatory and critical period approaches—is fully satisfactory. Rather, the proper interpretation of Paragraph 15(iii) of Annexure D combines certain elements of both approaches. The Court is guided by the need to reflect the equipoise which the Treaty sets out between Pakistan's right to the use of the waters of the Western Rivers (including the Jhelum and its tributary, the Kishenganga/Neelum) and India's right to use the waters of those rivers for hydro-electric generation once a Plant complies with the provisions of Annexure D.

434. Pakistan's relevant uses in this context are, in the Court's view, essentially its hydro-electric uses. As for agricultural uses, the Court notes the observation of India—not contradicted by Pakistan—that there are no significant existing agricultural uses of the Kishenganga/Neelum's main river.[625] It appears to the Court that agricultural uses in the Neelum Valley are largely met by the tributary streams that feed the river.[626]

435. Accordingly, the Court considers that its interpretative task consists of two principal elements. The Court must first establish the critical period at which the KHEP crystallized. Consistent with Part 3 of Annexure D (particularly the notice provisions of Paragraph 9), and using the same critical period criteria, the Court must then determine whether the NJHEP was an "existing use" that India needed to take into account at the time the KHEP crystallized. As shown below, the Court's determination of the critical period leads to the conclusion that the KHEP preceded the NJHEP, such that India's right to divert the waters of the Kishenganga/Neelum for power generation by the KHEP is protected under the Treaty.

436. Second, India's right to divert the waters of the Kishenganga/Neelum cannot be absolute. The premise underlying Paragraph 15(iii)—that Pakistan's existing uses are to be taken into account in the operation of India's Plants—remains a guiding principle (albeit not to the preclusive extent of the ambulatory approach). Paragraph 15(iii) protects Pakistan's right to a portion of the waters of the Kishenganga/Neelum throughout the year for its existing agricultural and hydro-electric uses.

---

[625] Hearing Tr., (Day 5), 24 August 2012, at 77:22 to 78:1.

[626] *See* Pakistan's Reply, paras. 4.52-4.57 (discussing the rainfall and snowmelt waters used for agricultural purposes).

5. The import of the Court's interpretation for the construction and operation of the KHEP

(a) India's vested right to build and operate the KHEP

437. The Court faces a difficult task: it must determine which Party has demonstrated not only that it planned its respective hydro-electric project "first," but also that it was the first to take concrete steps toward the realization of those plans. The Court has meticulously reviewed the evidence submitted by both Parties, including internal correspondence, letters between the Parties, the records of the meetings of the Commission and environmental impact assessments.[627] What emerges for both projects is a succession of stops and starts, of plans communicated and plans revised, of permits given but not implemented, of financing purportedly obtained and withheld, of tenders on particular project plans that are not consistent with the final design, and other vagaries. Nonetheless, a decision must be made, and having weighed the totality of the record, the Court concludes that India has a stronger claim to having coupled intent with action at the KHEP earlier than Pakistan achieved the same at the NJHEP, resulting in the former's priority in right over the latter with respect to the use of the waters of the Kishenganga/Neelum for hydro-electric power generation.

438. The Parties differ sharply as to which facts are determinative for this purpose. For Pakistan, India's plans to build a hydro-electric project in accordance with the Treaty must take account of any "planned uses" of the waters at a specific location, once Pakistan is "firmly committed."[628] Pakistan maintains that such a commitment occurred as early as December 1988, when India was made aware that Pakistan was engaged in planning the NJHEP.[629] Pakistan also points to India having requested details about the NJHEP in 1989—"specifically in the context of the determination of 'existing . . . uses'"—which Pakistan then provided in March 1990.[630] For its part, India traces the first mention of the "Kishenganga

[627] The Court's review resulted in consideration of some 120 of the documents offered by the Parties as evidence that it considers relevant; these are mostly found in Volumes 5 and 6 of Pakistan's Memorial and in Volumes 3A and 3B of India's Counter-Memorial.

[628] Pakistan's Reply, para. 5.15.

[629] Pakistan's Memorial, paras. 2.12-2.13, referring to the Pakistani Commissioner's letter to the Indian Commissioner, 22 April 1989, (Annex PK-40): "The waters of [the] Neelum (Kishenganga) River [stand] committed to [the NJHEP]." Pakistan's Reply, para. 3.32.

[630] Pakistan's Reply, para. 3.36.

Hydroelectric Project" to a document produced in 1971,[631] which well pre-dates the initial contemplation of the NJHEP that occurred, in India's view, in 1989.[632] India submits that it had taken steps to demonstrate its "firm intention" to proceed with the KHEP by no later than June 1994, when the finalized information about the KHEP's design (as a Storage Work) was provided to Pakistan.[633] Although Pakistan was only notified in 2005–2006 that the KHEP would proceed as a Run-of-River Plant, India maintains that this change was made to take account of Pakistan's objections to the design as a Storage Work, and that the revised design remains the same in significant respects;[634] thus, India considers this revision irrelevant in determining the point at which its firm intention to proceed was formed.

439. For the Court, however, the critical period cannot be placed in the 1980s and 1990s, as no significant steps beyond the thicket of project plans, intentions and communications occurred within those decades; indeed, from the present vantage point it is quite clear that subsequent developments and changes to the scale of the KHEP and NJHEP plans contradict many aspects of the original plans communicated to the other Party. Whatever factors are involved in determining the critical period *post hoc* and with the benefit of hindsight, this Court cannot endorse the fixing of that period based on any set of plans that, according to the established facts, are not currently under construction at Gurez or Nauseri.

440. Instead of the periods offered by either Party, the Court considers the period after the year 2000 to be the most relevant period. That is when plans and intent began to coalesce in respect of both the KHEP and NJHEP, as they are currently being constructed. The years 2004–2006 were critical for the KHEP as seen from the following chronology:

    (1) By July 2000, India's National Hydroelectric Power Corporation (NHPC) had published a notice of tender ("International Competitive Bidding (ICB) Notice Inviting Tenders")

[631] Hearing Tr., (Day 9), 30 August 2012, at 51:13-21, referring to Letter from the CWPC to the Under Secretary of the Indian Ministry of Irrigation and Power, 13 May 1971, (Annex IN-55); Letter from the Under Secretary of the Power Department of the Government of Jammu & Kashmir to the Indian Ministry of Irrigation and Power, 3 April 1973, (Annex IN-56).

[632] Hearing Tr., (Day 5), 24 August 2012, at 148:15.

[633] India's Counter-Memorial, para. 4.148.

[634] India communicated to Pakistan at the time that "neither the axis of the dam, the location and layout of the project, nor its installed capacity or diversion works have changed. . . [nor has the] delivery of water to Bonar-Madmati Nallah" (India's Counter-Memorial, para. 3.50, quoting Record of the 99th Meeting of the Commission, New Delhi, 30 May to 4 June 2007, (Annex PK-33)).

for the execution of the "Kishenganga Hydroelectric Project (3 x 110 [megawatts])" over the KHEP, which was then conceived as a Storage Work.[635]

(2) By 2002, Pakistan had complained of construction at the KHEP.[636]

(3) In November 2002, an EIA of the KHEP had been completed by India.[637]

(4) By September 2003, a public hearing by the State Pollution Control Border had been conducted to solicit public attitudes to the KHEP project.[638]

(5) By April 2004, India's Ministry of Environment and Forests had provided environmental clearance to the KHEP (as originally designed).[639]

(6) By July 2004, India's Planning Commission had issued "in principle approval" for the KHEP.[640]

(7) In November 2004 and February 2005, the Permanent Indus Commission met specifically on the subject of the KHEP and Pakistan's objections to the project. India

---

635 *See* Pakistani Commissioner's letter to the Indian Commissioner, 11 November 2000, enclosing a copy of a Notice Inviting Tenders, *The Tribune*, 27 July 2000, (Annex IN-95/PK-94).

636 *See* Pakistani Commissioner's letter to the Indian Commissioner, 10 April 2002, (Annex PK-100), stating that Pakistan has learned that India has "started construction" and requesting that India stop construction until the matter is resolved by the Commission.

637 India's Counter-Memorial, vol. 2B, Tab D, Centre for Inter-Disciplinary Studies of Mountain & Hill Environment (CISMHE), University of Delhi, "Environmental Impact Assessment (EIA) of Kishenganga H.E. Project," November 2002.

638 *See* Indian Ministry of Power's letter to the Government of Jammu & Kashmir, 5 May 2005, (Annex IN-72) ("During the public hearing conducted by the State Pollution Control Board at Gurez on 6.9.2003 almost all the public representatives, senior citizens and the public in general opposed the proposed construction of dam for the power project as in their opinion the varied bio-diversity along with ethnic and cultural identity of the inhabitants of the Gurez valley will be totally lost if they are made to migrate to other places.").

639 Indian Ministry of Environment & Forests' letter to the National Hydroelectric Power Corporation (NHPC), 19 April 2004, (Annex IN-103) ("The Environmental Management Plan submitted by NHPC has been examined. The Ministry of Environment and Forests hereby accords environmental clearance as per the provisions of the Environmental Impact Assessment Notification, 1994, subject to strict compliance [with] the terms and conditions as follows . . .").

640 *See* Indian Ministry of Power's letter to the Government of Jammu & Kashmir, 5 May 2005, (Annex IN-72) ("While according in-principle approval for the project in July 2004, the Planning Commission had observed that the specific per mega watt capital investment on the project is much higher than other hydel projects and on account first 5 years, 8% free power will be provided . . . ").

also updated Pakistan on the progress of works, particularly at the Bandipura site.[641] The Commission toured the KHEP site in November 2005.[642]

(8) In the period up to April and May 2005, India revised the KHEP's design, obtained approval for the revised design, and brought the revised design to both India's Cabinet Committee on Economic Affairs and the State Government of Jammu and Kashmir.[643]

(9) In March 2006, the Indian Ministry of Environment and Forests issued a clearance for the KHEP's revised design as a Run-of-River Plant.[644]

(10) In April and then June of 2006, India first notified Pakistan about the reconfiguration of the KHEP and then conveyed the revised design information for the KHEP as a Run-of-River Plant. [645]

441. Juxtaposing the KHEP's progression with developments at the NJHEP, it is clear that the NJHEP was well behind in key aspects of planning and implementation. Approvals for the

---

[641] Record of the 92nd Meeting of the Commission, Lahore, 27-29 November 2004, para. 70, (Annex PK-28). During the 93rd meeting, India's update on the status of the various components of the KHEP included a statement that, as to the Bandipura works, "[e]xcavation for underground works (Power House Complex and adjoining reaches) is in progress. The enabling works related to HRT are also going on" and, as to the Gurez works, that the "diversion tunnel work [was] held up due to climatic reasons and would be resumed in May. The interfering activities (construction activities related to dam and power intake) are yet to be taken up." Record of the 93rd Meeting of the Commission, New Delhi, 9-13 February 2005, (Annex PK-29). Further updates on the KHEP's project were conveyed at the 94th and 96th meetings of the Commission. *See* Record of the 94th Meeting of the Commission, Lahore, 7-12 May 2005, para. 53, (Annex PK-30); Record of the 96th Meeting of the Commission, New Delhi, 1-2 June 2005, (Annex PK-31).

[642] Record of the 104th Tour of Inspection by the Commission, 7-10 November 2005, (Annex PK-37).

[643] *See* Indian Ministry of Power's letter to the Government of Jammu & Kashmir, 5 May 2005, (Annex IN-72) ("In a meeting taken by Principal Secretary to Prime Minister on 19.4.2005, the revised proposal for implementation of Kishenganga HEP was discussed in detail and it was decided that the revised proposal may be taken to PIB/CCEA quickly after obtaining the concurrence of the State Government." Also, "I would request you to kindly consider the revised proposal and convey the concurrence of the State Government at the earliest so that the investment approval of Kishenganga HEP could be expedited.").

[644] Indian Ministry of Environment and Forests' letter to the National Hydroelectric Power Corporation (NHPC), 9 March 2006, (Annex IN-104) ("It is now noted by the Ministry that NHPC propose to reduce the dam height from 77 to 37m, as a result of which the length of reservoir would get reduced from 11.2 km to 4.5 km and area of submergence would get reduced from 7.65 sq.km to 2 sq.km. Only one village would now get affected. As such this revised environment clearance letter is issued in supersession of the earlier environment clearance letter dated 19.4.2004.").

[645] *See* Indian Commissioner's letter to the Pakistani Commissioner, 20 April 2006, (Annex IN-96) ("The Kishenganga Project has now been reconfigured, on the lines mentioned during the 97th meeting as a Run-of-River Hydroelectric Plant with a height of 36m and pondage of 7.6MCM . . . The information about the design of the project is under compilation and will be communicated to you shortly."); Indian Commissioner's letter to the Pakistani Commissioner, 19 June 2006, (Annex IN-97).

NJHEP from Pakistan's Water Resources and Power Development Authority (WAPDA),[646] Pakistan's Economic Coordination Committee[647] and the Pakistani Cabinet were not received until 2007.[648] Funding was still being sought in early that year.[649] And only in January 2008 was a letter of commencement issued[650] with implementation apparently set to start in the second quarter of that year.[651]

442. Thus, within the critical period of 2004–2006, India demonstrated a serious intent to move ahead with the project and took steps to make the KHEP a reality (through a combination of design, tender, financing, public consultations, environmental assessments and, crucially, national and local government approvals) of which Pakistan was aware (either through communications by India at the Commission level or through evidence that the Pakistani Commissioner had obtained independently). This suffices to convince the Court that the KHEP had progressed to a stage of firm intention to proceed before that same point was reached with respect to the NJHEP. While it is clear that there were many "bumps in the road" in the progression of the KHEP—the ineffectiveness of the Commission process in arriving at an

---

[646] "Cabinet Approves 969MW Neelum-Jhelum hydropower project," *Daily Times*, 13 December 2007, (Annex IN-76) ("Water and Power Development Authority (WAPDA) has already approved award of the contract to the lowest bidder i.e. CGGC-CMEC a joint venture on March 9, 2007 at the contract price of Rs 90.885 billion including foreign exchange of $785 million. The Project Director office is established and is operational at Muzaffarabad to execute the project in the site."); Entry for NJHEP on the website of the Pakistan Electric Power Corporation (PEPCO), (Annex IN-78) ("Construction Contract was awarded on July 07, 2007, to M/s CGGC-CMEC Consortium China for implementation of the project at a cost of Rs 90.90 billion including Rs. 46.499 Billions foreign component"); *see also* Entry for the NJHEP on the website of the Pakistani Water and Power Development Authority (WAPDA), (Annex IN-79).

[647] "Cabinet Approves 969MW Neelum-Jhelum hydropower project," *Daily Times*, 13 December 2007, (Annex IN-76) ("Economic Coordination Committee (ECC) of the cabinet had earlier approved the project in April during the current year.").

[648] *Ibid.* ("Federal cabinet on Wednesday formally approved the strategically important Neelum-Jhelum Hydropower project at a revised cost of Rs 128.4 billion with a foreign exchange component of Rs 46.5 billion. The formal approval was made in the federal cabinet meeting chaired by the caretaker Prime Minister Muhammadmian Soomro. The approval cleared the way for the long-awaited construction of the project.").

[649] *Ibid.* ("In order to arrange foreign exchange component of $785 million the government made a presentation to Kuwait Fund management delegation on March 21, 2007 and a formal request has been sent to Economic Affairs division for a further submission to Kuwait Fund.").

[650] Entry for NJHEP on the website of the Pakistan Electric Power Corporation (PEPCO), (Annex IN-78); Entry for the NJHEP on the website of the Pakistani Water and Power Development Authority (WAPDA), (Annex IN-79).

[651] Ijaz Kakakhel, "Financing Neelum-Jhelum hydropower project: Kuwait Fund signs $40.8m loan agreement with Pakistan," *Daily Times*, 26 November 2010, (Annex IN-77) ("The project implementation started in the second quarter of 2008 and was expected to be completed by the end of 2015. However, the formal (official) completion period was 2016.").

orderly resolution of questions in this case being particularly striking to this Court—it is clear that, by 2004–2006, the plans for the KHEP were being finalized. The same cannot be said for the NJHEP.

443. In rendering its decision on this matter, the Court acknowledges that it has the benefit of hindsight and is thus able to establish precedence for the KHEP based on both Plants having already gone through virtually the entire process of a large infrastructure project to the point of ongoing construction. When the Parties stand at an earlier phase of this process and actual construction has not yet begun, the picture will be more opaque. Should similar questions arise in the future concerning a given project or set of projects, the Treaty prescribes a formal procedure designed to bring a measure of order and certainty in the resolution of competing claims, and to questions of propriety of Plant design, *before* construction commences.[652]

444. Article IX foresees that the Parties may reach a bilateral, negotiated solution through the Commission (Art. IX(1)), or (if the Commission cannot resolve the matter) may put a matter before either a neutral expert or court of arbitration (Art. IX(2)). These procedures are designed to achieve resolution before construction of a Project commences; adherence to this process is the best way to avoid the invidious idea that the Parties are in a race to design, construct and operate a hydro-electric plant "first." Indeed, the Court notes that strict and timely adherence to the anticipated process for the resolution of differences and disputes would likely preclude such a race from occurring, as the dispute settlement mechanism would be triggered prior to the expenditure of immense resources for the construction of a Plant.

[652] That procedure is found in Part 3 of Annexure D, and specifically in Paragraphs 9-11 thereof: Under Paragraph 9, India is under the obligation to "communicate to Pakistan, in writing" its project plans for new Run-of-River Plants, as specified in Appendix II to Annexure D. This is explicitly done "[t]o enable Pakistan to satisfy itself that the design of a Plant conforms to the criteria mentioned in Paragraph 8." This is also the point at which objections to the construction and operation of any new inter-tributary Plant on the grounds of adverse effect to the "then existing Agricultural Use or hydro-electric use by Pakistan" ought to be made pursuant to Paragraph 15(iii) of Annexure D. Under Paragraph 10, "[w]ithin three months of the receipt by Pakistan of the information specified in Paragraph 9, Pakistan shall communicate to India, in writing, any objection that it may have with regard to the proposed design on the ground that it does not conform to the criteria mentioned in Paragraph 8." As with Paragraph 9, this three-month period is also the time for Pakistan to lay out, in clear terms, what it considers to be its then existing agricultural and hydro-electric uses. Critically, under Paragraph 11, "[i]f a question arises as to whether or not the design of a Plant conforms to the criteria set out in Paragraph 8, then either Party may proceed to have the question resolved in accordance with the provisions of Article IX(1) and (2)." Thus, should the Parties reach an impasse regarding the existence of agricultural or hydro-electric uses by Pakistan that would require India to re-design or even halt the construction of a Plant (at least as originally proposed), either Party would be able to seek a definitive solution through the Treaty's dispute settlement mechanism.

(b) The preservation of downstream flows

445. India's right under the Treaty to divert the waters of the Kishenganga/Neelum to operate the KHEP is subject to the constraints specified by the Treaty, including Paragraph 15(iii) of Annexure D as discussed above and, in addition, by the relevant principles of customary international law to be applied by the Court pursuant to Paragraph 29 of Annexure G when interpreting the Treaty. As discussed in the following paragraphs, both of these limitations require India to operate the KHEP in a manner that ensures a minimum flow of water in the riverbed of the Kishenganga/Neelum downstream of the Plant.

446. Accepting that the KHEP crystallized prior to the NJHEP under the critical period analysis set out above, Pakistan nonetheless retains the right to receive a minimum flow of water from India in the Kishenganga/Neelum riverbed. That right stems in part from Paragraph 15(iii) of Annexure D, which gives rise to India's right to construct and operate hydro-electric projects involving inter-tributary transfers but obliges India to operate those projects in such a way as to avoid adversely affecting Pakistan's "then existing" agricultural and hydro-electric uses.[653] The requirement to avoid adverse effects on Pakistan's agricultural and hydro-electric uses of the waters of the Kishenganga/Neelum cannot, however, deprive India of its right to operate the KHEP—a right that vested during the critical period of 2004–2006. Both Parties' entitlements under the Treaty must be made effective so far as possible: India's right to divert water for the operation of the KHEP is tempered by Pakistan's right to hydro-electric and agricultural uses of the waters of the Western Rivers, just as Pakistan's right to these uses is tempered by India's right to divert the waters for the KHEP's operation. Any interpretation that disregards either of these rights would read the principles of Paragraph 15(iii) out of the Treaty, to one or the other Party's injury.

447. India's duty to ensure that a minimum flow reaches Pakistan also stems from the Treaty's interpretation in light of customary international law. Under Paragraph 29 of Annexure G of the Treaty,

---

[653] The Court notes that it is quite possible, in view of the particular topography of the region, that the KHEP lies at the only location on the Kishenganga/Neelum where an inter-tributary transfer is economically viable (*see* India's Counter-Memorial, paras. 4.23, 4.70; Pakistan's Reply, paras. 1.4-1.10; India's Rejoinder, paras. 2.42). If this is true, the KHEP may be the only instance in which Paragraph 15(iii) becomes problematic, as any other inter-tributary transfer that may be contemplated on other tributaries of the Jhelum would result in returning waters to the Jhelum Main before crossing the Line of Control, thereby causing no adverse effect to any uses that Pakistan may have.

> [e]xcept as the Parties may otherwise agree, the law to be applied by the Court shall be this Treaty and, whenever necessary for its interpretation or application, but only to the extent necessary for that purpose, the following in the order in which they are listed:
>
> (a) International conventions establishing rules which are expressly recognized by the Parties.
>
> (b) Customary international law.[654]

448. Well before the Treaty was negotiated, a foundational principle of customary international environmental law had already been enunciated in the *Trail Smelter* arbitration. There, the Tribunal held that

> no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.[655]

A broader restatement of the duty to avoid transboundary harm is embodied in Principle 21 of the 1972 Stockholm Declaration, pursuant to which States, when exploiting natural resources, must "ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."[656]

449. There is no doubt that States are required under contemporary customary international law to take environmental protection into consideration when planning and developing projects that may cause injury to a bordering State. Since the time of *Trail Smelter*, a series of international conventions,[657] declarations[658] and judicial and arbitral decisions have addressed the need to

---

[654] In addition to Paragraph 29 of Annexure G to the Treaty, customary rules on treaty interpretation (codified in the VCLT) require that the Court take account of relevant customary international law—including international environmental law—when interpreting the Treaty. *See* VCLT, Art. 31(3)(c) ("There shall be taken into account, together with the context: . . . (*c*) any relevant rules of international law applicable in the relations between the parties.").

[655] 16 April 1938 and 11 March 1941, 13 R.I.A.A. 1905, at 1965. This approach was reaffirmed in subsequent decisions including the *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, I.C.J. Reports 1996, p. 226, p. 242.

[656] *See also* Principle 13, which, however, is phrased in more hortatory terms. Stockholm Declaration of the United Nations Conference on the Human Environment, 16 June 1972, UN Doc. A/CONF. 48/14/Rev 1, 3.

[657] *See* the International Convention for the Regulation of Whaling, 2 December 1946, 161 U.N.T.S. 72; the Convention on Fishing and Conservation of Living Resources of the High Seas, 29 April 1958, 559 U.N.T.S. 285; the African Convention on the Conservation of Nature and Natural Resources, 15 September 1968, 1001 U.N.T.S. 0; the United Nations Convention on the Law of the Sea, 10 December 1982, 1833 U.N.T.S. 397; the ASEAN Agreement on the Conservation of Nature and Natural Resources (not in force), opened for signature 9 July 1985; and the Treaty on European Union, 7 February 1992, 1757 U.N.T.S. 3. The preamble of the 1994 General Agreement on Tariffs and Trade (WTO Agreement), 1867 U.N.T.S. 187, also makes reference to the objective of sustainable development.

manage natural resources in a sustainable manner. In particular, the International Court of Justice expounded upon the principle of "sustainable development" in *Gabčíkovo-Nagymaros*, referring to the "need to reconcile economic development with protection of the environment."[659]

450. Applied to large-scale construction projects, the principle of sustainable development translates, as the International Court of Justice recently put it in *Pulp Mills*, into "a requirement under general international law to undertake an environmental impact assessment where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context, in particular, on a shared resource." The International Court of Justice affirmed that "due diligence, and the duty of vigilance and prevention which it implies, would not be considered to have been exercised, if a party planning works liable to affect the regime of the river or the quality of its waters did not undertake an environmental impact assessment on the potential effects of such works."[660] Finally, the International Court of Justice emphasized that such duties of due diligence, vigilance and prevention continue "once operations have started and, where necessary, throughout the life of the project."[661]

451. Similarly, this Court recalls the acknowledgement by the Tribunal in the *Iron Rhine* arbitration of the "principle of general international law" that States have "a duty to prevent, or at least mitigate" significant harm to the environment when pursuing large-scale construction activities.[662] As the *Iron Rhine* Tribunal determined, this principle "applies not only in autonomous activities but also in activities undertaken in implementation of specific treaties,"[663] such as, it may be said, the present Treaty.

---

[658] The Stockholm Declaration as well as the subsequent Rio Declaration on Environment and Development provide that "environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it." Rio Declaration on Environment and Development, 1992, UN Doc. A/CONF. 151/26/Rev 1 vol. I, 3. More recently, the Johannesburg Declaration on Sustainable Development reaffirmed these values and elaborated on the importance of "sustainable development." World Summit on Sustainable Development (Johannesburg Summit) Report, 26 August – 4 September 2002, UN Doc. A/CONF. 199/20.

[659] *Case concerning the Gabčíkovo-Nagymaros Project (Hungary/Slovakia)*, Judgment, I.C.J. Reports 1997, p. 7, p. 78.

[660] *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, I.C.J. Reports 2010, p. 14, p. 83.

[661] *Ibid.*, at pp. 83-84.

[662] *Arbitration Regarding the Iron Rhine (*"Ijzeren Rijn"*) Railway between the Kingdom of Belgium and the Kingdom of the Netherlands*, Award, 24 May 2005, *PCA Award Series* (2007), para. 59.

[663] *Ibid.*

452. It is established that principles of international environmental law must be taken into account even when (unlike the present case) interpreting treaties concluded before the development of that body of law. The *Iron Rhine* Tribunal applied concepts of customary international environmental law to treaties dating back to the mid-nineteenth century, when principles of environmental protection were rarely if ever considered in international agreements and did not form any part of customary international law. Similarly, the International Court of Justice in *Gabčíkovo-Nagymaros* ruled that, whenever necessary for the application of a treaty, "new norms have to be taken into consideration, and . . . new standards given proper weight."[664] It is therefore incumbent upon this Court to interpret and apply this 1960 Treaty in light of the customary international principles for the protection of the environment in force today.

453. In this context, the Court takes note of India's commitment to ensure a minimum environmental flow downstream of the KHEP at all times. As India's Agent, Secretary to the Government of India's Ministry of Water Resources, declared before this Court during the hearing on the merits:

> So I would like to first assure the court that there will be a minimum environmental flow, and that will be in accordance with our laws.
>
> Number 2: there have been questions of the quantum, how much is India going to release? The NHPC—which is building the KHEP actually—as been in discussion with the Ministry of Environment and Forests on the quantum. Of course, the Ministry of Environment and Forests would like the maximum; there is a discussion going on. But I'd like to assure the court—this is an assurance I am giving—that the minimum environmental flow would not be less than the minimum observed flow of 3.94 [cumecs] at the site.
>
> As per the NESPAK figures which we've analysed, the average flow between the KHEP and [the Line of Control] is 4.1 cumecs. So even if I said 3.9 for the minimum, and I add this 4.1, at the [Line of Control] you would have sufficient flow. There would not be a dry period or any time when there is no water in the river.
>
> I assure the honourable court that we can't leave our territory dry; and since we can't do that, by consequence we can't leave any of Pakistani territory, which comes later on, dry.[665]

454. Similarly, the Court takes note of the statement in Pakistan's Reply that:

> India's contention [that Pakistan is applying a double standard as between its criticism of the KHEP's environmental flow and Pakistan's plans for an environmental flow below the NJHEP] is incorrect because the releases downstream of NJHEP have yet to be fixed, and a further consideration of environmental impacts is now being carried through by the same

[664] *Case concerning the Gabčíkovo-Nagymaros Project (Hungary/Slovakia)*, Judgment, I.C.J. Reports 1997, p. 7, p. 78.

[665] Hearing Tr., (Day 9), 30 August 2012, at 115:3-25.

> international team, applying the same methodology, as with respect to Pakistan's Environmental Assessment of the downstream impacts of the KHEP.[666]

This is an acknowledgment that hydro-electric projects (including Pakistan's projects) must be planned, built and operated with environmental sustainability in mind.

(c) The insufficiency of the data on record to determine a precise minimum downstream flow; the Court's request for further data

455. There is thus no disagreement between the Parties that the maintenance of a minimum flow downstream of the KHEP is required in response to considerations of environmental protection. The Parties differ, however, as to the quantity of water that would constitute an appropriate minimum; thus, the precise amount of flow to be preserved remains to be determined by the Court. The evidence presented by the Parties does not provide an adequate basis for such a determination, lacking sufficient data with respect to the relationship between flows and (1) power generation, (2) agricultural uses, and (3) environmental factors downstream of the KHEP below the Line of Control.[667] Accordingly, the Court finds itself unable, on the basis of the information presently at its disposal, to make an informed judgment as to whether a minimum flow of 3.94 m^3/s (said to correspond to the lowest recorded flow over a 30-year period), which India committed to maintain in its operation of the KHEP, is sufficient to accommodate Pakistan's right under the Treaty and customary international law to the avoidance or mitigation of environmental harm.

456. The Court therefore defers its determination of the appropriate minimum flow downstream of the KHEP to a further, Final Award, to be issued after it has had the benefit of considering further written submissions on the matter from the Parties.

457. In the Final Award, the precise rate of the minimum flow will be fixed. The Parties' use of the waters for hydro-electric and agricultural uses, and the environmental conditions, will never be static, of course; but stability and predictability in the availability of the waters of the Kishenganga/Neelum for each Party's use are vitally important for the effective utilization of

---

[666] Pakistan's Reply, para. 4.48.

[667] The Court recognizes that the Parties have provided significant data, in particular with respect to the generation of hydro-electric power and environmental impacts of the KHEP. These data, however, have been put before the Court only for scenarios in which the KHEP would be allowed to withdraw water either to the maximum possible extent, or not at all. This data analysis does not enable the Court to appreciate the effect of any potential intermediate flow.

rights accorded to each Party by the Treaty (including its incorporation of customary international environmental law).

458. The Parties are requested to provide further data concerning the impacts of a range of minimum flows to be discharged at the KHEP dam on the following:

For India:

a) power generation at the KHEP;

b) environmental concerns from the dam site at Gurez to the Line of Control;

For Pakistan:

a) power generation at the NJHEP;

b) agricultural uses of water downstream of the Line of Control to Nauseri; and

c) environmental concerns at and downstream of the Line of Control to Nauseri.

459. In compiling these further data, the Parties are required to incorporate a sufficient range of minimum flows so as to give the Court a full picture of the sensitivity of the river system.

460. These data should be accompanied by full information on the assumptions underlying these analyses, including those for power generation and environmental concerns, and the associated uncertainty in the Parties' estimates.

461. In addition, the Court would welcome receiving more detailed information on the estimates already put before it by each Party of historical flows at the KHEP dam site, at the Line of Control and at the NJHEP dam site.[668]

462. Finally, the Court would also welcome provision by the Parties of any relevant legislation, regulatory pronouncements or decisions that the Governments of Pakistan and India may have

[668] In the case of Pakistan, these are the daily flow data corresponding to Annexes 3, 4 and 9 of Pakistan's Memorial, vol. 3, Tab B, National Engineering Services Pakistan Limited, "Kishenganga/Neelum River: Hydrology and Impact of Kishenganga Hydroeletric Plant on Energy Generation in Pakistan," April 2011 (covering the period from 1971 to 2004). In the case of India these are daily flow estimates from the KHEP and the Line of Control for the same period. These data should be provided electronically, in Excel format.

respectively issued concerning environmental flow requirements for hydro-electric or similar projects and, in particular, the Government of India for the KHEP.[669]

463. The Parties are requested to provide the foregoing information to the Court by no later than 120 days from the issuance of this Partial Award (i.e., by 19 June 2013). Each Party is invited to then comment on the information submitted by the other Party no later than 60 days thereafter (i.e., by 19 August 2013). After considering these submissions, the Court will issue its Final Award setting forth its decision on this matter, and will exert its best effort to do so by no later than the end of 2013.

C. THE SECOND DISPUTE: THE PERMISSIBILITY OF RESERVOIR DEPLETION UNDER THE TREATY

1. The scope of the Second Dispute

464. In the Second Dispute placed before this Court, the Parties disagree as to whether India may, within the terms of the Treaty, periodically lower the water level in the reservoir at a Run-of-River Plant on the Western Rivers for purposes of sediment control through the procedure known as drawdown flushing.

465. As formulated by Pakistan in its Request for Arbitration and Memorial, the Court is asked to determine:

> Whether under the Treaty, India may deplete or bring the reservoir level of a run-of-river Plant below Dead Storage Level (DSL) in any circumstances except in the case of unforeseen emergency?[670]

466. The terms of the Second Dispute could be understood to relate to the permissibility of reservoir depletion in the abstract.[671] The record, however, both in the Commission and before this Court,

---

[669] In this regard, the Court recalls the Agent of India's statement at the hearing on the merits that the Indian National Hydroelectric Power Corporation (NHPC) and the Ministry of Environment and Forests had undertaken to cooperate to select an appropriate quantum for a minimum environmental flow at the KHEP. Hearing Tr., (Day 9), 30 August 2012, at 115:7-12.

[670] Pakistan's Request for Arbitration, para. 4; Pakistan's Memorial, para. 1.12.

[671] The use of the phrase "except in case of unforeseen emergency" could also be understood to indicate a specific concern with the paragraph of Annexure E (concerning Storage Works) that provides that "[t]he Dead Storage shall not be depleted except in an unforeseen emergency." It may be asked whether this provision applies equally to Run-of-River Plants. The Parties' pleadings make clear, however, that the dispute concerns whether any provision of the Treaty prevents the depletion of the reservoirs at Run-of-River Plants on the Western Rivers below Dead Storage Level for the purpose of drawdown flushing.

indicates that Pakistan's core concern is that India's planned operation of the reservoirs at the KHEP and other, future hydro-electric projects will include depletion below Dead Storage Level for the purpose of flushing accumulated sediment from the reservoir. India, in turn, has confirmed its intention to employ drawdown flushing with respect to the KHEP.[672] Within this context, the Parties' pleadings with respect to the Second Dispute, as well as the relief requested by Pakistan, focus on the permissibility of this procedure.[673] The question facing the Court is therefore whether the Treaty prohibits drawdown flushing by India at the KHEP and at other, future Run-of-River Plants on the Western Rivers.

467. The question presented by the Second Dispute touches upon issues of fundamental concern to both Parties. For Pakistan, because the drawdown flushing of a reservoir necessarily affects the rate and timing of the flow below the dam (increasing the flow as water is released from the reservoir and reducing the flow when the reservoir is subsequently refilled), its prohibition in the Treaty is essential to securing Pakistan's uninterrupted use of the flow of water in the downstream stretches of the Western Rivers, an objective that Pakistan considers to be one of the Treaty's vital aims.[674] In addition, Pakistan is concerned about the impact of the release of sediment into the downstream river environment.[675] In Pakistan's view, the restrictions on

---

[672] India's Counter-Memorial, Appendix 2, paras. 35-37 ("Envisaged Procedure for Carrying Out Drawdown Flushing").

[673] *See* Pakistan's Memorial, para. 6.21 (". . . the legality of drawdown flushing . . . constitutes a central aspect of the [Second Dispute] . . . the central feature of drawdown flushing is that the reservoir will be depleted (drawn down) below the Dead Storage Level"); *see also* the relief sought by Pakistan in relation to the Second Dispute, Pakistan's Memorial, chapter 7 ("Submissions"):

i. a determination that under the Treaty, the water level of the reservoir of a Run-of-River Plant may not be reduced below Dead Storage Level except in the case of an unforeseen emergency, and

ii. a determination that drawdown flushing for the purpose of sediment removal does not constitute an unforeseen emergency, and

iii. a mandatory and permanent injunction restraining India from reducing the water level of the reservoir of the KHEP except in the event of an unforeseen emergency.

[674] Hearing Tr., (Day 4), 23 August 2012, at 154:2-9; *see also* Pakistan's Memorial, paras. 6.2-6.3, 6.22, 6.32; Pakistan's Reply, para. 6.33.

[675] *See* Hearing Tr., (Day 2), 21 August 2012, at 131:17 to 132:7 (Court examination of Dr Morris) ("there are two principal mechanisms by which the sediments released by flushing do create problems. One is oxygen depletion. The sediment has an oxygen demand which is depleted in the water column. Number 2, it has a function of clogging the gills of aquatic organisms, fish and whatever other organisms that require that. And I should say there is a third one: when you release sediment like this, you can get clogging of the gravels on the riverbed. Many species of fish—I'm not familiar with the species in Kishenganga per se, but typically a fish in mountain streams lays eggs in gravels and sands in the bottom, and this deposition of fine material will clog the gravels. It's a tremendous problem throughout the Pacific Northwest with the salmon, for

India's ability to fill and deplete reservoirs give concrete expression to India's obligation under Article III to "let flow" and "not permit any interference with" the waters of the Western Rivers.[676] In India's view, by contrast, the availability of drawdown flushing is central to the meaningful exercise of its right under the Treaty to generate hydro-electric power on the Western Rivers. According to India, drawdown flushing is the most effective sediment management technique available for the KHEP, and the outcome of the Second Dispute will determine India's ability to achieve maximal longevity (and therefore value) for this and other hydro-electric projects.

468. These concerns are heightened by the broad scope of the Second Dispute. While the Parties' disagreement has taken shape in the context of the KHEP's design and India's intention to use drawdown flushing for that reservoir, the Second Dispute, as framed by Pakistan and argued by both Parties, is not limited to the KHEP alone: it concerns India's right to use drawdown flushing at any Run-of-River Plant that India may construct on the Western Rivers in the future.[677] Accordingly, the Court's decision on the Second Dispute will apply to other Run-of-River Plants to be built, as well as to the KHEP.

469. Although it is the Court's duty to decide, as a matter of law, upon the permissibility of drawdown flushing generally under the Treaty, the Court must emphasize that its decision will have no effect on the Parties' rights and obligations in respect of the Baglihar hydro-electric project, as determined by the Neutral Expert in *Baglihar*. In the time since that determination, India has finalized the design of the project and completed construction in reliance upon the Neutral Expert's determination, which it was fully entitled to do. The Neutral Expert's determination has thus quite literally been realized in concrete at Baglihar, and it is not for this Court to revisit fundamental aspects of the design and operation of that Plant. Nor could Pakistan so ask: Annexure F expressly provides that the decision of a neutral expert shall be final and binding "in respect of the particular matter on which the decision is made."[678] Indeed,

---

instance. And they have this impact on the composition of the bed itself."); *see generally* Hearing Tr., (Day 2), 21 August 2012, at 129:17 to 134:2 (Court examination of Dr Morris).

[676] Pakistan's Memorial, para. 6.3c.

[677] *See* Hearing Tr., (Day 10), 31 August 2012, at 44:9-11 (Pakistan's Closing Statement): "I stress again: the key point is that the Second [Dispute] is not about [the Kishenganga River]; it's about all the dams that India may build on the Western Rivers."

[678] Treaty, Annexure F, Para. 11. Paragraph 11 provides in full: "The decision of the Neutral Expert on all matters within his competence shall be final and binding, in respect of the particular matter on which the

Pakistan itself has not sought a reversal of the *Baglihar* determination,[679] nor has it asked for the dismantling of the Baglihar hydro-electric plant.[680] Pakistan has made it clear that it does not purport to appeal the *Baglihar* determination.

470. The effect of a neutral expert's determination is restricted to the elements of the design and operation of the specific hydro-electric plant considered by that Expert.[681] Although India has urged the Court to consider the Second Dispute to have been effectively resolved by *Baglihar*,[682] the Court does not see in Annexure F any indication that the Parties intended a neutral expert's determination to have a general precedential value beyond the scope of the particular matter before him. *Baglihar* is binding for the Parties in relation to the Baglihar project; the present decision, by contrast, is binding in respect of the general question presented in these proceedings.

471. As India has objected to the admissibility of the Second Dispute, the Court will first address India's objections.

2. The admissibility of the Second Dispute

472. The Court begins its analysis of India's objection to the admissibility of the Second Dispute by reference to Article IX of the Treaty, which provides for the settlement of differences and disputes arising in relation to the Treaty as follows:

> (1) Any question which arises between the Parties concerning the interpretation or application of this Treaty or the existence of any fact which, if established, might constitute a breach of this Treaty shall first be examined by the Commission, which will endeavour to resolve the question by agreement.
>
> (2) If the Commission does not reach agreement on any of the questions mentioned in Paragraph (1), then a difference will be deemed to have arisen, which shall be dealt with as follows:

---

decision is made, upon the Parties and upon any Court of Arbitration established under the provisions of Article IX(5)."

679 Pakistan's Memorial, para. 6.24; Pakistan's Reply, para. 6.5. Pakistan also acknowledges that the *Baglihar* Neutral Expert's competence "is not a matter for this Court to decide." Pakistan's Memorial, para. 6.28.

680 *See* the relief sought by Pakistan at note 673 above.

681 Treaty, Annexure F, Para. 11.

682 As characterized by India, the *Baglihar* determination is not legally binding on this Court—in India's words, "reliance is not sought as binding precedent"—but an "authoritative interpretation" of the question presented here that "should be respected by the Parties in a way that would eliminate repetitive examination of the same issue." India's Rejoinder, para. 4.44.

> (a) Any difference which, in the opinion of either Commissioner, falls within the provisions of Part 1 of Annexure F shall, at the request of either Commissioner, be dealt with by a Neutral Expert in accordance with the provisions of Part 2 of Annexure F;
>
> (b) If the difference does not come within the provisions of Paragraph (2) (a), or if a Neutral Expert, in accordance with the provisions of Paragraph 7 of Annexure F, has informed the Commission that, in his opinion, the difference, or a part thereof, should be treated as a dispute, then a dispute will be deemed to have arisen which shall be settled in accordance with the provisions of Paragraphs (3), (4) and (5):

473. The purpose of Article IX is to provide a comprehensive framework for the resolution of disagreements between the Parties arising from the Treaty, either by negotiation (both within the Commission and at the inter-governmental level) or by submitting disagreements to one of two forms of third-party settlement. In this respect, the Court recalls the importance placed in the Preamble of the Treaty on the need to make "provision for the settlement, in a cooperative spirit, of all such questions as may hereafter arise in regard to the interpretation or application of the provisions agreed upon herein."[683]

474. Under Article IX, certain technical differences between the Parties, identified in a defined list in Annexure F of the Treaty, may be referred to a neutral expert, who must be a highly qualified engineer. In general, such technical questions relate either to the application of the Treaty to particular factual circumstances or to the compliance of individual projects with the terms of the Treaty. A matter may also become a "dispute" as defined in Article IX, in which case it may be referred to a court of arbitration, unless it is resolved at the inter-governmental level. Once appointed or constituted, neutral experts and courts of arbitration are both empowered to decide

[683] Treaty, Preamble.

upon their own competence, the former pursuant to Paragraph 7 of Annexure F[684] and the latter pursuant to Paragraph 16 of Annexure G.[685]

475. As set forth above,[686] India raises two objections to the admissibility of the Second Dispute. First, India submits that, except when the Commissioners are in agreement to pursue an alternative course, the Treaty requires a neutral expert to make the initial determination of whether a matter arising between the Parties is a technical difference to be referred to a neutral expert or a dispute to be referred to a court of arbitration, and that Pakistan did not request the appointment of such a neutral expert in this instance. Second, India submits that the subject-matter of the Second Dispute is objectively among the questions consigned to a neutral expert by the list in Annexure F and, moreover, that Pakistan has itself expressed the intention to submit the same issue to a neutral expert. The Court will examine each objection to the admissibility of the Second Dispute in turn.

(a) Whether Pakistan has complied with the procedure of Article IX of the Treaty

476. The Parties' disagreement on the procedure to be followed hinges on the interpretation of Article IX(2)(a), which establishes the circumstances in which a neutral expert is authorized to resolve a "difference" between the Parties. In contrast to that provision, the conditions for the establishment of a court of arbitration are expressed largely in the negative. Except where a neutral expert decides that a matter should instead be referred to a court of arbitration, a difference is deemed to be a "dispute" only if it has not been referred to a neutral expert under

---

[684] Paragraph 7 of Annexure F provides as follows:

> Should the Commission be unable to agree that any particular difference falls within Part 1 of this Annexure, the Neutral Expert shall, after hearing both Parties, decide whether or not it so falls. Should he decide that the difference so falls, he shall proceed to render a decision on the merits; should he decide otherwise, he shall inform the Commission that, in his opinion, the difference should be treated as a dispute. Should the Neutral Expert decide that only a part of the difference so falls, he shall, at his discretion, either:
>
> (a) proceed to render a decision on the part which so falls, and inform the Commission that, in his opinion, the part which does not so fall should be treated as a dispute, or
>
> (b) inform the Commission that, in his opinion, the entire difference should be treated as a dispute.

[685] Paragraph 16 of Annexure G provides as follows:

> Subject to the provisions of this Treaty and except as the Parties may otherwise agree, the Court shall decide all questions relating to its competence and shall determine its procedure. . .

[686] *See* paras. 269-287 of this Partial Award.

the provisions of Article IX(2)(a). In other words, to establish whether it is properly seized of the Second Dispute, the Court must determine whether it was incumbent on either the Indian or the Pakistani Commissioner to refer the matter to a neutral expert.

477. Under Article IX(2)(a), the respective Commissioners exercise two distinct functions: (1) a Commissioner may have an opinion as to whether a difference falls among those that may be referred to a neutral expert; and (2) a Commissioner may request that a difference be referred to such an expert. Viewed in terms of the former function, a Commissioner's opinion as to the proper treatment of the difference can be read to create a procedural requirement: a difference must be referred to a neutral expert if "in the opinion of either Commissioner" it falls within the relevant portion of Annexure F. Alternatively, and viewed in terms of the Commissioners' latter function, the Commissioner's request could be read to act only as a triggering mechanism: a difference that is objectively within the enumerated list shall be referred to a neutral expert "at the request of either Commissioner." The two roles potentially played by these provisions can be seen even more clearly in the 9 December 1959 draft of the Treaty, in which the phrases that now make up Article IX(2)(a) were expressed as successive paragraphs within then-draft Article IX.[687] In making their arguments, however, the Parties have emphasized only the aspects of Article IX(2)(a) that align with the role they respectively ascribe to it.

478. In the Court's view, the conjunction within Article IX(2)(a) of both references manifests the Parties' intention for the Commissioners to exercise a dual role under that Article, both as the initiators of the neutral expert process and a part of a mechanism that requires recourse to a neutral expert in certain circumstances. Article IX(2)(a) thus requires that a difference be referred to a neutral expert if either Commissioner believes that it relates to one of the identified technical matters and prefers that it be resolved by a neutral expert. This requirement only

[687] Draft Article IX as at 9 December 1959 provided as follows:

> (2) If the Commission does not reach agreement, then a difference will be deemed to have arisen, and it shall be dealt with as follows:
>
> (a) any difference which, in the opinion of either Commissioner, relates to one or more of the subjects specified in Annexure F shall be dealt with as provided in Paragraph (3) of this Article;
>
> [. . .]
>
> (3) A difference to be dealt with under this Paragraph shall, at the request of either Commissioner, be settled in accordance with the following provisions:-
>
> [. . .]

becomes effective, however, if a request for the appointment of a neutral expert is actually made. It is insufficient for a Commissioner merely to express the view that a difference would, at some point, be an appropriate matter for a neutral expert.

479. For the Court, this is the natural consequence of the combination, within a single sentence, of the two elements of Article IX(2)(a), and is the only interpretation to give full effect to the words of the Article. The phrase "in the opinion of either Commissioner" serves to guarantee either Party's ability to empower a neutral expert in respect of the many critical technical questions identified in Annexure F. Under Article IX(2)(a), a disagreement regarding the competence of a neutral expert is not a hurdle to appointment; any objection will simply be resolved by the Expert himself. At the same time, the requirement of an actual request is necessary, in the Court's view, to avoid the procedural impasse that could arise, for example, under the formulation recalled in the December 1959 draft: a Commissioner could express the view that a difference fell within Annexure F, thereby unequivocally foreclosing access to a court of arbitration, and yet decline to request a neutral expert to resolve the difference. Such a "pathological clause" (to use the parlance of international arbitration) was commendably avoided in the final version of Article IX.

480. It is undisputed that neither the Indian nor the Pakistani Commissioner requested the appointment of a neutral expert in respect of the subject-matter of the Second Dispute.[688] That suffices to dispense with India's first objection to admissibility. The Court also considers it relevant, however, to note that at no point prior to the commencement of these proceedings did the Indian Commissioner ever express the view that the Second Dispute—nor indeed any of the six questions raised by Pakistan—constituted a difference within the competence of a neutral expert. On the contrary, a review of the records of the 100th, 101st, and 103rd Commission meetings reveals that India variously advanced the positions that the "issues" raised by Pakistan could be the subject of further discussion within the Commission;[689] that "there can be no differences as the design of the KHEP is consistent with the provisions of the treaty";[690] and that, insofar as depletion below Dead Storage Level is a general issue and not specifically

[688] The Court notes that a Commissioner's request must be made through the procedure set out in Paragraph 5(c) of Annexure F of the Treaty. Where no joint appointment is possible, such a request takes the form of a letter from one of the Parties to the World Bank (in default of agreement between the Parties on the selection of another appointing authority), requesting the appointment of a neutral expert. *See* Hearing Tr., (Day 9), 30 August 2012, at 111:14 to 113:4.

[689] Record of the 100th Meeting of the Commission, Lahore, 31 May to 4 June 2008, (Annex PK-34), p. 19.

[690] Record of the 101st Meeting of the Commission, New Delhi, 25-28 July 2008, (Annex PK-35), p. 11.

related to the KHEP, "there is no scope for considering that any difference has arisen."[691] With respect to whether the permissibility of depletion below Dead Storage Level fell within the competence of a neutral expert, however, the Indian Commissioner was consistently silent.

481. In light of this record, sustaining the position India has advanced in these proceedings would require the Court to accept either (1) that the provision for a neutral expert to be appointed where a Commissioner considers such an expert competent operates, in fact, to disable any other procedure (such as resort to a court of arbitration) in the absence of express agreement within the Commission, or (2) that India's current embrace of the neutral expert process suffices to disempower the present Court. In the Court's view, the first interpretation is not sustainable. As confirmed by the Preamble of the Treaty, the purpose of Article IX is to provide for the settlement, "in a cooperative spirit," of differences and disputes through the various specified procedures. In keeping with that goal, Article IX(2)(a) ensures the appointment of a neutral expert where a Party actually requests the appointment of the same. It does not serve to impose—for its own sake—an additional procedural hurdle to access to a court of arbitration. Nor can the Court accept that India's current position in these proceedings, to the effect that the Second Dispute is a matter for a neutral expert, would be relevant under Article IX(2)(a)—even if India were now to request the appointment of such an expert. The Court considers that, having consistently maintained in the Commission that no difference between the Parties existed, India cannot now assert that the Second Dispute is, in fact, a difference after all.

482. In the absence of any indication by India during the key period prior to the commencement of these proceedings that the subject-matter of the Second Dispute was a matter for a neutral expert, and of any request—by either Party—for the appointment of such an Expert, the Court dismisses India's first objection to the admissibility of the Second Dispute.

(b) Whether the subject matter of the Second Dispute can properly be heard by the Court

483. In its second objection to admissibility, India submits that the Second Dispute involves "highly technical issues of a kind prescribed in the Treaty to be dealt with by a Neutral Expert."[692] In approaching India's objection, the Court will first examine its underlying premise—namely,

[691] *Ibid.*, p. 14.

[692] India's Rejoinder, para. 4.41.

that a technical question listed within Part 1 of Annexure F *must* be submitted to a neutral expert.

484. In the Court's view, nothing in the Treaty requires that a technical question listed in Part 1 of Annexure F be decided by a neutral expert rather than a court of arbitration—*except* where a Party so requests (and then only if the neutral expert considers himself competent). With the exception of Article IX(2)(a), which the Court has considered and discussed in the context of India's first objection, recourse to a neutral expert is expressed throughout the Treaty in permissive—not mandatory—terms. Paragraph 1 of Annexure F, which sets forth the questions for which a neutral expert is competent, states that a "Commissioner *may* . . . refer to a Neutral Expert any of the following questions."[693] But nowhere does the Treaty stipulate that only a neutral expert may consider such matters. Instead, Paragraph 2 of Annexure F expressly limits the competence of a neutral expert over technical questions that are joined with a claim for financial compensation,[694] while Paragraph 13 requires that any matter not within his competence that may arise from a neutral expert's decision be resolved as a dispute under Article IX.[695] It is therefore apparent that the Treaty contemplates that technical matters can be dealt with by mechanisms other than that of the neutral expert.

485. Similarly, the Court can identify no Treaty provision that would bar it from considering a technical question, unless a Party had in fact requested the appointment of a neutral expert. Article IX(2)(b), establishing the circumstances in which a "difference" will be deemed a "dispute," operates by reference to the provision preceding it and the existence of a request for the appointment of an expert—and not by reference to Part 1 of Annexure F. Had the Parties so desired, the establishment of a Court could readily have been conditioned on a purely objective test of whether a dispute fell outside the list of identified technical questions; yet the Treaty

[693] Treaty, Annexure F, para. 1 (emphasis added).

[694] Paragraph 2 of Annexure F provides as follows:

> If a claim for financial compensation is raised with respect to any question specified in Paragraph 1, that question shall not be referred to a Neutral Expert unless the two Commissioners are agreed that it should be so referred.

[695] Paragraph 13 of Annexure F provides as follows:

> Without prejudice to the finality of the Neutral Expert's decision, if any question (including a claim to financial compensation) which is not within the competence of a Neutral Expert should arise out of his decision, that question shall, if it cannot be resolved by agreement be settled in accordance with the provisions of Article IX (3), (4) and (5).

does not adopt this approach.[696] Similarly, whereas Annexure F includes Paragraph 7 (directing a neutral expert to evaluate his competence against the list of technical questions), no comparable provision is found in Annexure G. The Court is not required to conduct an analysis of its competence or, potentially, to inform the Commission that a dispute involving technical matters should, in fact, be referred to a neutral expert.

486. The very composition of a court of arbitration also points to its competence in technical matters. In general, the skills or qualifications required of the members of a commission or tribunal represent a probative indication of the role the Parties intended that body to perform.[697] Here, one of the Court's umpires is required to be a "highly qualified engineer," and, indeed, nothing would stop the Parties from appointing engineers as their Party-appointed arbitrators or as the Chairman of the Court.[698]

487. In sum, the Court concludes that, although a neutral expert is competent only with respect to the technical questions identified in Annexure F, a duly constituted court of arbitration can consider any question "concerning the interpretation or application of [the] Treaty or the existence of any fact which, if established, might constitute a breach of this Treaty."[699] Accordingly, the Court considers that no dispute brought before a court of arbitration could be rendered inadmissible merely on the grounds that it involved a technical question.

488. The Court will now examine whether any further issue of admissibility arises from India's assertion that Pakistan has committed itself to submit the Second Dispute to a neutral expert. As the Court understands it, the significance of Pakistan's 11 March 2009 Letter and its pronounced intention to submit the question of orifice spillways at the KHEP to a neutral expert[700] is two-fold. Insofar as the Second Dispute may involve the same question, the

---

[696] The Court also notes that many of the provisions of Annexures D and E of the Treaty, including those relating to questions of the design of hydro-electric and storage facilities that are unquestionably within the list of questions in Part 1 of Annexure F, provide for disputes to be resolved "in accordance with the provisions of Article IX (1) and (2)." *See* Treaty, Annexure D, Paras. 7, 11, 21; Treaty, Annexure E, Paras. 6, 14, 16, 25. In the Court's view, this anticipates the possibility that such questions could be addressed through any of the modes of settlement contained in Article IX, rather than pursuant only to Article IX(2)(a).

[697] *See, e.g.*, *Abyei Arbitration (The Government of Sudan/The People's Liberation Army/Movement)*, Final Award, 22 July 2009, *PCA Award Series* (2012), para. 468 ("The skill set of the Experts appointed to the [Abyei Boundary Commission] is also an important indicator of the procedural expectations of the Parties.").

[698] Annexure G of the Treaty imposes no qualifications on the individuals who may be appointed by a Party as arbitrator. *See* Treaty, Annexure G, Paras. 4(a) and 6.

[699] Treaty, Art. IX(1).

[700] Pakistan's 11 March 2009 Letter formulated the question of orifice spillways as follows:

11 March 2009 Letter could arguably have triggered Article IX(2)(a) and committed the Parties to refer the difference to a neutral expert. In the Court's view, however, only an actual request for the appointment of an expert would activate the neutral expert process and preclude such a difference from submission to a court of arbitration.[701] Alternatively, the 11 March 2009 Letter and Pakistan's consideration that spillway design and sediment control are technical matters appropriate for a neutral expert could be seen as evidence that the Second Dispute is in fact technical in nature. But this would not alter the Court's view that the presence of potentially technical issues does not affect the admissibility of the Second Dispute.

489. For these reasons, no issue of admissibility follows from Pakistan's 11 March 2009 Letter. The Court nevertheless wishes to emphasize that, in its view, the difference concerning the permissibility of low-level orifice spillways that Pakistan has proposed to refer to a neutral expert is not identical with the Second Dispute now put before the Court. The former concerns whether the orifice spillway outlets contemplated for the KHEP are necessary for sediment control and are "of the minimum size and located at the highest level, consistent with sound and economical design and with satisfactory operation of the works."[702] The Second Dispute, by contrast, concerns the permissible modes of operation of low-level outlets generally and, in particular, whether India may employ drawdown flushing for sediment control. These are certainly related questions—as Pakistan itself has accepted before the Commission[703]—and the Court recalls in this regard its observations, in its analysis on the First Dispute, on the interlaced nature of design and operation.[704] Indeed, in the Court's view, it is not possible to evaluate

---

> Pakistan is of the considered view that the orifice spillway provided in the current design of the [KHEP] constitutes an outlet below Dead Storage Level which is not in accordance with the criteria contained in Paragraph 8(d) of Annexure D to the Treaty. India does not agree with Pakistan's position.

[701] The Court notes that Paragraph 5 of Annexure F distinguishes between the notice of intention to submit a difference to a neutral expert (Para. 5(a)), specifying the difference and how it falls within the neutral expert's competence under Annexure F, and the request for the appointment of a neutral expert (Para. 5(c)). In the Court's view, Pakistan's 11 March 2009 Letter is a notification under Paragraph 5(a). For the Court, however, an actual request for the appointment of an Expert under Paragraph 5(c) would be required to commit the Parties under Article IX(2)(a) to the neutral expert process.

[702] Treaty, Annexure D, Para. 8(d).

[703] Record of the 101st Meeting of the Commission, New Delhi, 25-28 July 2008, (Annex PK-35), p. 13 ("[I]t was stated by the PCIW [Pakistan Commissioner for Indus Waters] that while the issue was general in nature, it arose directly out of the design of KGHP [KHEP] and its discussion in the previous meetings and correspondence of the parties. PCIW noted specifically that the discussion with respect to sediment control and spillway design under Paragraphs 8(d) and 8(e) of Annexure D would not be meaningful unless the legality of drawdown flushing was first determined.").

[704] *See* paras. 407-409 of the Final Award.

whether the inclusion of a particular type of outlet is necessary, or whether such outlets are of an appropriate size and location, without first knowing how (or even whether) the Treaty anticipates that such outlets could actually be operated.

490. It does not follow, however, that the two questions are a "single composite issue" that must be decided in a single forum, much less that the antecedent legal question of permissible operation becomes subsumed within questions relating to the design of a particular project. As the Court understands it, Pakistan has not objected to drawdown flushing on the grounds that it is technically unfeasible at the KHEP (or elsewhere); rather, Pakistan's position is that, irrespective of its technical merits or demerits, drawdown flushing is precluded by the Treaty. This is a legal question and, in the Court's view, not an indispensable part of the question of "whether or not the design of a Plant conforms to the criteria set out in Paragraph 8," for which a neutral expert would be competent. The Court accepts, of course, that such an expert may have to interpret the Treaty in the process of rendering a determination on the matters put before him. But where a legal issue (such as the permissibility of reservoir depletion) is contested and does not fall within a question identified for the neutral expert, the Court considers that it would be incumbent on such an expert to refer the matter back to the Commission to be handled as a dispute.

491. For the foregoing reasons, India's second objection to admissibility cannot be upheld. The Court holds that the Second Dispute is admissible and will proceed to consider the merits.

3. The permissibility of drawdown flushing

492. To resolve the Second Dispute, the Court must determine whether the Treaty permits drawdown flushing for sediment control at Indian Run-of-River Plants located on the Western Rivers. As detailed above,[705] Pakistan contends that an express prohibition on the depletion of reservoirs—which would effectively render drawdown flushing impossible—is incorporated by reference from Annexure E, which regulates the operation of Storage Works. Pakistan further submits that, within Annexure D itself, the combined effect of: (1) the definition of Dead Storage; (2) the restrictions on the low-level outlets that effective flushing would require; and (3) the limits imposed on the release of water below a dam, operates to prohibit drawdown flushing. Conversely, India contends that not only do these provisions not prohibit the use of

[705] *See* paras. 291-337 of this Partial Award.

drawdown flushing, but that the Treaty was purposely drafted with a flexible state-of-the-art principle to take full advantage of advances in technical knowledge, including in sediment control.

493. The Court will begin by considering the processes available for the control of sediment in hydro-electric installations. It will then turn to the background to the Treaty and the scope of India's right to develop storage and generate hydro-electric power on the Western Rivers. Thereafter, the Court will examine the specific Treaty provisions invoked by the Parties for and against the permissibility of drawdown flushing, as well as the need for such flushing at the KHEP.

494. The KHEP is a Run-of-River Plant and the question posed to the Court by Pakistan concerns the permissibility of reservoir depletion only for Run-of-River Plants. Indeed, despite assertions on several occasions that the KHEP maintains the features of a Storage Work,[706] the Court does not consider that the nature of India's project is seriously in dispute between the Parties. Pakistan has consistently described—and objected to—the KHEP by reference to Annexure D of the Treaty and, for its part, the Court considers that Pakistan's description of the KHEP is essentially correct: the KHEP employs a high dam and thus impounds a significantly larger volume of water than many run-of-river installations; it also utilizes an intake design more commonly seen in storage reservoirs. Nevertheless, because the Treaty defines a Run-of-River Plant solely by reference to the volume of storage designed to be used in the generation of power,[707] the total volume of storage behind the dam is not relevant in the classification of the works. In any event, the dispute presented to the Court is not limited to sediment control at the KHEP; rather, it concerns the permissibility generally of reservoir depletion at any future Run-of-River Plant on the Western Rivers. Accordingly, in the following analysis, the Court will review the question in terms of Annexure D to the Treaty, which governs the design, construction and operation of new Run-of-River Plants on the Western Rivers.

[706] *See, e.g.*, Pakistan's Reply, paras. 6.27-6.31.

[707] *See* para. 383 of this Partial Award and the accompanying footnotes. For the purposes of the Treaty a "Run-of-River Plant" is any Plant that is not designed to generate power from stored water beyond the volume expressly permitted to be stored and utilized as "Pondage." The potential presence of even large volumes of Dead Storage below the Pondage is irrelevant to this definition, provided that such storage cannot be used to generate electricity.

(a) Reservoir sedimentation and sediment control

495. Although ultimately legal in nature, the Second Dispute as presented by the Parties involves extensive reference to the processes of sedimentation and sediment management, the comparative effectiveness of different approaches and the environmental impact of sediment released from reservoirs. The resolution of the Second Dispute requires an understanding of how sediment is deposited in reservoirs and the techniques that are available to control its accumulation. Accordingly, before turning to the Treaty provisions relevant to this subject, it is appropriate to review, in general terms, the behaviour of sediment in rivers and reservoirs, as presented by the experts of both Parties.[708]

496. Sediment is an element of any watercourse or river system and enters the water as a result of erosion within the watershed of the river in question, as well as from the banks and bed of the river itself. Quantities of sediment can vary dramatically between river systems as a result of differences in the geology, climate, and vegetation of the catchment area, as well as human activities such as agriculture. Within a particular river system, the quantities of sediment entering the water will also vary substantially over time as a result of seasonal factors such as snowmelt and monsoon rains, as well as discrete events such as earthquakes and landslides that may push large quantities of soil into the water. In many rivers, peak sediment loads may be many times the average concentration, and in extreme cases, quantities of sediment greater than the entire average annual load may enter a river within the space of a few days.

[708] The following discussion is drawn from the testimony of the Parties' experts as well as the following sources in the record: ICOLD, Bulletin 115, "Dealing with reservoir sedimentation," 1999, (Annex IN-TX-1); Alessandro Palmieri, *Sustainability of Dams – Reservoir Sedimentation Management and Safety Implications* (World Bank, 1998), (Annex IN-TX-2); Yang Xiaoqing, "Manual on Sediment Management and Measurement," World Meteorological Organization Operational Hydrology Report No. 47, WMO-No. 948, (2003), (Annex IN-TX-3); Durga Prasad Sangroula, "Sediment Management for Sustainability of Storage Projects in Himalayas: A Case Study of the Kulekhani Reservoir in Nepal," International Conference on Small Hydropower: Hydro Sri Lanka, October 2007, (Annex IN-TX-5); Izhar-ul-Haq & S. Tanveer Abbas, "Sedimentation of Tarbela & Mangla Reservoirs," Paper No. 659, Pakistan Engineering Congress, 70th Annual Session Proceedings, 2006, (Annex IN-TX-6); W.R. White, "World Water: Resources, Usage and the Role of Man-Made Reservoirs," March 2010, (Annex IN-TX-7); W. Rodney White, "Flushing of Sediments from Reservoirs," Contributing Paper to the World Commission on Dams, (Annex IN-TX-9); E. Atkinson, The Feasibility of Flushing Sediment from Reservoirs, Report OD137, November 1996, (Annex IN-TX-10); Gregory L. Morris and Jiahua Fan, *Reservoir Sedimentation Handbook: Design and Management of Reservoirs, Dams, and Watersheds for Sustainable Use*, Electronic version 1.01, September 2009, (Annex IN-135); Gregory L. Morris, "Reservoir Sedimentation and Sustainable Development in India: Problem Scope and Remedial Strategies," Proceedings of the 6th International Symposium on Reservoir Sedimentation, 1995, (Annex IN-137).

497. Once in the water, sediment travels progressively downstream, either along the river bottom in the case of coarser sands and gravel (or even larger rocks and boulders during extreme floods), or in suspension in the case of finer particles. The capacity of a river to transport sediment is directly related to both the amount of sediment entering the river system and to its flow. For coarser sands and gravel from the riverbed, the greater the velocity of the water, the more sediment will be put into motion by the river's hydraulic energy. Quantities of sediment in excess of a river's transport capacity will be deposited along the river bottom and banks; such concentrations may subsequently be eroded and transported downstream when the transport capacity of the river increases.

498. Because the capacity of a river to transport sediment is directly linked to the velocity of the flow, it will vary over the reach of a river. In particular, any body of still water, such as a pool, lake, or reservoir will have the effect of slowing the flow and reducing its transport capacity, thereby causing suspended sediment to settle to the bottom. Coarse particles will typically be deposited at the upstream end where the flow first enters a reservoir, while finer sediments will settle further into the reservoir as the dispersal of the incoming water progressively reduces its flow. As a result of these dynamics, sedimentation is a concern at any reservoir where the long-term maintenance of a significant storage volume is an objective. Simply put, any reservoir will eventually fill with sediment, reducing its utility and eventually rendering it inoperable if this process is left uncontrolled.

499. In broad terms, the accumulation of sediment in a reservoir can be controlled by reducing the quantity of sediment entering the reservoir, by passing sediment loads through the reservoir without allowing significant quantities to settle out of suspension, or by periodically removing accumulated sediment after it has been allowed to deposit in the reservoir. Each approach has advantages and limitations and may be either more or less effective in the context of particular watersheds and particular reservoir sites. A combination of approaches is often the most effective method of managing sediment.

500. Reducing the volume of sediment entering a reservoir is typically attempted through efforts to control erosion in the watershed upstream of the reservoir, generally by reducing agricultural run-off and by planting soil-retaining vegetation. Erosion control, however, has shown limited effectiveness in reducing sediment concentrations, for example over large watersheds, in tectonically unstable areas and on rivers with high variability in annual peak flows. Alternatively, sediment can be prevented from entering a reservoir by constructing a bypass channel, such that heavy sediment concentrations are routed around the reservoir, or by locating

a reservoir off the main channel of the river, permitting only relatively clear water to be drawn into the reservoir and stored. Such reservoir designs, however, require a particular topography in the area surrounding the planned reservoir and may only be feasible at certain sites.

501. Passing sediment through a reservoir without permitting its deposition is typically carried out through the process known as sluicing. During peak sediment loads, the incoming flow (and its sediment) is allowed to pass freely through the reservoir, thus minimizing the retention of such silt-laden water. The water level of the reservoir may also be partially drawn down to increase the velocity of the flow through the reservoir and maintain its corresponding capacity to transport sediment. Additionally, in certain reservoirs, a highly concentrated flow of sediment into the reservoir may form what is known as a density or turbidity current, in which the flow of sediment-laden water maintains its concentration and velocity while travelling along the bottom of the reservoir. Provided that the density current reaches the dam without significant dilution and that appropriate outlets are available, the sediment in a density current may be vented or sluiced downstream without any need for drawdown. In either case, because sluicing delivers sediment downstream at the same time and in the same concentrations that would naturally occur, its environmental impact is generally limited.

502. Finally, the accumulation of sediment in a reservoir may be controlled by removing such sediment after it has been allowed to deposit. Although this may be done mechanically, through dredging or siphoning, the limits on the volumes of sediment that can be removed by such techniques is such that sediment removal is typically approached in terms of flushing—the process at issue in these proceedings—in which the river flow itself is used to remove accumulated sediment. In a flushing operation, sediment deposits are eroded and expelled by the flow of water through the reservoir, typically by drawing the water level in the reservoir down to a level at (or near) the reservoir bottom. Drawn down to such an extent, the river is largely restored to its natural flow velocity, which maximizes the capacity of the water to erode and transport deposited sediment. Although both sluicing and flushing operations may involve reservoir drawdown and will operate more efficiently at lower water levels, the extent of the required drawdown is typically greater for flushing operations; the velocity through the reservoir required to scour accumulated sediment is greater than that required to maintain the suspension of sediment in the incoming flow. Although flushing may be attempted with only partial depletion of a reservoir, this technique is not as efficient as flushing after a complete drawdown and—in light of the need for frequent repetition—is not commonly used. The effects of flushing without any drawdown of the reservoir are generally limited to a narrow cone in the

immediate vicinity of the outlet and such an approach is typically used only to clear the area surrounding the intake of a hydro-electric plant.[709] Considering the heavy concentrations of sediment released in flushing, it may have significant environmental impacts on the water quality and other aspects of the downstream reaches of the river, particularly in the area immediately below the dam.

(b) The context of the Treaty with respect to drawdown flushing

503. The permissibility of depletion below Dead Storage Level is regulated explicitly by specific provisions in Annexure D (and, through incorporation by reference, Annexure E). These provisions are, however, to be interpreted within the context of the Treaty as a whole—in particular, against the background of permissible uses and the allocation of rights on the Western Rivers. The Court will begin its analysis of the Treaty with a number of contextual aspects that bear upon all of the specific provisions identified by the Parties in respect of the question of reservoir depletion.

504. First, one of the primary objectives of the Treaty is to limit the storage of water by India on the Western Rivers (and, correspondingly, to prohibit entirely the storage of water by Pakistan on the upper reaches of the Eastern Rivers). Annexure E to the Treaty strictly limits the volume of General Storage, Power Storage, and Flood Storage that India may develop on each of the Western Rivers.[710] For new Run-of-River Plants, Annexure D likewise restricts the permissible volume of pondage, and pegs this limit to power generation at the *minimum* mean discharge calculated at the site.[711] These are not generous limits—the volume of storage permitted to India on the Jhelum Main, for instance, is zero—and even the limited available record of the Treaty's negotiating history suggests that these amounts of storage were a key point of contention between the Parties.[712] The outcome was significant in that it achieved a careful balance between the Parties' respective negotiating positions, allowing India hydro-electric use

[709] ICOLD, Bulletin 115, "Dealing with reservoir sedimentation," 1999, (Annex IN-TX-1), p. 49.

[710] Treaty, Annexure E, Para. 7.

[711] Treaty, Annexure D, Paras. 2(i), 8(c).

[712] *See, e.g.*, Note to Files from W.A.B. Iliff, 19 April 1960, (Annex IN-50) ("After Mr Gulhati and Mr Mueenuddin had handed me their respective figures for . . . the amount of storage which India might be permitted to build on the Western Rivers, I informed each of them in a joint meeting that the gap between the positions of the two sides was so wide that there was no possible hope that the Bank could bring them together by a 'good offices' technique. . . . I went on to request that each of them should ask his Government to reconsider their positions and to present to the Bank . . . a revised figure moving in the direction of closing the gap.").

of the waters of the Western Rivers while protecting Pakistan against the possibility of water storage on the upstream reaches of those Rivers having an unduly disruptive effect on the flow of water to Pakistan.

505. In contrast, Dead Storage is the only category of storage, under either Annexure D or E, that is unrestricted in volume. India may include Dead Storage in the design of any Run-of-River Plant or Storage Work and may provide for Dead Storage of any capacity. This fact is consistent with the other restrictions on storage on the Western Rivers only if Dead Storage is somehow qualitatively different and was understood to be truly "dead"—an area to be filled once, and not thereafter subject to manipulation. The absence of limits on the volume of Dead Storage cannot, of course, itself impose a restriction on how such storage may used. But it is suggestive of the mindset of the Parties in providing for storage of this type.

506. Second, the Court notes that in many instances the Treaty does not simply restrict the Parties from taking certain actions, but also constrains their entitlement to construct works that would enable such actions to be taken. Thus, India is not only restricted in storing water on the Western Rivers; it is also prohibited from constructing Storage Works except within the limited capacity permitted by the Treaty.[713] Annexure D, in turn, sets out the permissible operation of a Run-of-River Plant, and also includes in Paragraph 8 restrictions on the design of such Plants.[714] In particular, Paragraph 8(d) prohibits outlets from a reservoir below the Dead Storage Level, "unless necessary for sediment control or any other technical purpose." Any outlets that may be necessary must be of the "minimum size and located at the highest level" that would be "consistent with sound and economical design and with satisfactory operation of the works."[715]

507. In their submissions, the Parties have advanced sharply divergent views of the meaning of Paragraph 8(d), Pakistan characterizing the provision as a constructive prohibition on drawdown flushing and India, as an express authorization to design the dam as necessary for effective sediment management. In the Court's view, however, Paragraph 8(d) is neither. This

[713] Article III(4) of the Treaty provides that "[e]xcept as provided in Annexure D and E, India shall not store any water of, or construct any storage works on, the Western Rivers."

[714] Paragraph 11 of Annexure E includes similar physical restrictions on the design of any Storage Works that India may construct on the Western Rivers. As a matter of general approach, the Treaty appears to routinely reinforce operational limits on the conduct of the Parties with physical restrictions on the development of infrastructure.

[715] Treaty, Annexure D, Para. 8(d).

Paragraph does not prohibit flushing, even in a roundabout fashion, by prohibiting the necessary outlets. Outlets below Dead Storage Level are permitted if "necessary for sediment control." Nor does Paragraph 8(d) evidence the Parties' intention to permit drawdown flushing. Outlets below Dead Storage Level can be used to control sediment accumulation through sluicing, without significantly reducing the level of water in the reservoir. Thus, no rule either permitting or proscribing drawdown flushing follows from the terms of Paragraph 8(d).

508. The relevance of this provision is contextual. Design restrictions on the availability of outlets from Dead Storage make sense only against a background assumption that the uses to which Dead Storage could be put are also somehow constrained. If depletion of Dead Storage was intended, whether for flushing or otherwise, the Court can see no obvious purpose that would be served by limiting the size and placement of outlets from Dead Storage. This is all the more so, considering that the preferred location for outlets intended for flushing would be at the riverbed or, in other words, at the lowest level of the reservoir—not the highest. The existence of a restriction on outlets thus strongly suggests that some limitation on the use and depletion of Dead Storage was also intended.

509. Finally, as the Court considered in detail above, it is beyond debate that the intention behind the Treaty was to allow India to develop the hydro-electric potential of the Western Rivers, largely through the use of Run-of-River Plants. This is an important aspect of the Treaty context with respect to drawdown flushing. The Court does not accept that, in serious negotiations extending over the course of years, India and Pakistan would have wasted time on the allocation of rights that could not, in fact, be used productively. In this respect, the Court concurs with the idea that "anything you build needs to work."[716] If a prohibition on drawdown flushing would render any sustainable hydro-electric development impossible, the Court would consider this relevant in approaching any Treaty provision seeming to suggest such a prohibition. In light, however, of the variety of approaches available to manage sediment—not all of which would require the depletion of reservoirs below Dead Storage Level—the Court considers this a matter for further examination in its discussion of the necessity of drawdown flushing.

[716] Hearing Tr., (Day 2), 21 August 2012, at 121:16,18 (cross-examination of Dr Morris).

(c) The specific provisions of the Treaty

510. Turning from the Treaty's context to its specifics, the Court considers that two provisions—concerning the release of water below a Plant and the restrictions on reservoir filling—directly bear on the permissibility of drawdown flushing. The Court will address each of these provisions in turn.

511. The chapeau of Paragraph 15 of Annexure D establishes the flow that may be released below a Run-of-River Plant in the following terms:

> Subject to the provisions of Paragraph 17 [excluding periods of filling], the works connected with a Plant shall be so operated that (a) the volume of water received in the river upstream of the Plant during any period of seven consecutive days, shall be delivered into the river below the Plant during the same seven-day period, and (b) in any one period of 24 hours within that seven-day period, the volume delivered into the river below the Plant shall not be less than 30%, and not more than 130%, of the volume received in the river above the Plant during the same 24-hour period. [. . .][717]

512. Although Pakistan argues that drawdown flushing would be "severely curtailed (if not prohibited)" by the flow restrictions in Paragraph 15,[718] such is not necessarily the case: depending upon the flow at and hydrological size of a particular reservoir, drawdown flushing may or may not conform with these restrictions. In general, drawdown flushing would be incompatible with Paragraph 15 at hydrologically large reservoirs and at most reservoirs during the low flow season. Insofar, however, as hydrologically small reservoirs could still be flushed within seven days while complying with the daily limits on the permissible delivery of water below the Plant, the flow restrictions in Paragraph 15 will not prohibit drawdown flushing. However, as currently envisaged by India, the use of drawdown flushing at the KHEP would in all probability not comply with the flow restrictions of Paragraph 15.[719]

513. The decisive prohibition on the depletion of a reservoir below Dead Storage Level stems from Paragraph 14 of Annexure D, through its incorporation by reference of Paragraph 19 of Annexure E. Paragraph 14 provides as follows:

---

[717] Paragraph 16 further elaborates the applicable 24-hour and 7-day periods as follows:

> For the purpose of Paragraph 15, the period of 24 hours shall commence at 8 a.m. daily and the period of 7 consecutive days shall commence at 8 a.m. on every Saturday. The time shall be Indian Standard Time.

[718] Pakistan's Memorial, para. 6.30(c); *see also* Pakistan's Reply, para. 6.32.

[719] *See* India's Counter-Memorial, p. 269-270. While the KHEP reservoir could, under certain flow conditions, be flushed through more gradual depletion and refilling while observing the limits of Paragraph 15, the Court's ultimate conclusion on the permissibility of drawdown flushing does not hinge on this provision.

> The filling of Dead Storage shall be carried out in accordance with the provisions of Paragraph 18 or 19 of Annexure E.

In turn, Paragraphs 18 and 19 of Annexure E provide as follows:

> 18. The annual filling of Conservation Storage and the initial filling below Dead Storage Level, at any site, shall be carried out at such times and in accordance with such rules as may be agreed upon between the Commissioners. In case the Commissioners are unable to reach agreement, India may carry out the filling as follows:
>
> [. . .]
>
> (b) if the site is on The Jhelum, between 21st June and 20th August; and
>
> [. . .]
>
> 19. The Dead Storage shall not be depleted except in an unforeseen emergency. If so depleted, it will be re-filled in accordance with the conditions of its initial filling.

514. In approaching these provisions, the Court cannot separate the prohibition on depletion in Paragraph 19 from the provisions on refilling. By referring to Paragraph 19 as well as Paragraph 18 (containing the schedule for initial filling), the drafters of Annexure D evidently intended to provide for a situation of refilling. Far from being irrelevant, however, the circumstances in which a reservoir can be depleted are directly related to the need to refill it. This is all the more true insofar as the second sentence of Paragraph 19 begins with the words "[i]f so depleted" and is grammatically incoherent if incorporated without the preceding text. It therefore follows that Annexure D transposes Paragraph 19 of Annexure E in its entirety—including the prohibition on the depletion of Dead Storage. Further, it is undisputed between the Parties that sediment accumulation would not constitute an unforeseen emergency.[720]

515. Having identified at least one operative provision of Annexure D that prohibits the depletion of Dead Storage for drawdown flushing, the Court considers it sufficient to note that the definition of Dead Storage in Annexure D—"that portion of the storage which is not used for operational purposes"—is consistent with this outcome. The Court considers it unnecessary, under the circumstances, to decide whether the definition alone would constitute a prohibition. The Court does, however, consider it appropriate to emphasize that a distinction between "operation" and "maintenance" (advanced by India primarily in reference to the definition of Dead Storage) would not permit India to carry out drawdown flushing in the face of the restrictions the Court

[720] It is undisputed between the Parties that Paragraph 19 of Annexure E, insofar as it applies, constitutes a prohibition on drawdown flushing (the need for sediment management not being an unforeseen emergency). *See* Pakistan's Memorial, para. 6.21; India's Counter-Memorial, para. 737 (accepting that Paragraph 19 prohibits drawdown flushing in the context of Annexure E).

has identified in Paragraphs 14 and 15.[721] In an instrument as detailed and comprehensive as the present Treaty, the Court cannot accept that a category of "maintenance purposes" nowhere specified in the Treaty can be invoked to free a party from restrictions that are explicitly laid down in the Treaty.

(d) The necessity of drawdown flushing for power generation on the Western Rivers

516. To complete its analysis, the Court turns to the key factor that bears further consideration in light of the prohibition on flushing apparent in the text: the question of whether drawdown flushing is indispensable to any sustainable generation of hydro-electric power on the Western Rivers.[722] Such an inquiry requires an examination of the impact any proscription of drawdown flushing would have on the viability of Indian Run-of-River Plants on the Western Rivers.

517. Having reviewed the technical documentation submitted by the Parties[723] and in reliance on the opinions of the experts presented by them, the Court concludes that the constraints imposed by the Treaty should not condemn the KHEP or other Indian hydro-electric projects on the Western Rivers to an impractical and uneconomically short project life.[724] While the prohibition on reservoir depletion will preclude India from having recourse to flushing with

---

[721] With respect to the limits on flow in Paragraph 15, India has in fact conceded that they would remain applicable during any flushing operation. India's Counter-Memorial, para. 7.51. Although this would ordinarily suffice to dispense with the matter, the Court notes certain statements by India's expert to the effect that categorizing flushing as maintenance would disable any restriction, including those on flow and even the express prohibition on depletion in Annexure E. *See* Hearing Tr., (Day 3), 22 August 2012, at 90:2 to 94:18. In light of this suggestion in the record, the Court considers it appropriate to address this question expressly.

[722] In the Court's view, the Parties' discussion of whether drawdown flushing was understood and was within the expectation of the Treaty drafters in 1960 is subsumed within the question of whether such flushing is necessary at the KHEP and other Run-of-River installations today. The Court accepts that the Treaty is to be interpreted in light of technological developments and that the Parties are not bound to the technology of 1960. Nevertheless, any general "state-of-the-art" principle cannot serve to override the essential equilibrium on water use and flow agreed to by the Parties in the Treaty. This may well mean that some techniques that would be considered state-of-the-art will be unavailable to India in the future; so long as other methods are available and can be made effective, however, India is bound by the constraints of the Treaty.

[723] *See* the sources listed above at note 708 in this Partial Award.

[724] India has both stated that drawdown flushing is "one of the effective techniques" for maintaining the sustainability of reservoirs (India's Counter-Memorial, para. 7.81), and asserted that drawdown flushing is "essential" or "necessary" to the sustainability of the KHEP (India's Counter-Memorial, para. 7.89), comparing its projected lifespan with and without drawdown flushing (India's Counter-Memorial, para. 7.88).

drawdown below Dead Storage Level, the Court recalls that flushing is but one of a number of techniques available for sediment control.[725]

518. With respect to the KHEP, the Court accepts Dr Morris's opinion that sediment sluicing offers a feasible alternative to drawdown flushing. Sluicing, the Court recalls, is the technique whereby sediment-laden inflows are released through the dam before the sediment particles can settle in the reservoir. As the Court understands it, the basis for Dr Morris's opinion is the historically well-established record of effective sediment control at run-of-river installations through the use of a high-level intake to the power turbines and of sediment sluices in the immediate vicinity of the intake.[726] In Dr Morris's opinion—which the Court also accepts—no significant difference follows from the fact that the KHEP is a Run-of-River Plant located on top of the reservoir created by a high dam, rather than at a low barrage. Where a high dam is being used to raise the elevation of the intake and the corresponding generating capacity—and not to create usable storage behind the dam—the Dead Storage can fill with sediment without consequence. Once the Dead Storage is filled with sediment, the upper reaches of the reservoir would operate identically to a low barrage[727] and could be cleared of sediment through sluicing, without a need to draw down the reservoir.[728] According to Dr Morris, it is the KHEP's current intake design—rather than anything inherent in the height of the dam or the size of the reservoir—that prevents the KHEP from simply sluicing sediment like a barrage.[729]

519. The essence of Dr Morris's opinion on the feasibility of sluicing at the KHEP site has not been contradicted by India's experts. Despite Dr Rangaraju's view that drawdown flushing is "essential," the Court considers his testimony to establish that drawdown flushing is an appropriate (and perhaps preferable) technique, but not the only possible one.[730] With reference

---

[725] *See* paras. 495-502 of this Partial Award. *See also* Hearing Tr., (Day 2), 21 August 2012, at 101:14 to 104:13 (cross-examination of Dr Morris); Hearing Tr., (Day 3), 22 August 2012, at 78:3-20; 105:22 to 107:6 (cross-examination of Dr Rangaraju); for a short list of sediment management options, *see* ICOLD, Bulletin 115, "Dealing with reservoir sedimentation," 1999, (Annex IN-TX-1), pp. 13, 15.

[726] Morris Report, p. 10.

[727] Hearing Tr., (Day 2), 21 August 2012, at 108:2 to 110:3 (cross-examination of Dr Morris).

[728] Because significantly lower water velocities are required to remove suspended sediment from the reservoir than to dislodge accumulated sediment (which is the purpose of drawdown flushing), sluicing, unlike flushing, can be carried out without or with only partial drawdown. *See* ICOLD, Bulletin 115, "Dealing with reservoir sedimentation," 1999, (Annex IN-TX-1), § 3.1.1.

[729] Morris Report, pp. 14-15.

[730] Hearing Tr., (Day 3), 22 August 2012, at 105:22 to 107:6 (cross-examination of Dr Rangaraju); *see also* India's Counter-Memorial, para. 7.81.

to drawdown flushing, Dr Rangaraju stated that "nobody can claim that this is the only technique possible"[731] and further acknowledged that he had not examined whether sluicing would suffice to control sediment at the KHEP.[732]

520. Similarly, the Court understands the report of Dr Schleiss to state that drawdown flushing is essential for the sustained operation of the KHEP *as currently designed*, but not to exclude other possible designs that could operate on a different basis. Dr Schleiss's principal concern involves the encroachment of coarse sediment from the delta at the upper end of the reservoir on the KHEP's submerged power intake; other sediments would be controlled through "normal spillway operation" (i.e., operation not requiring drawdown) and by venting turbidity currents containing a "high amount of suspended fine sediment."[733] In the Court's view, this is not in fact fundamentally inconsistent with the testimony of Dr Morris, who asserts sluicing is feasible on the basis of alternative intake designs. Ultimately, the Court considers that Dr Schleiss has not established to its satisfaction that another intake design that could operate without drawdown flushing would be technically unworkable.[734]

521. The Court's view that India's right to generate hydro-electric power on the Western Rivers can meaningfully be exercised without drawdown flushing extends beyond the specifics of the KHEP to other, future Run-of-River Plants. Based on the evidence provided to it, the Court notes that, in general, sluicing is recommended for narrow, hydrologically small[735] reservoirs

---

[731] Hearing Tr., (Day 3), 22 August 2012, at 78:19-20 (cross-examination of Dr Rangaraju).

[732] Hearing Tr., (Day 3), 22 August 2012, at 82 to 83 (cross-examination of Dr Rangaraju).

[733] Schleiss Report, p. 6.

[734] Dr Schleiss states that a submerged intake is required at the KHEP in light of the need to maintain water pressure throughout the head-race tunnel. *See* Schleiss Report, p. 4 ("the intake has to have sufficient submergence from the operation level of the reservoir in order to avoid vortex formation and consequently air entrainment into the intake as well as to ensure pressure flow in the headrace tunnel under all operation conditions"). He further states, without elaboration, that the topographical conditions at the site require the intake to draw water directly from the reservoir itself, rather than by way of a separate weir and desilting basin. *See ibid.*, p. 5 ("Under the local topographic condition of the KHEP it is technically not feasible to design free surface desilting basins."). For the Court, this suffices to establish that the current design of the KHEP may well be the simplest alternative and the use of drawdown flushing the most economical approach to sediment management; it does not establish that these approaches are the only ones available.

[735] The hydrological size of the reservoir is computed as the ratio of total reservoir volume to mean annual inflow. From a sediment management perspective, it is more significant than a reservoir's absolute size. Reservoirs with a capacity inflow ratio exceeding 30 or 50 percent are considered hydrologically large. *See* Gregory L. Morris and Jiahua Fan, *Reservoir Sedimentation Handbook: Design and Management of Reservoirs, Dams, and Watersheds for Sustainable Use*, Electronic version 1.01, September 2009, (Annex IN-135), § 3.3.1; W. Rodney White, "Flushing of Sediments from Reservoirs," Contributing Paper to the World Commission on Dams, (Annex IN-TX-9), p. vi.

located on rivers where surplus inflow is available for discharging sediment,[736] and that sluicing with little drawdown is particularly effective in regions where a significant percentage of the annual sediment load is carried by the river in short and predictable periods.[737] While acknowledging that the potential impact of sediment must be evaluated and modelled in relation to each particular site and dam design, the Court presently sees no reason why the factors favouring the feasibility of a sluicing mode of operation at the KHEP site would not apply equally to other sites on the Western Rivers at which India would be likely to construct Run-of-River Plants.

522. In carrying out this evaluation, the Court emphasizes that it is not considering whether the development of hydro-electric power without recourse to drawdown flushing is preferable for India. It is not for the Court to apply "best practices" in resolving this dispute. India has quite understandably argued in these proceedings for a right to the optimal design and operation of its hydro-electric installations on the upstream stretches of the Western Rivers. However, any exercise of design involves consideration of a variety of factors—not all of them technical. Hydrologic, geologic, social, economic, environmental and regulatory considerations are all directly relevant,[738] and the Court considers the Treaty restraints on the construction and operation by India of reservoirs to be such a regulatory factor.[739] For the Court, the optimal design and operation of a hydro-electric plant is that which can practically be achieved within the constraints imposed by the Treaty.

* * *

[736] ICOLD, Bulletin 115, (Annex IN-TX-1), §§ 3.1.2, 3.1.3; Gregory L. Morris and Jiahua Fan, *Reservoir Sedimentation Handbook: Design and Management of Reservoirs, Dams, and Watersheds for Sustainable Use*, Electronic version 1.01, September 2009, (Annex IN-135), § 13.1.3.

[737] Hearing Tr., (Day 2), 21 August 2012, at 127:15-25 (cross-examination of Dr Morris); Durga Prasad Sangroula, "Sediment Management for Sustainability of Storage Projects in Himalayas: A Case Study of the Kulekhani Reservoir in Nepal," International Conference on Small Hydropower: Hydro Sri Lanka, October 2007, (Annex IN-TX-5), pp. 7-8; Gregory L. Morris, "Reservoir Sedimentation and Sustainable Development in India: Problem Scope and Remedial Strategies," Proceedings of the 6th International Symposium on Reservoir Sedimentation, 1995, (Annex IN-137), p. 59.

[738] *See* Hearing Tr., (Day 2), 21 August 2012, at 100:13 to 101:4, 118:7 to 119:12 (cross-examination of Dr Morris); *see also* Alessandro Palmieri, *Sustainability of Dams – Reservoir Sedimentation Management and Safety Implications* (World Bank, 1998), (Annex IN-TX-2), p. 4.

[739] In the case of the KHEP, the Court is cognizant that changes to the design of the project may be required to optimize the management of sediment in light of this Partial Award. In this respect, it is provident for the Court to note that its *Order on Interim Measures* has temporarily restrained the construction of "permanent works on or above the Kishenganga/Neelum riverbed," a development that may now serve to facilitate any changes in design that India may need to implement in light of the Court's decision on drawdown flushing.

523. The Court is conscious of the fact that the issues of reservoir construction and operation raised by the Second Dispute come before it at a time at which the process of harnessing the potential for the generation of hydro-electricity on the Western Rivers, as foreseen by the Treaty, is already under way. This does not alter the duty of the Court to interpret and apply the Treaty in the manner required by Paragraph 29 of Annexure G. It would not be in accordance with the governing principles enunciated in this Partial Award for the interpretation of the Treaty, and its application, to cast doubt retrospectively on any Run-of-River Plants already in operation on the Western Rivers. For the same reasons, the Court wishes to make plain that this Partial Award may not be so interpreted as to affect retrospectively any such Plant already under construction (although not yet in operation) the design of which, having been duly communicated by India under the provisions of Annexure D, had not been objected to by Pakistan as provided for in Annexure D. That is plainly not the case for the Kishenganga Hydro-Electric Project itself.

the remainder of this page intentionally blank

V. DECISION

Having considered the Parties' written and oral submissions, the Court of Arbitration unanimously decides:

A. In relation to the First Dispute,

(1) The Kishenganga Hydro-Electric Project, as described to the Court by India, constitutes a Run-of-River Plant for the purpose of Paragraph 15 of Annexure D to the Indus Waters Treaty, and in particular sub-paragraph (iii) thereof.

(2) India may accordingly divert water from the Kishenganga/Neelum River for power generation by the Kishenganga Hydro-Electric Plant and may deliver the water released below the power station into the Bonar Nallah.

(3) India is however under an obligation to construct and operate the Kishenganga Hydro-Electric Plant in such a way as to maintain a minimum flow of water in the Kishenganga/Neelum River, at a rate to be determined by the Court in a Final Award.

B. In relation to the Second Dispute,

(1) Except in the case of an unforeseen emergency, the Treaty does not permit reduction below Dead Storage Level of the water level in the reservoirs of Run-of-River Plants on the Western Rivers.

(2) The accumulation of sediment in the reservoir of a Run-of-River Plant on the Western Rivers does not constitute an unforeseen emergency that would permit the depletion of the reservoir below Dead Storage Level for drawdown flushing purposes.

(3) Accordingly, India may not employ drawdown flushing at the reservoir of the Kishenganga Hydro-Electric Plant to an extent that would entail depletion of the reservoir below Dead Storage Level.

(4) Paragraphs B(1) and B(2) above do not apply to Run-of-River Plants that are in operation on the date of issuance of this Partial Award. Likewise, Paragraphs B(1) and B(2) do not apply to Run-of-River Plants already under construction on the date of issuance of this Partial Award, the design of which, having been duly communicated by India under the provisions of Annexure D, had not been objected to by Pakistan as provided for in Annexure D.

C. This Partial Award imposes no further restrictions on the construction and operation of the Kishenganga Hydro-Electric Plant, which remain subject to the provisions of the Treaty as interpreted in this Partial Award.

D. To enable the Court to determine the minimum flow of water in the Kishenganga/Neelum River referred to in paragraph A(3) above, the Parties are required to submit to the Court the information specified in paragraphs 458 to 462 within the time periods set out in paragraph 463 of this Partial Award.

E. The interim measures indicated by the Court in its 23 September 2011 *Order on the Interim Measures Application of Pakistan dated June 6, 2011* are hereby lifted.

F. The costs of the proceedings to be awarded by the Court pursuant to Paragraph 26 of Annexure G to the Treaty shall be determined in the Court's Final Award.

Done at the Peace Palace, The Hague
Dated: February 18, 2013

Professor Lucius Caflisch

Professor Jan Paulsson

Judge Bruno Simma

H.E. Judge Peter Tomka

Professor Howard S. Wheater FREng

Sir Franklin Berman KCMG QC

Judge Stephen M. Schwebel
Chairman

Mr. Aloysius Llamzon
Registrar

ADDENDUM

THE INDUS WATERS TREATY 1960[1] BETWEEN THE GOVERNMENT OF INDIA, THE GOVERNMENT OF PAKISTAN AND THE INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT.

SIGNED AT KARACHI, ON 19 SEPTEMBER 1960

PREAMBLE

The Government of India and the Government of Pakistan, being equally desirous of attaining the most complete and satisfactory utilisation of the waters of the Indus system of rivers and recognising the need, therefore, of fixing and delimiting, in a spirit of goodwill and friendship, the rights and obligations of each in relation to the other concerning the use of these waters and of making provision for the settlement, in a cooperative spirit, of all such questions as may hereafter arise in regard to the interpretation or application of the provisions agreed upon herein, have resolved to conclude a Treaty in furtherance of these objectives, and for this purpose have named as their plenipotentiaries :

The Government of India :

Shri Jawaharlal Nehru, Prime Minister of India, and

The Government of Pakistan :

Field Marshal Mohammad Ayub Khan, H.P., H.J., President of Pakistan ;

who, having communicated to each other their respective Full Powers and having found them in good and due form, have agreed upon the following Articles and Annexures :

Article I

DEFINITIONS

As used in this Treaty :

(1) The terms "Article" and "Annexure" mean respectively an Article of, and an Annexure to, this Treaty. Except as otherwise indicated, references to Paragraphs are to the paragraphs in the Article or in the Annexure in which the reference is made.

(2) The term "Tributary" of a river means any surface channel, whether in continuous or intermittent flow and by whatever name called, whose waters in the natural course would fall into that river, e.g. a tributary, a torrent, a natural drainage, an artificial drainage, a *nadi*, a *nallah*, a *nai*, a *khad*, a *cho*. The term also includes any subtributary or branch or subsidiary channel, by whatever name called, whose waters, in the natural course, would directly or otherwise flow into that surface channel.

---

[1] Came into force on 12 January 1961, upon the exchange of the instruments of ratification at New Delhi, with retroactive effect from 1 April 1960, in accordance with article XII (2).

The text printed herein incorporates the corrections effected by the Protocol signed on 27 November, 2 and 23 December 1960 (*see* 419 U.N.T.S 290).

(3) The term “The Indus,” “The Jhelum,” “The Chenab,” “The Ravi,” “The Beas” or “The Sutlej” means the named river (including Connecting Lakes, if any) and all its Tributaries : Provided however that

(i) none of the rivers named above shall be deemed to be a Tributary ;

(ii) The Chenab shall be deemed to include the river Panjnad ; and

(iii) the river Chandra and the river Bhaga shall be deemed to be Tributaries of The Chenab,

(4) The term “Main” added after Indus, Jhelum, Chenab, Sutlej, Beas or Ravi means the main stem of the named river excluding its Tributaries, but including all channels and creeks of the main stem of that river and such Connecting Lakes as form part of the main stem itself. The Jhelum Main shall be deemed to extend up to Verinag, and the Chenab Main up to the confluence of the river Chandra and the river Bhaga,

(5) The term “Eastern Rivers” means The Sutlej, The Beas and The Ravi taken together.

(6) The term “Western Rivers” means The Indus, The Jhelum and The Chenab taken together.

(7) The term “the Rivers” means all the rivers, The Sutlej, The Beas, The Ravi, The Indus, The Jhelum and The Chenab.

(8) The term “Connecting Lake” means any lake which receives water from, or yields water to, any of the Rivers ; but any lake which occasionally and irregularly receives only the spill of any of the Rivers and returns only the whole or part of that spill is not a Connecting Lake.

(9) The term “Agricultural Use” means the use of water for irrigation, except for irrigation of household gardens and public recreational gardens.

(10) The term “Domestic Use” means the use of water for :

(a) drinking, washing, bathing, recreation, sanitation (including the conveyance and dilution of sewage and of industrial and other wastes), stock and poultry, and other like purposes ;

(b) household and municipal purposes (including use for household gardens and public recreational gardens) ; and

(c) industrial purposes (including mining, milling and other like purposes) ;

but the term does not include Agricultural Use or use for the generation of hydro-electric power.

(11) The term “Non-Consumptive Use” means any control or use of water for navigation, floating of timber or other property, flood protection or flood control, fishing or fish culture, wild life or other like beneficial purposes, provided that, exclusive of seepage and evaporation of water incidental to the control or use, the water (undiminished in volume within the practical range of measurement) remains in, or is returned to, the same river or its Tributaries ; but the term does not include Agricultural Use or use for the generation of hydro-electric power.

(12) The term “Transition Period” means the period beginning and ending as provided in Article II (6).

(13) The term “Bank” means the International Bank for Reconstruction and Development.

(14) The term “Commissioner” means either of the Commissioners appointed under the provisions of Article VIII (1) and the term “Commission” means the Permanent Indus Commission constituted in accordance with Article VIII (3).

(15) The term “interference with the waters” means :

(a) Any act of withdrawal therefrom ; or

(b) Any man-made obstruction to their flow which causes a change in the volume (within the practical range of measurement) of the daily flow of the waters : Provided however that an obstruction which involves only an insignificant and incidental change in the volume of the daily flow, for example, fluctuations due to afflux caused by bridge piers or a temporary by-pass, etc., shall not be deemed to be an interference with the waters.

(16) The term "Effective Date" means the date on which this Treaty takes effect in accordance with the provisions of Article XII, that is, the first of April 1960.

Article II

PROVISIONS REGARDING EASTERN RIVERS

(1) All the waters of the Eastern Rivers shall be available for the unrestricted use of India, except as otherwise expressly provided in this Article.

(2) Except for Domestic Use and Non-Consumptive Use, Pakistan shall be under an obligation to let flow, and shall not permit any interference with, the waters of the Sutlej Main and the Ravi Main in the reaches where these rivers flow in Pakistan and have not yet finally crossed into Pakistan. The points of final crossing are the following : (a) near the new Hasta Bund upstream of Suleimanke in the case of the Sutlej Main, and (b) about one and a half miles upstream of the syphon for the B-R-B-D Link in the case of the Ravi Main.

(3) Except for Domestic Use, Non-Consumptive Use and Agricultural Use (as specified in Annexure B), Pakistan shall be under an obligation to let flow, and shall not permit any interference with, the waters (while flowing in Pakistan) of any Tributary which in its natural course joins the Sutlej Main or the Ravi Main before these rivers have finally crossed into Pakistan.

(4) All the waters, while flowing in Pakistan, of any Tributary which, in its natural course, joins the Sutlej Main or the Ravi Main after these rivers have finally crossed into Pakistan shall be available for the unrestricted use of Pakistan : Provided however that this provision shall not be construed as giving Pakistan any claim or right to any releases by India in any such Tributary. If Pakistan should deliver any of the waters of any such Tributary, which on the Effective Date joins the Ravi Main after this river has finally crossed into Pakistan, into a reach of the Ravi Main upstream of this crossing, India shall not make use of these waters ; each Party agrees to establish such discharge observation stations and make such observations as may be necessary for the determination of the component of water available for the use of Pakistan on account of the aforesaid deliveries by Pakistan, and Pakistan agrees to meet the cost of establishing the aforesaid discharge observation stations and making the aforesaid observations.

(5) There shall be a Transition Period during which, to the extent specified in Annexure H, India shall

(i) limit its withdrawals for Agricultural Use,

(ii) limit abstractions for storages, and

(iii) make deliveries to Pakistan from the Eastern Rivers.

(6) The Transition Period shall begin on 1st Apri11960 and it shall end on 31st March 1970, or, if extended under the provisions of Part 8 of Annexure H, on the date up to which it has been extended. In any event, whether or not the replacement referred to in Article IV (1) has been accomplished, the Transition Period shall end not later than 31st Match 1973.

(7) If the Transition Period is extended beyond 31st March 1970, the provisions of Article V (5) shall apply.

(8) If the Transition Period is extended beyond 31st March 1970, the provisions of Paragraph (5) shall apply during the period of extension beyond 31st March 1970.

(9) During the Transition Period, Pakistan shall receive for unrestricted use the waters of the Eastern Rivers which are to be released by India in accordance with the provisions of Annexure H. After the end of the Transition Period, Pakistan shall have no claim or right to releases by India of any of the waters of the Eastern Rivers. In case there are any releases, Pakistan shall enjoy the unrestricted use of the waters so released after they have finally crossed into Pakistan : Provided that in the event that Pakistan makes any use of these waters, Pakistan shall not acquire any right whatsoever, by prescription or otherwise, to a continuance of such releases or such use.

Article III

PROVISIONS REGARDING WESTERN RIVERS

(1) Pakistan shall receive for unrestricted use all those waters of the Western Rivers which India is under obligation to let flow under the provisions of Paragraph (2).

(2) India shall be under an obligation to let flow all the waters of the Western Rivers, and shall not permit any interference with these waters, except for the following uses, restricted (except as provided in item (c) (ii) of Paragraph 5 of Annexure C) in the case of each of the rivers, The Indus, The Jhelum and The Chenab, to the drainage basin thereof :

(a) Domestic Use ;

(b) Non-Consumptive Use ;

(c) Agricultural Use, as set out in Annexure C ; and

(d) Generation of hydro-electric power, as set out in Annexure D.

(3) Pakistan shall have the unrestricted use of all waters originating from sources other than the Eastern Rivers which are delivered by Pakistan into The Ravi or The Sutlej, and India shall not make use of these waters. Each Party agrees to establish such discharge observation stations and make such observations as may be considered necessary by the Commission for the determination of the component of water available for the use of Pakistan on account of the aforesaid deliveries by Pakistan.

(4) Except as provided in Annexures D and E, India shall not store any water of, or construct any storage works on, the Western Rivers.

Article IV

PROVISIONS REGARDING EASTERN RIVERS AND WESTERN RIVERS

(1) Pakistan shall use its best endeavours to construct and bring into operation, with due regard to expedition and economy, that part of a system of works which will accomplish the replacement, from the Western Rivers and other sources, of water supplies for irrigation canals in Pakistan which, on 15th August 1947, were dependent on water supplies from the Eastern Rivers.

(2) Each Party agrees that any Non-Consumptive Use made by it shall be so made as not to materially change, on account of such use, the flow in any channel to the prejudice of the uses on that channel by the other Party under the provisions of this Treaty. In executing any scheme of flood protection or flood control each Party will avoid, as far as practicable, any material damage to the other Party, and any such scheme carried out by India on the Western Rivers shall not involve any use of water or any storage in addition to that provided under Article III.

(3) Nothing in this Treaty shall be construed as having the effect of preventing either Party from undertaking schemes of drainage, river training, conservation of soil against erosion and dredging, or from removal of stones, gravel or sand from the beds of the Rivers : Provided that

(a) in executing any of the schemes mentioned above, each Party will avoid, as far as practicable, any material damage to the other Party ;

(b) any such scheme carried out by India on the Western Rivers shall not involve any use of water or any storage in addition to that provided under Article III ;

(c) except as provided in Paragraph (5) and Article VII (1) (b), India shall not take any action to increase the catchment area, beyond the area on the Effective Date, of any natural or artificial drainage or drain which crosses into Pakistan, and shall not undertake such construction or remodelling of any drainage or drain which so crosses or falls into a drainage or drain which so crosses as might cause material damage in Pakistan or entail the construction of a new drain or enlargement of an existing drainage or drain in Pakistan ; and

(d) should Pakistan desire to increase the catchment area, beyond the area on the Effective Date, of any natural or artificial drainage or drain, which receives drainage waters from India, or, except in an emergency, to pour any waters into it in excess of the quantities received by it as on the Effective Date, Pakistan shall, before undertaking any work for these purposes, increase the capacity of that drainage or drain to the extent necessary so as not to impair its efficacy for dealing with drainage waters received from India as on the Effective Date.

(4) Pakistan shall maintain in good order its portions of the drainages mentioned below with capacities not less than the capacities as on the Effective Date :

(i) Hudiara Drain

(ii) Kasur Nala

(iii) Salimshah Drain

(iv) Fazilka Drain.

(5) If India finds it necessary that any of the drainages mentioned in Paragraph (4) should be deepened or widened in Pakistan, Pakistan agrees to undertake to do so as a work of public interest, provided India agrees to pay the cost of the deepening or widening.

(6) Each Party will use its best endeavours to maintain the natural channels of the Rivers, as on the Effective Date, in such condition as will avoid, as far as practicable, any obstruction to the flow in these channels likely to cause material damage to the other Party.

(7) Neither Party will take any action which would have the effect of diverting the Ravi Main between Madhopur and Lahore, or the Sutlej Main between Harike and Suleimanke, from its natural channel between high banks.

(8) The use of the natural channels of the Rivers for the discharge of flood or other excess waters shall be free and not subject to limitation by either Party, and neither Party shall have any claim against the other in respect of any damage caused by such use. Each Party agrees to communicate to the other Party, as far in advance as practicable, any information it may have in regard to such extraordinary discharges of water from reservoirs and flood flows as may affect the other Party.

(9) Each Party declares its intention to operate its storage dams, barrages and irrigation canals in such manner, consistent with the normal operations of its hydraulic systems, as to avoid, as far as feasible, material damage to the other Party.

(10) Each Party declares its intention to prevent, as far as practicable, undue pollution of the waters of the Rivers which might affect adversely uses similar in nature to those to which

the waters were put on the Effective Date, and agrees to take all reasonable measures to ensure that, before any sewage or industrial waste is allowed to flow into the Rivers, it will be treated, where necessary, in such manner as not materially to affect those uses : Provided that the criterion of reasonableness shall be the customary practice in similar situations on the Rivers.

(11) The Parties agree to adopt, as far as feasible, appropriate measures for the recovery, and restoration to owners, of timber and other property floated or floating down the Rivers, subject to appropriate charges being paid by the owners.

(12) The use of water for industrial purposes under Articles II (2), II (3) and III (2) shall not exceed :

(a) in the case of an industrial process known on the Effective Date, such quantum of use as was customary in that process on the Effective Date ;

(b) in the case of an industrial process not known on the Effective Date :

(i) such quantum of use as was customary on the Effective Date in similar or in any way comparable industrial processes ; or

(ii) if there was no industrial process on the Effective Date similar or in any way comparable to the new process, such quantum of use as would not have a substantially adverse effect on the other Party.

(13) Such part of any water withdrawn for Domestic Use under the provisions of Articles II (3) and III (2) as is subsequently applied to Agricultural Use shall be accounted for as part of the Agricultural Use specified in Annexure B and Annexure C respectively ; each Party will use its best endeavours to return to the same river (directly or through one of its Tributaries) all water withdrawn therefrom for industrial purposes and not consumed either in the industrial processes for which it was withdrawn or in some other Domestic Use.

(14) In the event that either Party should develop a use of the waters of the Rivers which is not in accordance with the provisions of this Treaty, that Party shall not acquire by reason of such use any right, by prescription or otherwise, to a continuance of such use.

(15) Except as otherwise required by the express provisions of this Treaty, nothing in this Treaty shall be construed as affecting existing territorial rights over the waters of any of the Rivers or the beds or banks thereof, or as affecting existing property rights under municipal law over such waters or beds or banks.

Article V

FINANCIAL PROVISIONS

(1) In consideration of the fact that the purpose of part of the system of works referred to in Article IV (1) is the replacement, from the Western Rivers and other sources, of water supplies for irrigation canals in Pakistan which, on 15th August 1947, were dependent on water supplies from the Eastern Rivers, India agrees to make a fixed contribution of Pounds Sterling 62,060,000 towards the costs of these works. The amount in Pounds Sterling of this contribution shall remain unchanged irrespective of any alteration in the par value of any currency.

(2) The sum of Pounds Sterling 62,060,000 specified in Paragraph (1) shall be paid in ten equal annual instalments on the 1st of November of each year. The first of such annual instalments shall be paid on 1st November 1960, or if the Treaty has not entered into force by that date, then within one month after the Treaty enters into force.

(3) Each of the instalments specified in Paragraph (2) shall be paid to the Bank for the credit of the Indus Basin Development Fund to be established and administered by the Bank, and

payment shall be made in Pounds Sterling, or in such other currency or currencies as may from time to time be agreed between India and the Bank.

(4) The payments provided for under the provisions of Paragraph (3) shall be made without deduction or set-off on account of any financial claims of India on Pakistan arising otherwise than under the provisions of this Treaty : Provided that this provision shall in no way absolve Pakistan from the necessity of paying in other ways debts to India which may be outstanding against Pakistan.

(5) If, at the request of Pakistan, the Transition Period is extended in accordance with the provisions of Article II (6) and of Part 8 of Annexure H, the Bank shall thereupon pay to India out of the Indus Basin Development Fund the appropriate amount specified in the Table below :

Table

Period of Aggregate Extension of Transition Period	*Payment to India £ Stg.*
One year	3,125,000
Two years	6,406,250
Three years	9,850,000

(6) The provisions of Article IV (1) and Article V (1) shall not be construed as conferring upon India any right to participate in the decisions as to the system of works which Pakistan constructs pursuant to Article IV (1) or as constituting an assumption of any responsibility by India or as an agreement by India in regard to such works.

(7) Except for such payments as are specifically provided for in this Treaty, neither Party shall be entitled to claim any payment for observance of the provisions of this Treaty or to make any charge for water received from it by the other Party.

Article VI

EXCHANGE OF DATA

(1) The following data with respect to the flow in, and utilisation of the waters of, the Rivers shall be exchanged regularly between the Parties :

(a) Daily (or as observed or estimated less frequently) gauge and discharge data relating to flow of the Rivers at all observation sites.

(b) Daily extractions for or releases from reservoirs.

(c) Daily withdrawals at the heads of all canals operated by government or by a government agency (hereinafter in this Article called canals), including link canals.

(d) Daily escapages from all canals, including link canals.

(e) Daily deliveries from link canals.

These data shall be transmitted monthly by each Party to the other as soon as the data for a calendar month have been collected and tabulated, but not later than three months after the end of the month to which they relate : Provided that such of the data specified above as are considered by either Party to be necessary for operational purposes shall be supplied daily or at less frequent intervals, as may be requested. Should one Party request the supply of any of these data by telegram, telephone, or wireless, it shall reimburse the other Party for the cost of transmission.

(2) If, in addition to the data specified in Paragraph (1) of this Article, either Party requests the supply of any data relating to the hydrology of the Rivers, or to canal or reservoir operation connected with the Rivers, or to any provision of this Treaty, such data shall be supplied by the other Party to the extent that these are available.

Article VII

FUTURE CO-OPERATION

(1) The two Parties recognize that they have a common interest in the optimum development of the Rivers, and, to that end, they declare their intention to co-operate, by mutual agreement, to the fullest possible extent. In particular :

(a) Each Party, to the extent it considers practicable and on agreement by the other Party to pay the costs to be incurred, will, at the request of the other Party, set up or install such hydrologic observation stations within the drainage basins of the Rivers, and set up or install such meteorological observation stations relating thereto and carry out such observations thereat, as may be requested, and will supply the data so obtained.

(b) Each Party, to the extent it considers practicable and on agreement by the other Party to pay the costs to be incurred, will, at the request of the other Party, carry out such new drainage works as may be required in connection with new drainage works of the other Party.

(c) At the request of either Party, the two Parties may, by mutual agreement, co-operate in undertaking engineering works on the Rivers.

The formal arrangements, in each case, shall be as agreed upon between the Parties.

(2) If either Party plans to construct any engineering work which would cause interference with the waters of any of the Rivers and which, in its opinion, would affect the other Party materially, it shall notify the other Party of its plans and shall supply such data relating to the work as may be available and as would enable the other Party to inform itself of the nature, magnitude and effect of the work. If a work would cause interference with the waters of any of the Rivers but would not, in the opinion of the Party planning it, affect the other Party materially, nevertheless the Party planning the work shall, on request, supply the other Party with such data regarding the nature, magnitude and effect, if any, of the work as may be available.

Article VIII

PERMANENT INDUS COMMISSION

(1) India and Pakistan shall each create a permanent post of Commissioner for Indus Waters, and shall appoint to this post, as often as a vacancy occurs, a person who should ordinarily be a high-ranking engineer competent in the field of hydrology and water-use. Unless either Government should decide to take up any particular question directly with the other Government, each Commissioner will be the representative of his Government for all matters arising out of this Treaty, and will serve as the regular channel of communication on all matters relating to the implementation of the Treaty, and, in particular, with respect to

(a) the furnishing or exchange of information or data provided for in the Treaty ; and

(b) the giving of any notice or response to any notice provided for in the Treaty.

(2) The status of each Commissioner and his duties and responsibilities towards his Government will be determined by that Government.

(3) The two Commissioners shall together form the Permanent Indus Commission.

(4) The purpose and functions of the Commission shall be to establish and maintain co-operative arrangements for the implementation of this Treaty, to promote co-operation between the Parties in the development of the waters of the Rivers and, in particular,

(a) to study and report to the two Governments on any problem relating to the development of the waters of the Rivers which may be jointly referred to the Commission by the two Governments : in the event that a reference is made by one Government alone, the Commissioner of the other Government shall obtain the authorization of his Government before he proceeds to act on the reference ;

(b) to make every effort to settle promptly, in accordance with the provisions of Article IX (1) any question arising thereunder ;

(c) to undertake, once in every five years, a general tour of inspection of the Rivers for ascertaining the facts connected with various developments and works on the Rivers ;

(d) to undertake promptly, at the request of either Commissioner, a tour of inspection of such works or sites on the Rivers as may be considered necessary by him for ascertaining the facts connected with those works or sites ; and

(e) to take, during the Transition Period, such steps as may be necessary for the implementation of the provisions of Annexure H.

(5) The Commission shall meet regularly at least once a year, alternately in India and Pakistan. This regular annual meeting shall be held in November or in such other month as may be agreed upon between the Commissioners. The Commission shall also meet when requested by either Commissioner.

(6) To enable the Commissioners to perform their functions in the Commission, each Government agrees to accord to the Commissioner of the other Government the same privileges and immunities as are accorded to representatives of member States to the principal and subsidiary organs of the United Nations under Sections 11, 12 and 13 of Article IV of the Convention on the Privileges and Immunities of the United Nations (dated 13th February, 1946) during the periods specified in those Sections. It is understood and agreed that these privileges and immunities are accorded to the Commissioners not for the personal benefit of the individuals themselves but in order to safeguard the independent exercise of their functions in connection with the Commission ; consequently, the Government appointing the Commissioner not only has the right but is under a duty to waive the immunity of its Commissioner in any case where, in the opinion of the appointing Government, the immunity would impede the course of justice and can be waived without prejudice to the purpose for which the immunity is accorded.

(7) For the purposes of the inspections specified in Paragraph (4) (c) and (d), each Commissioner may be accompanied by two advisers or assistants to whom appropriate facilities will be accorded.

(8) The Commission shall submit to the Government of India and to the Government of Pakistan, before the first of June of every year, a report on its work for the year ended on the preceding 31st of March, and may submit to the two Governments other reports at such times as it may think desirable.

(9) Each Government shall bear the expenses of its Commissioner and his ordinary staff. The cost of any special staff required in connection with the work mentioned in Article VII (1) shall be borne as provided therein.

(10) The Commission shall determine its own procedures.

Article IX

SETTLEMENT OF DIFFERENCES AND DISPUTES

(1) Any question which arises between the Parties concerning the interpretation or application of this Treaty or the existence of any fact which, if established, might constitute a breach of

this Treaty shall first be examined by the Commission, which will endeavour to resolve the question by agreement.

(2) If the Commission does not reach agreement on any of the questions mentioned in Paragraph (1), then a difference will be deemed to have arisen, which shall be dealt with as follows :

(a) Any difference which, in the opinion of either Commissioner, falls within the provisions of Part 1 of Annexure F shall, at the request of either Commissioner, be dealt with by a Neutral Expert in accordance with the provisions of Part 2 of Annexure F ;

(b) If the difference does not come within the provisions of Paragraph (2) (a), or if a Neutral Expert, in accordance with the provisions of Paragraph 7 of Annexure F, has informed the Commission that, in his opinion, the difference, or a part thereof, should be treated as a dispute, then a dispute will be deemed to have arisen which shall be settled in accordance with the provisions of Paragraphs (3), (4) and (5) :

Provided that, at the discretion of the Commission, any difference may either be dealt with by a Neutral Expert in accordance with the provisions of Part 2 of Annexure F or be deemed to be a dispute to be settled in accordance with the provisions of Paragraphs (3), (4) and (5), or may be settled in any other way agreed upon by the Commission.

(3) As soon as a dispute to be settled in accordance with this and the succeeding paragraphs of this Article has arisen, the Commission shall, at the request of either Commissioner, report the fact to the two Governments, as early as practicable, stating in its report the points on which the Commission is in agreement and the issues in dispute, the views of each Commissioner on these issues and his reasons therefor.

(4) Either Government may, following receipt of the report referred to in Paragraph (3), or if it comes to the conclusion that this report is being unduly delayed in the Commission, invite the other Government to resolve the dispute by agreement. In doing so it shall state the names of its negotiators and their readiness to meet with the negotiators to be appointed by the other Government at a time and place to be indicated by the other Government. To assist in these negotiations, the two Governments may agree to enlist the services of one or more mediators acceptable to them.

(5) A Court of Arbitration shall be established to resolve the dispute in the manner provided by Annexure G

(a) upon agreement between the Parties to do so ; or

(b) at the request of either Party, if, after negotiations have begun pursuant to Paragraph (4), in its opinion the dispute is not likely to be resolved by negotiation or mediation ; or

(c) at the request of either Party, if, after the expiry of one month following receipt by the other Government of the invitation referred to in Paragraph (4), that Party comes to the conclusion that the other Government is unduly delaying the negotiations.

(6) The provisions of Paragraphs (3), (4) and (5) shall not apply to any difference while it is being dealt with by a Neutral Expert.

Article X

EMERGENCY PROVISION

If, at any time prior to 31st March 1965, Pakistan should represent to the Bank that, because of the outbreak of large-scale international hostilities arising out of causes beyond the control of Pakistan, it is unable to obtain from abroad the materials and equipment necessary for the completion, by 31st March 1973, of that part of the system of works referred to in Article IV (1)

which relates to the replacement referred to therein, (hereinafter referred to as the "replacement element") and if, after consideration of this representation in consultation with India, the Bank is of the opinion that

(a) these hostilities are on a scale of which the consequence is that Pakistan is unable to obtain in time such materials and equipment as must be procured from abroad for the completion, by 31st March 1973, of the replacement element, and

(b) since the Effective Date, Pakistan has taken all reasonable steps to obtain the said materials and equipment and, with such resources of materials and equipment as have been available to Pakistan both from within Pakistan and from abroad, has carried forward the construction of the replacement element with due diligence and all reasonable expedition,

the Bank shall immediately notify each of the Parties accordingly. The Parties undertake, without prejudice to the provisions of Article XII (3) and (4), that, on being so notified, they will forthwith consult together and enlist the good offices of the Bank in their consultation, with a view to reaching mutual agreement as to whether or not, in the light of all the circumstances then prevailing, any modifications of the provisions of this Treaty are appropriate and advisable and, if so, the nature and the extent of the modifications.

Article XI

GENERAL PROVISIONS

(1) It is expressly understood that

(a) this Treaty governs the rights and obligations of each Party in relation to the other with respect only to the use of the waters of the Rivers and matters incidental thereto ; and

(b) nothing contained in this Treaty, and nothing arising out of the execution thereof, shall be construed as constituting a recognition or waiver (whether tacit, by implication or otherwise) of any rights or claims whatsoever of either of the Parties other than those rights or claims which are expressly recognized or waived in this Treaty.

Each of the Parties agrees that it will not invoke this Treaty, anything contained therein, or anything arising out of the execution thereof, in support of any of its own rights or claims whatsoever or in disputing any of the rights or claims whatsoever of the other Party, other than those rights or claims which are expressly recognized or waived in this Treaty.

(2) Nothing in this Treaty shall be construed by the Parties as in any way establishing any general principle of law or any precedent.

(3) The rights and obligations of each Party under this Treaty shall remain unaffected by any provisions contained in, or by anything arising out of the execution of, any agreement establishing the Indus Basin Development Fund.

Article XII

FINAL PROVISIONS

(1) This Treaty consists of the Preamble, the Articles hereof and Annexures A to H hereto, and may be cited as "The Indus Waters Treaty 1960".

(2) This Treaty shall be ratified and the ratifications thereof shall be exchanged in New Delhi. It shall enter into force upon the exchange of ratifications, and will then take effect retrospectively from the first of April 1960.

(3) The provisions of this Treaty may from time to time be modified by a duly ratified treaty concluded for that purpose between the two Governments.

(4) The provisions of this Treaty, or the provisions of this Treaty as modified under the provisions of Paragraph (3), shall continue in force until terminated by a duly ratified treaty concluded for that purpose between the two Governments.

IN WITNESS WHEREOF the respective Plenipotentiaries have signed this Treaty and have hereunto affixed their seals.

Done in triplicate in English at Karachi on this Nineteenth day of September 1960.

For the Government of India :

(*Signed*) Jawaharlal NEHRU

For the Government of Pakistan :

(*Signed*) Mohammad Ayub KHAN
Field Marshal, H.P., H.J.

For the International Bank for Reconstruction and Development
for the purposes specified in Articles V and X and Annexures F, G and H :

(*Signed*) W. A. B. ILIFF

ANNEXURE A—EXCHANGE OF NOTES BETWEEN GOVERNMENT OF INDIA AND GOVERNMENT OF PAKISTAN

[. . .]

ANNEXURE B—AGRICULTURAL USE BY PAKISTAN FROM CERTAIN TRIBUTARIES OF THE RAVI

[. . .]

ANNEXURE C—AGRICULTURAL USE BY INDIA FROM THE WESTERN RIVERS

(Article III (2) (c))

1. The provisions of this Annexure shall apply with respect to the Agricultural Use by India from the Western Rivers under the provisions of Article III (2) (c) and, subject to the provisions of this Annexure, such use shall be unrestricted.

2. As used in this Annexure, the term "Irrigated Cropped Area" means the total area under irrigated crops in a year, the same area being counted twice if it bears different crops in *kharif* and *rabi*. The term shall be deemed to exclude small blocks of *ghair mumkim* lands in an irrigated field, lands on which cultivation is dependent on rain or snow and to which no irrigation water is applied, areas naturally inundated by river flow and cultivated on *sailab* thereafter, any area under floating gardens or *demb* lands in and along any lakes, and any area under waterplants growing within the water-spread of any lake or in standing water in a natural depression.

3. India may withdraw from the Chenab Main such waters as India may need for Agricultural Use on the following canals limited to the maximum withdrawals noted against each :

Name of Canal	*Maxiumum Withdrawals for Agricultural Use*
(a) Ranbir Canal	1,000 cusecs from 15th April to 14th October, and 350 cusecs from 15th October to 14th April.
(b) Pratap Canal	400 cusecs from 15th April to 14th October, and 100 cusecs from 15th October to 14th April.

Provided that :

(i) The maximum withdrawals shown above shall be exclusive of any withdrawals which may be made through these canals for purposes of silt extraction on condition that the waters withdrawn for silt extraction are returned to The Chenab.

(ii) India may make additional withdrawals through the Ranbir Canal up to 250 cusecs for hydro-electric generation on condition that the waters so withdrawn are returned to The Chenab.

(iii) If India should construct a barrage across the Chenab Main below the head regulators of these two canals, the withdrawals to be then made, limited to the amounts specified in (a) and (b) above, during each 10-day period or subperiod thereof, shall be as determined by the Commission in accordance with sound irrigation practice and, in the absence of agreement between the Commissioners, by a Neutral Expert in accordance with the provisions of Annexure F.

4. Apart from the irrigation from the Ranbir and Pratap Canals under the provisions of Paragraph 3, India may continue to irrigate from the Western Rivers those areas which were so irrigated as on the Effective Date.

5. In addition to such withdrawals as may be made in accordance with the provisions of Paragraphs 3 and 4, India may, subject to the provisions of Paragraphs 6, 7, 8 and 9, make further withdrawals from the Western Rivers to the extent India may consider necessary to meet the irrigation needs of the areas specified below :

Particulars	*Maximum Irrigated Cropped Area (over and above the cropped area irrigated under the provisions of Paragraphs 3 and 4) (acres)*
(a) From The Indus, in its drainage basin	70,000
(b) From The Jhelum, in its drainage basin	400,000
(c) From The Chenab	
(i) in its drainage basin	225,000 of which not more than 100,000 acres will be in the Jammu District.
(ii) outside its drainage basin in the area west of the Deg Nadi (also called Devak River), the aggregate capacity of irrigating channels leading out of the drainage basin of the Chenab to this area not to exceed 120 cusecs.	6,000

Provided that

(i) in addition to the maximum Irrigated Cropped Area specified above, India may irrigate road-side trees from any source whatever ;

(ii) the maximum Irrigated Cropped Area shown against items (a), (b) and (c) (i) above shall be deemed to include cropped areas, if any, irrigated from an open well, a tube-well, a spring, a lake (other than a Connecting lake) or a tank, in excess of the areas so irrigated as on the Effective Date ; and

(iii) the aggregate of the areas specified against items (a), (b) and (c) (i) above may be re-distributed among the three drainage basins in such manner as may be agreed upon between the Commissioners.

6. (a) Within the limits of the maximum Irrigated Cropped Areas specified against items (b) and (c) (i) in Paragraph 5, there shall be no restriction on the development of such of these areas as may be irrigated from an open well, a tube-well, a spring, a lake (other than a Connecting Lake) or a tank.

(b) Within the limits of the maximum Irrigated Cropped Areas specified against items (b) and (c) in Paragraph 5, there shall be no restriction on the development of such of these areas as may be irrigated from General Storage (as defined in Annexure E) : the areas irrigated from General Storage may, however, receive irrigation from river flow also, but, unless the Commissioners otherwise agree, only in the following periods :-

(i) from The Jhelum : 21st June to 20th August

(ii) from The Chenab : 21st June to 31st August :

Provided that withdrawals for such irrigation, whether from General Storage or from river flow, are controlled by Government.

7. Within the limits of the maximum Irrigated Cropped Areas specified against items (b) and (c) in Paragraph 5, the development of these areas by withdrawals from river flow (as distinct from withdrawals from General Storage *cum* river flow in accordance with Paragraph 6 (b)) shall be regulated as follows :

(a) Until India can release water from Conservation Storage (as defined in Annexure E) in accordance with sub-paragraphs (b) and (c) below, the new area developed shall not exceed the following :

(i) from The Jhelum : 150,000 acres

(ii) from The Chenab : 25,000 acres during the Transition Period and 50,000 acres after the end of the Transition Period.

(b) In addition to the areas specified in (a) above, there may be developed from The Jhelum or The Chenab an aggregate area of 150,000 acres if there is released annually from Conservation Storage, in accordance with Paragraph 8, a volume of 0.2 MAF into The Jhelum and a volume of 0.1 MAF into The Chenab ; provided that India shall have the option to store on and release into The Chenab the whole or a part of the volume of 0.2 MAF specified above for release into The Jhelum.

(c) Any additional areas over and above those specified in (a) and (b) above may be developed if there is released annually from Conservation Storage a volume of 0.2 MAF into The Jhelum or The Chenab, in accordance with Paragraph 8, in addition to the releases specified in (b) above.

8. The releases from Conservation Storage, as specified in Paragraphs 7 (b) and 7 (c), shall be made in accordance with a schedule to be determined by the Commission which shall keep in view, first, the effect, if any, on Agricultural Use by Pakistan consequent on the reduction in supplies available to Pakistan as a result of the withdrawals made by India under the provisions of Paragraph 7 and, then, the requirements, if any, of hydro-electric power to be developed by India from these releases. In the absence of agreement between the Commissioners, the matter may be referred under the provisions of Article IX (2) (a) for decision to a Neutral Expert.

9. On those Tributaries of The Jhelum on which there is any Agricultural Use or hydro-electric use by Pakistan, any new Agricultural Use by India shall be so made as not to affect adversely the then existing Agricultural Use or hydro-electric use by Pakistan on those Tributaries.

10. Not later than 31st March 1961, India shall furnish to Pakistan a statement showing, for each of the Districts and Tehsils irrigated from the Western Rivers, the Irrigated Cropped Area as on the Effective Date (excluding only the area irrigated under the provisions of Paragraph 3), arranged in accordance with items (a), (b) and (c) (i) of Paragraph 5 : Provided that, in the case of areas in the Punjab, the date may be extended to 30th September 1961.

11. (a) As soon as the statistics for each crop year (commencing with the beginning of *kharif* and ending with the end of the following *rabi*) have been compiled at the District Headquarters, but not later than the 30th November following the end of that crop year, India shall furnish to Pakistan a statement showing for each of the Districts and Tehsils irrigated from the Western Rivers, the total Irrigated Cropped Areas (excluding the area irrigated under the provisions of Paragraph 3) arranged in accordance with items (a), (b), (c) (i) and (c) (ii) of Paragraph 5 : Provided that, in the case of areas in the Punjab, the 30th November date specified above may be extended to the following 30th June in the event of failure of communications.

(b) If the limits specified in Paragraph 7 (a) or 7 (b) are exceeded for any crop year, the statement shall also show the figures for Irrigated Cropped Areas falling under Paragraph 6 (a) and 6 (b) respectively, unless appropriate releases from Conservation Storage under the provisions of Paragraph 8 have already begun to be made.

ANNEXURE D—GENERATION OF HYDRO-ELECTRIC POWER BY INDIA ON THE WESTERN RIVERS

(Article III (2) (d))

1. The provisions of this Annexure shall apply with respect to the use by India of the waters of the Western Rivers for the generation of hydro-electric power under the provisions of Article III (2) (d) and, subject to the provisions of this Annexure, such use shall be unrestricted : Provided that the design, construction and operation of new hydro-electric plants which are incorporated in a Storage Work (as defined in Annexure E) shall be governed by the relevant provisions of Annexure E.

PART 1—DEFINITIONS

2. As used in this Annexure :

(a) "Dead Storage" means that portion of the storage which is not used for operational purposes and "Dead Storage Level" means the level corresponding to Dead Storage.

(b) "Live Storage" means all storage above Dead Storage.

(c) "Pondage" means Live Storage of only sufficient magnitude to meet fluctuations in the discharge of the turbines arising from variations in the daily and the weekly loads of the plant.

(d) "Full Pondage Level" means the level corresponding to the maximum Pondage provided in the design in accordance with Paragraph 8 (c).

(e) "Surcharge Storage" means uncontrollable storage occupying space above the Full Pondage Level.

(f) "Operating Pool" means the storage capacity between Dead Storage level and Full Pondage Level.

(g) "Run-of-River Plant" means a hydro-electric plant that develops power without Live Storage as an integral part of the plant, except for Pondage and Surcharge Storage.

(h) "Regulating Basin" means the basin whose only purpose is to even out fluctuations in the discharge from the turbines arising from variations in the daily and the weekly loads of the plant.

(i) "Firm Power" means the hydro-electric power corresponding to the minimum mean discharge at the site of a plant, the minimum mean discharge being calculated as follows :

The average discharge for each 10-day period (1st to l0th, 11th to 20th and 21st to the end of the month) will be worked out for each year for which discharge data, whether observed or estimated, are proposed to be studied for purposes of design. The mean of the yearly values for each 10-day period will then be worked out. The lowest of the mean values thus obtained will be taken as the minimum mean discharge. The studies will be based on data for as long a period as available but may be limited to the latest 5 years in the case of Small Plants (as defined in Paragraph 18) and to the latest 25 years in the case of other Plants (as defined in Paragraph 8).

(j) "Secondary Power" means the power, other than Firm Power, available only during certain periods of the year.

PART 2—HYDRO-ELECTRIC PLANTS IN OPERATION, OR UNDER CONSTRUCTION, AS ON THE EFFECTIVE DATE

3. There shall be no restriction on the operation of the following hydro-electric plants which were in operation as on the Effective Date :

Name of Plant	*Capacity (exclusive of standby units) (kilowatts)*
(i) Pahalgam	186
(ii) Bandipura	30
(iii) Dachhigam	40
(iv) Ranbir Canal	1,200
(v) Udhampur	640
(vi) Poonch	160

4. There shall be no restriction on the completion by India, in accordance with the design adopted prior to the Effective Date, or on the operation by India, of the following hydro-electric plants which were actually under construction on the Effective Date, whether or not the plant was on that date in partial operation :

Name of Plant	*Designed capacity (exclusive of standby units) (kilowatts)*
(i) Mahora	12,000
(ii) Ganderbal	15,000
(iii) Kupwara	150
(iv) Bhadarwah	600
(v) Kishtwar	350
(vi) Rajouri	650
(vii) Chinani	14,000
(viii) Nichalani Banihal	600

5. As soon as India finds it possible to do so, but not later than 31st March 1961, India shall communicate to Pakistan the information specified in Appendix I to this Annexure for each of the plants specified in Paragraphs 3 and 4. If any such information is not available or is not pertinent to the design of the plant or to the conditions at the site, it will be so stated.

6. (a) If any alteration proposed in the design of any of the plants specified in Paragraphs 3 and 4 would result in a material change in the information furnished to Pakistan under the provisions of Paragraph 5, India shall, at least 4 months in advance of making the alteration, communicate particulars of the change to Pakistan in writing and the provisions of Paragraph 7 shall then apply.

(b) In the event of an emergency arising which requires repairs to be undertaken to protect the integrity of any of the plants specified in Paragraphs 3 and 4, India may undertake immediately the necessary repairs or alterations and, if these repairs or alterations result in a change in the information furnished to Pakistan under the provisions of Paragraph 5, India shall as soon as possible communicate particulars of the change to Pakistan in writing. The provisions of Paragraph 7 shall then apply.

7. Within three months of the receipt of the particulars specified in Paragraph 6, Pakistan shall communicate to India in writing any objection it may have with regard to the proposed change on the ground that the change involves a material departure from the criteria set out in Paragraph 8 or 18 of this Annexure or Paragraph 11 of Annexure E as the case may be. If no objection is received by India from Pakistan within the specified period of three months, then Pakistan shall be deemed to have no objection. If a question arises as to whether or not the change involves a material departure from such of the criteria mentioned above as may

be applicable, then either Party may proceed to have the question resolved in accordance with the provisions of Article IX (l) and (2).

PART 3—NEW RUN-OF-RIVER PLANTS

8. Except as provided in Paragraph 18, the design of any new Run-of-River Plant (hereinafter in this Part referred to as a Plant) shall conform to the following criteria :

(a) The works themselves shall not be capable of raising artificially the water level in the Operating Pool above the Full Pondage Level specified in the design.

(b) The design of the works shall take due account of the requirements of Surcharge Storage and of Secondary Power.

(c) The maximum Pondage in the Operating Pool shall not exceed twice the Pondage required for Firm Power.

(d) There shall be no outlets below the Dead Storage Level, unless necessary for sediment control or any other technical purpose ; any such outlet shall be of the minimum size, and located at the highest level, consistent with sound and economical design and with satisfactory operation of the works.

(e) If the conditions at the site of a Plant make a gated spillway necessary, the bottom level of the gates in normal closed position shall be located at the highest level consistent with sound and economical design and satisfactory construction and operation of the works.

(f) The intakes for the turbines shall be located at the highest level consistent with satisfactory and economical construction and operation of the Plant as a Run-of-River Plant and with customary and accepted practice of design for the designated range of the Plant's operation.

(g) If any Plant is constructed on the Chenab Main at a site below Kotru (Longitude 74°-59' East and Latitude 33°-09' North), a Regulating Basin shall be incorporated.

9. To enable Pakistan to satisfy itself that the design of a Plant conforms to the criteria mentioned in Paragraph 8, India shall, at least six months in advance of the beginning of construction of river works connected with the Plant, communicate to Pakistan, in writing, the information specified in Appendix II to this Annexure. If any such information is not available or is not pertinent to the design of the Plant or to the conditions at the site, it will be so stated.

10. Within three months of the receipt by Pakistan of the information specified in Paragraph 9, Pakistan shall communicate to India, in writing, any objection that it may have with regard to the proposed design on the ground that it does not conform to the criteria mentioned in Paragraph 8. If no objection is received by India from Pakistan within the specified period of three months, then Pakistan shall be deemed to have no objection.

11. If a question arises as to whether or not the design of a Plant conforms to the criteria set out in Paragraph 8, then either Party may proceed to have the question resolved in accordance with the provisions of Article IX (l) and (2).

12. (a) If any alteration proposed in the design of a Plant before it comes into operation would result in a material change in the information furnished to Pakistan under the provisions of Paragraph 9, India shall immediately communicate particulars of the change to Pakistan in writing and the provisions of Paragraphs 10 and 11 shall then apply, but the period of three months specified in Paragraph 10 shall be reduced to two months.

(b) If any alteration proposed in the design of a Plant after it comes into operation would result in a material change in the information furnished to Pakistan under the provisions of Paragraph 9, India shall, at least four months in advance of making the alteration,

communicate particulars of the change to Pakistan in writing and the provisions of Paragraphs 10 and 11 shall then apply, but the period of three months specified in Paragraph 10 shall be reduced to two months.

13. In the event of an emergency arising which requires repairs to be undertaken to protect the integrity of a Plant, India may undertake immediately the necessary repairs or alterations ; if these repairs or alterations result in a change in the information furnished to Pakistan under the provisions of Paragraph 9, India shall, as soon as possible, communicate particulars of the change to Pakistan in writing to enable Pakistan to satisfy itself that after such change the design of the Plant conforms to the criteria specified in Paragraph 8. The provisions of Paragraphs 10 and 11 shall then apply.

14. The filling of Dead Storage shall be carried out in accordance with the provisions of Paragraph 18 or 19 of Annexure E.

15. Subject to the provisions of Paragraph 17, the works connected with a Plant shall be so operated that (a) the volume of water received in the river upstream of the Plant, during any period of seven consecutive days, shall be delivered into the river below the Plant during the same seven-day period, and (b) in any one period of 24 hours within that seven-day period, the volume delivered into the river below the Plant shall be not less than 30%, and not more than 130%, of the volume received in the river above the Plant during the same 24-hour period : Provided however that :

    (i) where a Plant is located at a site on the Chenab Main below Ramban, the volume of water received in the river upstream of the Plant in any one period of 24 hours shall be delivered into the river below the Plant within the same period of 24 hours ;

    (ii) where a Plant is located at a site on the Chenab Main above Ramban, the volume of water delivered into the river below the Plant in any one period of 24 hours shall not be less than 50% and not more than 130%, of the volume received above the Plant during the same 24-hour period ; and

    (iii) where a Plant is located on a Tributary of The Jhelum on which Pakistan has any Agricultural use or hydro-electric use, the water released below the Plant may be delivered, if necessary, into another Tributary but only to the extent that the then existing Agricultural Use or hydro-electric use by Pakistan on the former Tributary would not be adversely affected.

16. For the purpose of Paragraph 15, the period of 24 hours shall commence at 8 a.m. daily and the period of 7 consecutive days shall commence at 8 a.m. on every Saturday. The time shall be Indian Standard Time.

17. The provisions of Paragraph 15 shall not apply during the period when the Dead Storage at a Plant is being filled in accordance with the provisions of Paragraph 14. In applying the provisions of Paragraph 15 :

    (a) a tolerance of 10% in volume shall be permissible ; and

    (b) Surcharge Storage shall be ignored.

18. The provisions of Paragraphs 8, 9, 10, 11, 12 and 13 shall not apply to a new Run-of-River Plant which is located on a Tributary and which conforms to the following criteria (hereinafter referred to as a Small Plant) :

    (a) the aggregate designed maximum discharge through the turbines does not exceed 300 cusecs ;

    (b) no storage is involved in connection with the Small Plant, except the Pondage and the storage incidental to the diversion structure ; and

(c) the crest of the diversion structure across the Tributary, or the top level of the gates, if any, shall not be higher than 20 feet above the mean bed of the Tributary at the site of the structure.

19. The information specified in Appendix III to this Annexure shall be communicated to Pakistan by India at least two months in advance of the beginning of construction of the river works connected with a Small Plant. If any such information is not available or is not pertinent to the design of the Small Plant or to the conditions at the site, it will be so stated.

20. Within two months of the receipt by Pakistan of the information specified in Appendix III, Pakistan shall communicate to India, in writing, any objection that it may have with regard to the proposed design on the ground that it does not conform to the criteria mentioned in Paragraph 18. If no objection is received by India from Pakistan within the specified period of two months, then Pakistan shall be deemed to have no objection.

21. If a question arises as to whether or not the design of a Small Plant conforms to the criteria set out in Paragraph 18, then either Party may proceed to have the question resolved in accordance with the provisions of Article IX (1) and (2).

22. If any alteration in the design of a Small Plant, whether during the construction period or subsequently, results in a change in the information furnished to Pakistan under the provisions of Paragraph 19, then India shall immediately communicate the change in writing to Pakistan.

23. If, with any alteration proposed in the design of a Small Plant, the design would cease to comply with the criteria set out in Paragraph 18, then the provisions of Paragraphs 18 to 22 inclusive shall no longer apply and, in lieu thereof, the provisions of Paragraphs 8 to 13 inclusive shall apply.

PART 4—NEW PLANTS ON IRRIGATION CHANNELS

24. Notwithstanding the foregoing provisions of this Annexure, there shall be no restriction on the construction and operation by India of new hydro-electric plants on any irrigation channel taking off the Western Rivers, provided that

(a) the works incorporate no storage other than Pondage and the Dead Storage incidental to the diversion structure, and

(b) no additional supplies are run in the irrigation channel for the purpose of generating hydro-electric power.

PART 5—GENERAL

25. If the change referred to in Paragraphs 6 (a) and 12 is not material, India shall communicate particulars of the change to Pakistan, in writing, as soon as the alteration has been made or the repairs have been undertaken. The provisions of Paragraph 7 or Paragraph 23, as the case may be, shall then apply.

APPENDIX I TO ANNEXURE D

(*Paragraph 5*)

1. Location of Plant

General map showing the location of the site ; if on a Tributary, its situation with respect to the main river.

2. Hydraulic Data

(a) Stage-area and stage-capacity curves of the reservoir, forebay and Regulating Basin.

(b) Full Pondage Level, Dead Storage Level and Operating Pool.

(c) Dead Storage capacity.

3. Particulars of Design

(a) Type of spillway, length and crest level ; size, number and top level of spillway gates.

(b) Outlet works : function, type, size, number, maximum designed capacity and sill levels.

(c) Aggregate designed maximum discharge through the turbines.

(d) Maximum aggregate capacity of power units (exclusive of standby units) for Firm Power and Secondary Power.

(e) Regulating Basin and its outlet works : dimensions and maximum discharge capacity.

4. General

Probable date of completion of river works, and dates on which various stages of the plant would come into operation.

APPENDIX II TO ANNEXURE D

(*Paragraph 9*)

1. Location of Plant

General map showing the location of the site ; if on a Tributary, its situation with respect to the main river.

2. Hydrologic Data

(a) General map (Scale : ¼ inch or more = 1 mile) showing the discharge observation site or sites or rainfall gauge stations on whose data the design is based. In case of a Plant on a Tributary, this map should also show the catchment area of the Tributary above the site.

(b) Observed or estimated daily river discharge data on which the design is based (observed data will be given for as long a period as available ; estimated data will be given for as long a period as possible ; in both cases data may be limited to the latest 25 years).

(c) Flood data, observed or estimated (with details of estimation).

(d) Gauge-discharge curve or curves for site or sites mentioned in (a) above.

3. Hydraulic Data

(a) Stage-area and stage-capacity curves of the reservoir, forebay and Regulating Basin, with contoured survey maps on which based.

(b) Full Pondage Level, Dead Storage Level and Operating Pool together with the calculations for the Operating Pool.

(c) Dead Storage capacity.

(d) Estimated evaporation losses in the reservoir, Regulating Basin, head-race, forebay and tail-race.

(e) Maximum designed flood discharge, discharge-capacity curve for spillway and maximum designed flood level.

(f) Designated range of operation.

4. Particulars of Design

(a) Dimensioned plan showing dam, spillway, intake and outlet works, diversion works, head-race and forebay, powerhouse, tail-race and Regulating Basin.

(b) Type of dam, length and height above mean bed of river.

(c) Cross-section of the river at the site ; mean bed level.

(d) Type of spillway, length and crest level ; size, number and top level of spillway gates.

(e) Type of intake, maximum designed capacity, number and size, sill levels ; diversion works.

(f) Head-race and tail-race : length, size, maximum designed capacity.

(g) Outlet works : function, type, size, number, maximum designed capacity and sill levels.

(h) Discharge proposed to be passed through the Plant. initially and ultimately, and expected variations in the discharge on account of the daily and the weekly load fluctuations.

(i) Maximum aggregate capacity of power units (exclusive of standby units) for Firm Power and Secondary Power.

(j) Regulating Basin and its outlet works : type, number, size, sill levels and designed maximum discharge capacity.

5. General

(a) Estimated effect of proposed development on the flow pattern below the last plant downstream (with details of estimation).

(b) Probable date of completion of river works, and dates on which various stages of the Plant would come into operation.

APPENDIX III TO ANNEXURE D

(*Paragraph 19*)

I. *Location of Small Plant*

General map showing the location of the site on the Tributary and its situation with respect to the main river.

2. *Hydrologic Data*

(a) Observed or estimated daily Tributary discharge (observed data will be given for as long a period as available ; estimated data will be given for as long a period as possible ; in both cases, data may be limited to the latest five years).

(b) Flood data, observed or estimated (with details of estimation).

(c) Gauge-discharge curve relating to discharge site.

3. Hydraulic Data

(a) Stage-area and stage-capacity curves of the forebay with survey map on which based.

(b) Full Pondage Level, Dead Storage Level and Operating Pool together with the calculations for the Operating Pool.

4. *Particulars of Design*

(a) Dimensioned plan showing diversion works, outlet works, head-race and forebay, powerhouse and tail-race.

(b) Type of diversion works, length and height of crest or top level of gates above the mean bed of the Tributary at the site.

(c) Cross-section of the Tributary at the site ; mean bed level.

(d) Head-race and tail-race : length, size and designed maximum capacity.

(e) Aggregate designed maximum discharge through the turbines.

(f) Spillway, if any : type, length and crest level ; size, number and top level of gates.

(g) Maximum aggregate capacity of power units (exclusive of standby units) for Firm Power and Secondary Power.

ANNEXURE E—STORAGE OF WATERS BY INDIA ON THE WESTERN RIVERS

(Article III (4))

1. The provisions of this Annexure shall apply with respect to the storage of water on the Western Rivers, and to the construction and operation of Storage Works thereon, by India under the provisions of Article III (4).

2. As used in this Annexure :

(a) "Storage Work" means a work constructed for the purpose of impounding the waters of a stream ; but excludes

(i) a Small Tank,

(ii) the works specified in Paragraphs 3 and 4 of Annexure D, and

(iii) a new work constructed in accordance with the provisions of Annexure D.

(b) "Reservoir Capacity" means the gross volume of water which can be stored in the reservoir.

(c) "Dead Storage Capacity" means that portion of the Reservoir Capacity which is not used for operational purposes, and "Dead Storage" means the corresponding volume of water.

(d) "Live Storage Capacity" means the Reservoir Capacity excluding Dead Storage Capacity, and "Live Storage" means the corresponding volume of water.

(e) "Flood Storage Capacity" means that portion of the Reservoir Capacity which is reserved for the temporary storage of flood waters in order to regulate downstream flows, and "Flood Storage" means the corresponding volume of water.

(f) "Surcharge Storage Capacity" means the Reservoir Capacity between the crest of an uncontrolled spillway or the top of the crest gates in normal closed position and the maximum water elevation above this level for which the dam is designed, and "Surcharge Storage" means the corresponding volume of water.

(g) "Conservation Storage Capacity" means the Reservoir Capacity excluding Flood Storage Capacity, Dead Storage Capacity and Surcharge Storage Capacity, and "Conservation Storage" means the corresponding volume of water.

(h) "Power Storage Capacity" means that portion of the Conservation Storage Capacity which is designated to be used for generating electric energy, and "Power Storage" means the corresponding volume of water.

(i) "General Storage Capacity" means the Conservation Storage Capacity excluding Power Storage Capacity, and "General Storage" means the corresponding volume of water.

(j) "Dead Storage Level" means the level of water in a reservoir corresponding to Dead Storage Capacity, below which level the reservoir does not operate.

(k) "Full Reservoir Level" means the level of water in a reservoir corresponding to Conservation Storage Capacity.

(l) "Multi-purpose Reservoir" means a reservoir capable of and intended for use for more than one purpose.

(m) "Single-purpose Reservoir" means a reservoir capable of and intended for use for only one purpose.

(n) "Small Tank" means a tank having a Live Storage of less than 700 acre-feet and fed only from a non-perennial small stream : Provided that the Dead Storage does not exceed 50 acre-feet.

3. There shall be no restriction on the operation as heretofore by India of those Storage Works which were in operation as on the Effective Date or on the construction and operation of Small Tanks.

4. As soon as India finds it possible to do so, but not later than 31st March 1961, India shall communicate to Pakistan in writing the information specified in the Appendix to this Annexure for such Storage Works as were in operation as on the Effective Date. If any such information is not available or is not pertinent to the design of the Storage Work or to the conditions at the site, it will be so stated.

5. (a) If any alteration proposed in the design of any of the Storage Works referred to in Paragraph 3 would result in a material change in the information furnished to Pakistan under the provisions of Paragraph 4, India shall, at least 4 months in advance of making the alteration, communicate particulars of the change to Pakistan in writing and the provisions of Paragraph 6 shall then apply.

(b) In the event of an emergency arising which requires repairs to be undertaken to protect the integrity of any of the Storage Works referred to in Paragraph 3, India may undertake immediately the necessary repairs or alterations and, if these repairs or alterations result in a change in the information furnished to Pakistan under the provisions of Paragraph 4, India shall as soon as possible communicate particulars of the change to Pakistan in writing. The provisions of Paragraph 6 shall then apply.

6. Within three months of the receipt of the particulars specified in Paragraph 5, Pakistan shall communicate to India in writing any objection it may have with regard to the proposed change on the ground that the change involves a material departure from the criteria set out in Paragraph 11. If no objection is received by India from Pakistan within the specified period of three months, then Pakistan shall be deemed to have no objection. If a question arises as to whether or not the change involves a material departure from such of the criteria mentioned above as may be applicable, then either Party may proceed to have the question resolved in accordance with the provisions of Article IX (1) and (2).

7. The aggregate storage capacity of all Single-purpose and Multi-purpose Reservoirs which may be constructed by India after the Effective Date on each of the River Systems specified in Column (2) of the following table shall not exceed, for each of the categories shown in Columns (3), (4) and (5), the quantities specified therein :

	River System	Conservation Storage Capacity		
		General Storage Capacity	Power Storage Capacity	Flood Storage Capacity
(1)	(2)	(3)	(4)	(5)
			million acre-feet	
(a)	The Indus	0.25	0.15	Nil
(b)	The Jhelum (excluding the Jhelum Main)	0.50	0.25	0.75
(c)	The Jhelum Main	Nil	Nil	As provided in Paragraph 9
(d)	The Chenab (excluding the Chenab Main)	0.50	0.60	Nil
(e)	The Chenab Main	Nil	0.60	Nil

Provided that

(i) the storage specified in Column (3) above may be used for any purpose whatever, including the generation of electric energy ;

(ii) the storage specified in Column (4) above may also be put to Non-Consumptive Use (other than flood protection or flood control) or to Domestic Use ;

(iii) India shall have the option to increase the Power Storage Capacity specified against item (d) above by making a reduction by an equal amount in the Power Storage Capacity specified against items (b) or (e) above ; and

(iv) Storage Works to provide the Power Storage Capacity on the Chenab Main specified against item (e) above shall not be constructed at a point below Naunut (Latitude 33° 19’ N. and Longitude 75° 59’ E.).

8. The figures specified in Paragraph 7 shall be exclusive of the following :

(a) Storage in any Small Tank.

(b) Any natural storage in a Connecting Lake, that is to say, storage not resulting from any man-made works.

(c) Waters which, without any man-made channel or works, spill into natural depressions or borrow-pits during floods.

(d) Dead Storage.

(e) The volume of Pondage for hydro-electric plants under Annexure D and under Paragraph 21 (a).

(f) Surcharge Storage.

(g) Storage in a Regulating Basin (as defined in Annexure D).

(h) Storage incidental to a barrage on the Jhelum Main or on the Chenab Main not exceeding 10,000 acre-feet.

9. India may construct on the Jhelum Main such works as it may consider necessary for flood control of the Jhelum Main and may complete any such works as were under construction on the Effective Date : Provided that

(i) any storage which may be effected by such works shall be confined to off-channel storage in side valleys, depressions or lakes and will not involve any storage in the Jhelum Main itself ; and

(ii) except for the part held in lakes, borrow-pits or natural depressions, the stored waters shall be released as quickly as possible after the flood recedes and returned to the Jhelum Main lower down.

These works shall be constructed in accordance with the provisions of Paragraph 11 (d).

10. Notwithstanding the provisions of Paragraph 7, any Storage Work to be constructed on a Tributary of The Jhelum on which Pakistan has any Agricultural Use or hydro-electric use shall be so designed and operated as not to adversely affect the then existing Agricultural Use or hydro-electric use on that Tributary.

11. The design of any Storage Work (other than a Storage Work falling under Paragraph 3) shall conform to the following criteria :

(a) The Storage Work shall not be capable of raising artificially the water level in the reservoir higher than the designed Full Reservoir Level except to the extent necessary for Flood Storage, if any, specified in the design.

(b) The design of the works shall take due account of the requirements of Surcharge Storage.

(c) The volume between the Full Reservoir Level and the Dead Storage Level of any reservoir shall not exceed the Conservation Storage Capacity specified in the design.

(d) With respect to the Flood Storage mentioned in Paragraph 9, the design of the works on the Jhelum Main shall be such that no water can spill from the Jhelum Main into the off-channel storage except when the water level in the Jhelum Main rises above the low flood stage.

(e) Outlets or other works of sufficient capacity shall be provided to deliver into the river downstream the flow of the river received upstream of the Storage Work, except during freshets or floods. These outlets or works shall be located at the highest level consistent with sound and economical design and with satisfactory operation of the Storage Work.

(f) Any outlets below the Dead Storage Level necessary for sediment control or any other technical purpose shall be of the minimum size, and located at the highest level, consistent with sound and economical design and with satisfactory operation of the Storage Work.

(g) If a power plant is incorporated in the Storage Work, the intakes for the turbines shall be located at the highest level consistent with satisfactory and economical construction and operation of the plant and with customary and accepted practice of design for the designated range of the plant's operation.

12. To enable Pakistan to satisfy itself that the design of a Storage Work (other than a Storage Work falling under Paragraph 3) conforms to the criteria mentioned in Paragraph 11, India shall, at least six months in advance of the beginning of construction of the Storage Work, communicate to Pakistan in writing the information specified in the Appendix to this Annexure ; if any such information is not available or is not pertinent to the design of the Storage Work or to the conditions at the site, it will be so stated :

Provided that, in the case of a Storage Work falling under Paragraph 9,

(i) if the work is a new work, the period of six months shall be reduced to four months, and

(ii) if the work is a work under construction on the Effective Date, the information shall be furnished not later than 31st December 1960.

13. Within three months (or two months, in the case of a Storage Work specified in Paragraph 9) of the receipt by Pakistan of the information specified in Paragraph 12, Pakistan shall communicate to India in writing any objection that it may have with regard

to the proposed design on the ground that the design does not conform to the criteria mentioned in Paragraph 11. If no objection is received by India from Pakistan within the specified period of three months (or two months, in the case of a Storage Work specified in Paragraph 9), then Pakistan shall be deemed to have no objection.

14. If a question arises as to whether or not the design of a Storage Work (other than a Storage Work falling under Paragraph 3) conforms to the criteria set out in Paragraph 11, then either Party may proceed to have the question resolved in accordance with the provisions of Article IX (1) and (2).

15. (a) If any alteration proposed in the design of a Storage Work (other than a Storage Work falling under Paragraph 3) before it comes into operation would result in a material change in the information furnished to Pakistan under the provisions of Paragraph 12, India shall immediately communicate particulars of the change to Pakistan in writing and the provisions of Paragraphs 13 and 14 shall then apply, but where a period of three months is specified in Paragraph 13, that period shall be reduced to two months.

(b) If any alteration proposed in the design of a Storage Work (other than a Storage Work falling under Paragraph 3), after it comes into operation would result in a material change in the information furnished to Pakistan under the provisions of Paragraph 12, India shall, at least four months in advance of making the alteration, communicate particulars of the change to Pakistan in writing and the provisions of Paragraphs 13 and 14 shall then apply, but where a period of three months is specified in Paragraph 13, that period shall be reduced to two months.

16. In the event of an emergency arising which requires repairs to be undertaken to protect the integrity of a Storage Work (other than a Storage Work falling under Paragraph 3), India may undertake immediately the necessary repairs or alterations ; if these repairs or alterations result in a change in the information furnished to Pakistan under the provisions of Paragraph 12, India shall, as soon as possible, communicate particulars of the change to Pakistan in writing to enable Pakistan to satisfy itself that after such change the design of the work conforms to the criteria specified in Paragraph 11. The provisions of Paragraphs 13 and 14 shall then apply.

17. The Flood Storage specified against item (b) in Paragraph 7 may be effected only during floods when the discharge of the river exceeds the amount specified for this purpose in the design of the work ; the storage above Full Reservoir Level shall be released as quickly as possible after the flood recedes.

18. The annual filling of Conservation Storage and the initial filling below the Dead Storage Level, at any site, shall be carried out at such times and in accordance with such rules as may be agreed upon between the Commissioners. In case the Commissioners are unable to reach agreement, India may carry out the filling as follows :

(a) if the site is on The Indus, between 1st July and 20th August ;

(b) if the site is on The Jhelum, between 21st June and 20th August ; and

(c) if the site is on The Chenab, between 21st June and 31st August at such rate as not to reduce, on account of this filling, the flow in the Chenab Main above Merala to less than 55,000 cusecs.

19. The Dead Storage shall not be depleted except in an unforeseen emergency. If so depleted, it will be refilled in accordance with the conditions of its initial filling.

20. Subject to the provisions of Paragraph 8 of Annexure C, India may make releases from Conservation Storage in any manner it may determine.

21. If a hydro-electric power plant is incorporated in a Storage Work (other than a Storage Work falling under Paragraph 3), the plant shall be so operated that :

(a) the maximum Pondage (as defined in Annexure D) shall not exceed the Pondage required for the firm power of the plant, and the water-level in the reservoir corresponding to maximum Pondage shall not, on account of this Pondage, exceed the Full Reservoir Level at any time ; and

(b) except during the period in which a filling is being carried out in accordance with the provisions of Paragraph 18 or 19, the volume of water delivered into the river below the work during any period of seven consecutive days shall not be less than the volume of water received in the river upstream of the work in that seven-day period.

22. In applying the provisions of Paragraph 21 (b) :

(a) the period of seven consecutive days shall commence at 8 a.m. on every Saturday and the time shall be Indian Standard Time ;

(b) a tolerance of 10% in volume shall be permissible and adjusted as soon as possible ; and

(c) any temporary uncontrollable retention of water due to variation in river supply will be accounted for.

23. When the Live Storage Capacity of a Storage Work is reduced by sedimentation, India may, in accordance with the relevant provisions of this Annexure, construct new Storage Works or modify existing Storage Works so as to make up the storage capacity lost by sedimentation.

24. If a power plant incorporated in a Storage Work (other than a Storage Work falling under Paragraph 3) is used to operate a peak power plant and lies on any Tributary of The Jhelum on which there is any Agricultural Use by Pakistan, a Regulating Basin (as defined in Annexure D) shall be incorporated.

25. If the change referred to in Paragraph 5 (a) or 15 is not material, India shall communicate particulars of the change to Pakistan, in writing, as soon as the alteration has been made or the repairs have been undertaken. The provisions of Paragraph 6 or Paragraphs 13 and 14, as the case may be, shall then apply.

APPENDIX TO ANNEXURE E

(*Paragraphs 4 and 12*)

1. *Location of Storage Work*

General map showing the location of the site ; if on a Tributary, its situation with respect to the main river.

2. *Hydrologic Data*

(a) General map (Scale : ¼ inch or more = 1 mile) showing the discharge observation site or sites or rainfall gauge stations, on whose data the design is based. In case of a work on a Tributary, this map should also show the catchment area of the Tributary above the site.

(b) Observed or estimated daily river discharge data on which the design is based (observed data will be given for as long a period as available ; estimated data will be given for as long a period as possible ; in both cases data may be limited to the latest 25 years).

(c) Flood data, observed or estimated (with details of estimation).

(d) Gauge-discharge curve or curves for site or sites mentioned in (a) above.

(e) Sediment data.

3. Hydraulic Data

(a) Stage-area and stage-capacity curves of the reservoir with contoured survey maps on which based.

(b) Reservoir Capacity, Dead Storage Capacity, Flood Storage Capacity, Conservation Storage Capacity, Power Storage Capacity, General Storage Capacity and Surcharge Storage Capacity.

(e) Full Reservoir Level, Dead Storage Level and levels corresponding to Flood Storage and Surcharge Storage.

(d) Estimated evaporation losses in the reservoir.

(e) Maximum designed flood discharge and discharge-capacity curve for spillway.

(f) If a power plant is incorporated in a Storage Work :

(i) Stage-area and stage-capacity curves of forebay and Regulating Basin, with contoured survey maps on which based.

(ii) Estimated evaporation losses in the Regulating Basin, head-race, forebay and tail-race.

(iii) Designated range of operation.

4. Particulars of Design

(a) Dimensioned plan showing dam, spillway, diversion works and outlet works.

(b) Type of dam, length and height above mean bed of the river.

(e) Cross-section of the river at the site and mean bed level.

(d) Type of spillway, length and crest level ; size, number and top level of spillway gates.

(e) Type of diversion works, maximum designed capacity, number and size ; sill levels.

(f) Outlet works : function, type, size, number, maximum designed capacity and sill levels.

(g) If a power plant is incorporated in a Storage Work,

(i) Dimensioned plan showing head-race and forebay, powerhouse, tail-race and Regulating Basin.

(ii) Type of intake, maximum designed capacity, size and sill level.

(iii) Head-race and tail-race, length, size and maximum designed capacity.

(iv) Discharge proposed to be passed through the plant, initially and ultimately, and expected variations in the discharge on account of the daily and the weekly load fluctuations.

(v) Maximum aggregate capacity of power units (exclusive of standby units) for firm power and secondary power.

(vi) Regulating Basin and its outlet works : type, number, size, sill levels and designed maximum discharge capacity.

5. General

(a) Probable date of completion of river works and probable dates on which various stages of the work would come into operation.

(b) Estimated effect of proposed Storage Work on the flow pattern of river supplies below the Storage Work or, if India has any other Storage Work or Run-of-River

Plant (as defined in Annexure D) below the proposed Storage Work, then on the flow pattern below the last Storage Work or Plant.

ANNEXURE F—NEUTRAL EXPERT

(Article IX (2))

PART 1—QUESTIONS TO BE REFERRED TO A NEUTRAL EXPERT

1. Subject to the provisions of Paragraph 2, either Commissioner may, under the provisions of Article IX (2) (a) refer to a Neutral Expert any of the following questions :

(1) Determination of the component of water available for the use of Pakistan

(a) in the Ravi Main, on account of the deliveries by Pakistan under the provisions of Article II (4), and

(b) at various points on The Ravi or The Sutlej, on account of the deliveries by Pakistan under the provisions of Article III (3).

(2) Determination of the boundary of the drainage basin of The Indus or The Jhelum or The Chenab for the purposes of Article III (2).

(3) Whether or not any use of water or storage in addition to that provided under Article III is involved in any of the schemes referred to in Article IV (2) or in Article IV (3) (b) and carried out by India on the Western Rivers.

(4) Questions relating to

(a) obligations with respect to construction or remodelling of, or pouring of waters into, any drainage or drain as provided in Article IV (3) (e) and Article IV (3) (d) ; and

(b) maintenance of drainages specified in Article IV (4).

(5) Questions arising under Article IV (7) as to whether any action taken by either Party is likely to have the effect of diverting the Ravi Main between Madhopur and Lahore, or the Sutlej Main between Harike and Suleimanke, from its natural channel between high banks.

(6) Determination of facts relating to questions arising under Article IV (11) or Article IV (12).

(7) Whether any of the data requested by either Party falls outside the scope of Article VI (2).

(8) Determination of withdrawals to be made by India under proviso (iii) to Paragraph 3 of Annexure C.

(9) Determination of schedule of releases from Conservation Storage under the provisions of Paragraph 8 of Annexure C.

(10) Whether or not any new Agricultural Use by India, on those Tributaries of The Jhelum on which there is any Agricultural Use or hydro-electric use by Pakistan conforms to the provisions of Paragraph 9 of Annexure C.

(11) Questions arising under the provisions of Paragraph 7, Paragraph 11 or Paragraph 21 of Annexure D.

(12) Whether or not the operation by India of any plant constructed in accordance with the provisions of Part 3 of Annexure D conforms to the criteria set out in Paragraphs 15, 16 and 17 of that Annexure.

(13) Whether or not any new hydro-electric plant on an irrigation channel taking off the Western Rivers conforms to the provisos to Paragraph 24 of Annexure D.

(14) Whether or not the operation of a Storage Work which was in operation as on the Effective Date substantially conforms to the provisions of Paragraph 3 of Annexure E.

(15) Whether or not any part of the storage in a Connecting Lake is the result of man-made works constructed after the Effective Date (Paragraph 8 (b) of Annexure E).

(16) Whether or not any flood control work constructed on the Jhelum Main conforms to the provisions of Paragraph 9 of Annexure E.

(17) Whether or not any Storage Work to be constructed on a Tributary of The Jhelum on which Pakistan has any Agricultural Use or hydro-electric use conforms to the provisions of Paragraph 10 of Annexure E.

(18) Questions arising under the provisions of Paragraph 6 or 14 of Annexure E.

(19) Whether or not the operation of any Storage Work constructed by India after the Effective Date, conforms to the provisions of Paragraphs 17, 18, 19, 21 and 22 of Annexure E and, to the extent necessary, to the provisions of Paragraph 8 of Annexure C.

(20) Whether or not the storage capacity proposed to be made up by India under Paragraph 23 of Annexure E exceeds the storage capacity lost by sedimentation.

(21) Determination of modifications to be made in the provisions of Parts 2, 4 or 5 of Annexure H in accordance with Paragraphs 11, 31 or 38 thereof when the additional supplies referred to in Paragraph 66 of that Annexure become available.

(22) Modification of Forms under the provisions of Paragraph 41 of Annexure H.

(23) Revision of the figure for the conveyance loss from the head of the Madhopur Beas Link to the junction of the Chakki Torrent with the Beas Main under the provisions of Paragraph 45 (c) (ii) of Annexure H.

2. If a claim for financial compensation has been raised with respect to any question specified in Paragraph 1, that question shall not be referred to a Neutral Expert unless the two Commissioners are agreed that it should be so referred.

3. Either Commissioner may refer to a Neutral Expert under the provisions of Article IX (2) (a) any question arising with regard to the determination of costs under Article IV (5), Article IV (11), Article VII (l) (a) or Article VII (1) (b).

PART 2—APPOINTMENT AND PROCEDURE

4. A Neutral Expert shall be a highly qualified engineer, and, on the receipt of a request made in accordance with Paragraph 5, he shall be appointed, and the terms of his retainer shall be fixed, as follows :

(a) During the Transition Period, by the Bank.

(b) After the expiration of the Transition Period,

(i) jointly by the Government of India and the Government of Pakistan, or

(ii) if no appointment is made in accordance with (i) above within one month after the date of the request, then by such person or body as may have been agreed upon between the two Governments in advance, on an annual basis, or, in the absence of such agreement, by the Bank.

Provided that every appointment made in accordance with (a) or (b) (ii) above shall be made after consultation with each of the Parties.

The Bank shall be notified of every appointment, except when the Bank is itself the appointing authority.

5. If a difference arises and has to be dealt with in accordance with the provisions of Article IX (2) (a), the following procedure will be followed :

   (a) The Commissioner who is of the opinion that the difference falls within the provisions of Part 1 of this Annexure (hereinafter in this paragraph referred to as "the first Commissioner") shall notify the other Commissioner of his intention to ask for the appointment of a Neutral Expert. Such notification shall clearly state the paragraph or paragraphs of Part 1 of this Annexure under which the difference falls and shall also contain a statement of the point or points of difference.

   (b) Within two weeks of the receipt by the other Commissioner of the notification specified in (a) above, the two Commissioners will endeavour to prepare a joint statement of the point or points of difference.

   (c) After expiry of the period of two weeks specified in (b) above, the first Commissioner may request the appropriate authority specified in Paragraph 4 to appoint a Neutral Expert ; a copy of the request shall be sent at the same time to the other Commissioner.

   (d) The request under (c) above shall be accompanied by the joint statement specified in (b) above ; failing this, either Commissioner may send a separate statement to the appointing authority and, if he does so, he shall at the same time send a copy of the separate statement to the other Commissioner.

6. The procedure with respect to each reference to a Neutral Expert shall be determined by him, provided that :

   (a) he shall afford to each Party an adequate hearing ;

   (b) in making his decision, he shall be governed by the provisions of this Treaty and by the *compromis*, if any, presented to him by the Commission ; and

   (c) without prejudice to the provisions of Paragraph 3, unless both Parties so request, he shall not deal with any issue of financial compensation.

7. Should the Commission be unable to agree that any particular difference falls within Part 1 of this Annexure, the Neutral Expert shall, after hearing both Parties, decide whether or not it so falls. Should he decide that the difference so falls, he shall proceed to render a decision on the merits ; should he decide otherwise, he shall inform the Commission that, in his opinion, the difference should be treated as a dispute. Should the Neutral Expert decide that only a part of the difference so falls, he shall, at his discretion, either :

   (a) proceed to render a decision on the part which so falls, and inform the Commission that, in his opinion, the part which does not so fall should be treated as a dispute, or

   (b) inform the Commission that, in his opinion, the entire difference should be treated as a dispute.

8. Each Government agrees to extend to the Neutral Expert such facilities as he may require for the discharge of his functions.

9. The Neutral Expert shall, as soon as possible, render a decision on the question or questions referred to him, giving his reasons. A copy of such decision, duly signed by the Neutral Expert, shall be forwarded by him to each of the Commissioners and to the Bank.

10. Each Party shall bear its own costs. The remuneration and the expenses of the Neutral Expert and of any assistance that he may need shall be borne initially as provided in Part 3 of this Annexure and eventually by the Party against which his decision is rendered, except as, in special circumstances, and for reasons to be stated by him, he may otherwise direct.

He shall include in his decision a direction concerning the extent to which the costs of such remuneration and expenses are to be borne by either Party.

11. The decision of the Neutral Expert on all matters within his competence shall be final and binding, in respect of the particular matter on which the decision is made, upon the Parties and upon any Court of Arbitration established under the provisions of Article IX (5).

12. The Neutral Expert may, at the request of the Commission, suggest for the consideration of the Parties such measures as are, in his opinion, appropriate to compose a difference or to implement his decision.

13. Without prejudice to the finality of the Neutral Expert's decision, if any question (including a claim to financial compensation) which is not within the competence of a Neutral Expert should arise out of his decision, that question shall, if it cannot be resolved by agreement, be settled in accordance with the provisions of Article IX (3), (4) and (5).

PART 3—EXPENSES

14. India and Pakistan shall, within 30 days after the Treaty enters into force, each pay to the Bank the sum of U.S. $5,000 to be held in trust by the Bank, together with any income therefrom and any other amounts payable to the Bank hereunder, on the terms and conditions hereinafter set forth in this Annexure.

15. The remuneration and expenses of the Neutral Expert, and of any assistance that he may need, shall be paid or reimbursed by the Bank from the amounts held by it hereunder. The Bank shall be entitled to rely upon the statement of the Neutral Expert as to the amount of the remuneration and expenses of himself (determined in accordance with the terms of his retainer) and of any such assistance utilized by him.

16. Within 30 days of the rendering of a decision by the Neutral Expert, the Party or Parties concerned shall, in accordance with that decision, refund to the Bank the amounts paid by the Bank pursuant to Paragraph 15.

17. The Bank will keep amounts held by it hereunder separate from its other assets, in such form, in such banks or other depositories and in such accounts as it shall determine. The Bank may, but it shall not be required to, invest these amounts. The Bank will not be liable to the Parties for failure of any depository or other person to perform its obligations. The Bank shall be under no obligation to make payments hereunder of amounts in excess of those held by it hereunder.

18. If at any time or times the amounts held by the Bank hereunder shall in its judgment be insufficient to meet the payments provided for in Paragraph 15, it will so notify the Parties, which shall, within 30 days thereafter, pay to the Bank, in equal shares, the amount specified in such notice as being the amount required to cover the deficiency. Any amounts so paid to the Bank may, by agreement between the Bank and the Parties, be refunded to the Parties.

ANNEXURE G—COURT OF ARBITRATION

(Article IX (5))

1. If the necessity arises to establish a Court of Arbitration under the provisions of Article IX, the provisions of this Annexure shall apply.

2. The arbitration proceeding may be instituted

   (a) by the two Parties entering into a special agreement (*compromis*) specifying the issues in dispute, the composition of the Court and instructions to the Court concerning its procedures and any other matters agreed upon between the Parties ; or

(b) at the request of either Party to the other in accordance with the provisions of Article IX (5) (b) or (c). Such request shall contain a statement setting forth the nature of the dispute or claim to be submitted to arbitration, the nature of the relief sought and the names of the arbitrators appointed under Paragraph 6 by the Party instituting the proceeding.

3. The date of the special agreement referred to in Paragraph 2 (a), or the date on which the request referred to in Paragraph 2 (b) is received by the other Party, shall be deemed to be the date on which the proceeding is instituted.

4. Unless otherwise agreed between the Parties, a Court of Arbitration shall consist of seven arbitrators appointed as follows :

(a) Two arbitrators to be appointed by each Party in accordance with Paragraph 6 ; and

(b) Three arbitrators (hereinafter sometimes called the umpires) to be appointed in accordance with Paragraph 7, one from each of the following categories :

(i) Persons qualified by status and reputation to be Chairman of the Court of Arbitration who may, but need not, be engineers or lawyers.

(ii) Highly qualified engineers.

(iii) Persons well versed in international law.

The Chairman of the Court shall be a person from category (b) (i) above.

5. The Parties shall endeavour to nominate and maintain a Standing Panel of umpires (hereinafter called the Panel) in the following manner :

(a) The Panel shall consist of four persons in each of the three categories specified in Paragraph 4 (b).

(b) The Panel will be selected, as soon as possible after the Effective Date, by agreement between the Parties and with the consent of the persons whose names are included in the Panel.

(c) A person may at any time be retired from the Panel at the request of either Party : Provided however that he may not be so retired

(i) during the period after arbitration proceedings have been instituted under Paragraph 2 (b) and before the process described in Paragraph 7 (a) has been completed ; or

(ii) during the period after he has been appointed to a Court and before the proceedings are completed.

(d) If a member of the Panel should die, resign or be retired, his successor shall be selected by agreement between the Parties.

6. The arbitrators referred to in Paragraph 4 (a) shall be appointed as follows :

The Party instituting the proceeding shall appoint two arbitrators at the time it makes a request to the other Party under Paragraph 2 (b). Within 30 days of the receipt of this request, the other Party shall notify the names of the arbitrators appointed by it.

7. The umpires shall be appointed as follows :

(a) If a Panel has been nominated in accordance with the provisions of Paragraph 5, each umpire shall be selected as follows from the Panel, from his appropriate category, provided that the category has, at that time, at least three names on the Panel :

The Parties shall endeavour to agree to place the names of the persons in each category in the order in which they shall be invited to serve on the Court. If such

agreement cannot be reached within 30 days of the date on which the proceeding is instituted, the Parties shall promptly establish such an order by drawing lots. If, in any category, the person whose name is placed first in the order so established, on receipt of an invitation to serve on the Court, declines to do so, the person whose name is next on the list shall be invited. The process shall be repeated until the invitation is accepted or all names in the category are exhausted.

(b) If a Panel has not been nominated in accordance with Paragraph 5, or if there should be less than three names on the Panel in any category or if no person in a category accepts the invitation referred to in Paragraph 7 (a), the umpires, or the remaining umpires or umpire, as the case may be, shall be appointed as follows :

(i) By agreement between the Parties.

(ii) Should the Parties be unable to agree on the selection of any or all of the three umpires, they shall agree on one or more persons to help them in making the necessary selection by agreement ; but if one or more umpires remain to be appointed 60 days after the date on which the proceeding is instituted, or 30 days after the completion of the process described in sub-paragraph (a) above, as the case may be, then the Parties shall determine by lot for each umpire remaining to be appointed, a person from the appropriate list set out in the Appendix to this Annexure, who shall then be requested to make the necessary selection.

(iii) A national of India or Pakistan, or a person who is, or has been, employed or retained by either of the Parties shall be disqualified from selection under sub-paragraph (ii) above :

Provided that

(1) the person making the selection shall be entitled to rely on a declaration from the appointee, before his selection, that he is not disqualified on any of the above grounds ; and

(2) the Parties may by agreement waive any or all of the above disqualifications in the case of any individual appointee.

(iv) The lists in the Appendix to this Annexure may, from time to time, be modified or enlarged by agreement between the Parties.

8. In selecting umpires pursuant to Paragraph 7, the Chairman shall be selected first, unless the Parties otherwise agree.

9. Should either Party fail to participate in the drawing of lots as provided in Paragraphs 7 and 10, the other Party may request the President of the Bank to nominate a person to draw the lots, and the person so nominated shall do so after giving due notice to the Parties and inviting them to be represented at the drawing of the lots.

10. In the case of death, retirement or disability from any cause of one of the arbitrators or umpires his place shall be filled as follows :

(a) In the case of one of the arbitrators appointed under Paragraph 6, his place shall be filled by the Party which appointed him. The Court shall, on request, suspend the proceedings but for not longer than 15 days pending such replacement.

(b) In the case of an umpire, a new appointment shall be made by agreement between the Parties or, failing such agreement, by a person determined by lot from the appropriate list set out in the Appendix to this Annexure, who shall then be requested to make the necessary selection subject to the provisions of Paragraph 7 (b) (iii). Unless the Parties otherwise agree, the Court shall suspend the proceedings pending such replacement.

11. As soon as the three umpires have accepted appointment, they together with such arbitrators as have been appointed by the two Parties under Paragraph 6 shall form the Court of Arbitration. Unless the Parties otherwise agree, the Court shall be competent to transact business only when all the three umpires and at least two arbitrators are present.

12. Each Party shall be represented before the Court by an Agent and may have the assistance of Counsel.

13. Within 15 days of the date of institution of a proceeding, each Party shall place sufficient funds at the disposal of its Commissioner to meet in equal shares the initial expenses of the umpires to enable them to attend the first meeting of the Court. If either Party should fail to do so, the other Party may initially meet the whole of such expenses.

14. The Court of Arbitration shall convene, for its first meeting, on such date and at such place as shall be fixed by the Chairman.

15. At its first meeting the Court shall

    (a) establish its secretariat and appoint a Treasurer ;

    (b) make an estimate of the likely expenses of the Court and call upon each Party to pay to the Treasurer half of the expenses so estimated : Provided that, if either Party should fail to make such payment, the other Party may initially pay the whole of the estimated expenses ;

    (c) specify the issues in dispute ;

    (d) lay down a programme for submission by each side of legal pleadings and rejoinders ; and

    (e) determine the time and place of reconvening the Court.

    Unless special circumstances arise, the Court shall not reconvene until the pleadings and rejoinders have been closed. During the intervening period, at the request of either Party, the Chairman of the Court may, for sufficient reason, make changes in the arrangements made under (d) and (e) above.

16. Subject to the provisions of this Treaty and except as the Parties may otherwise agree, the Court shall decide all questions relating to its competence and shall determine its procedure, including the time within which each Party must present and conclude its arguments. All such decisions of the Court shall be by a majority of those present and voting. Each arbitrator, including the Chairman, shall have one vote. In the event of an equality of votes, the Chairman shall have a casting vote.

17. The proceedings of the Court shall be in English.

18. Two or more certified copies of every document produced before the Court by one Party shall be communicated by the Court to the other Party ; the Court shall not take cognizance of any document or paper or fact presented by a Party unless so communicated.

19. The Chairman of the Court shall control the discussions. The discussions shall not be open to the public unless it is so decided by the Court with the consent of the Parties. The discussions shall be recorded in minutes drawn up by the Secretaries appointed by the Chairman. These minutes shall be signed by the Chairman and shall alone have an authentic character.

20. The Court shall have the right to require from the Agents of the Parties the production of all papers and other evidence it considers necessary and to demand all necessary explanations. In case of refusal, the Court shall take formal note of it.

21. The members of the Court shall be entitled to put questions to the Agents and Counsel of the Parties and to demand explanations from them on doubtful points. Neither the questions

put nor the remarks made by the members of the Court during the discussions shall be regarded as an expression of an opinion of the Court or any of its members.

22. When the Agents and Counsel of the Parties have, within the time allotted by the Court, submitted all explanations and evidence in support of their case, the Court shall pronounce the discussions closed. The Court may, however, at its discretion re-open the discussions at any time before making its Award. The deliberations of the Court shall be in private and shall remain secret.

23. The Court shall render its Award, in writing, on the issues in dispute and on such relief, including financial compensation, as may have been claimed. The Award shall be accompanied by a statement of reasons. An Award signed by four or more members of the Court shall constitute the Award of the Court. A signed counterpart of the Award shall be delivered by the Court to each Party. Any such Award rendered in accordance with the provisions of this Annexure in regard to a particular dispute shall be final and binding upon the Parties with respect to that dispute.

24. The salaries and allowances of the arbitrators appointed pursuant to Paragraph 6 shall be determined and, in the first instance, borne by their Governments ; those of the umpires shall be agreed upon with them by the Parties or by the persons appointing them, and (subject to Paragraph 13) shall be paid, in the first instance, by the Treasurer. The salaries and allowances of the secretariat of the Court shall be determined by the Court and paid, in the first instance, by the Treasurer.

25. Each Government agrees to accord to the members and officials of the Court of Arbitration and to the Agents and Counsel appearing before the Court the same privileges and immunities as are accorded to representatives of members states to the principal and subsidiary organs of the United Nations under Sections 11, 12 and 13 of Article IV of the Convention on the Privileges and Immunities of the United Nations (dated 13th February 1946) during the periods specified in these Sections. The Chairman of the Court, with the approval of the Court, has the right and the duty to waive the immunity of any official of the Court in any case where the immunity would impede the course of justice and can be waived without prejudice to the interests of the Court. The Government appointing any of the aforementioned Agents and Counsel has the right and the duty to waive the immunity of any of its said appointees in any case where in its opinion the immunity would impede the course of justice and can be waived without prejudice to the effective performance of the functions of the said appointees. The immunities and privileges provided for in this paragraph shall not be applicable as between an Agent or Counsel appearing before the Court and the Government which has appointed him.

26. In its Award, the Court shall also award the costs of the proceedings, including those initially borne by the Parties and those paid by the Treasurer.

27. At the request of either Party, made within three months of the date of the Award, the Court shall re-assemble to clarify or interpret its Award. Pending such clarification or interpretation the Court may, at the request of either Party and if in the opinion of the Court circumstances so require, grant a stay of execution of its Award. After furnishing this clarification or interpretation, or if no request for such clarification or interpretation is made within three months of the date of the Award, the Court shall be deemed to have been dissolved.

28. Either Party may request the Court at its first meeting to lay down, pending its Award, such interim measures as, in the opinion of that Party, are necessary to safeguard its interests under the Treaty with respect to the matter in dispute, or to avoid prejudice to the final solution or aggravation or extension of the dispute. The Court shall, thereupon, after having afforded an adequate hearing to each Party, decide, by a majority consisting of at least four members of the Court, whether any interim measures are necessary for the reasons hereinbefore stated and, if so, shall specify such measures : Provided that

(a) the Court shall lay down such interim measures only for such specified period as, in its opinion, will be necessary to render the Award : this period may, if necessary, be extended unless the delay in rendering the Award is due to any delay on the part of the Party which requested the interim measures in supplying such information as may be required by the other Party or by the Court in connection with the dispute ; and

(b) the specification of such interim measures shall not be construed as an indication of any view of the Court on the merits of the dispute.

29. Except as the Parties may otherwise agree, the law to be applied by the Court shall be this Treaty and, whenever necessary for its interpretation or application, but only to the extent necessary for that purpose, the following in the order in which they are listed :

(a) International conventions establishing rules which are expressly recognized by the Parties.

(b) Customary international law.

APPENDIX TO ANNEXURE G

(Paragraph 7 (b))

List I for selection of Chairman	*List II for selection of Engineer Member*	*List III for selection of Legal Member*
(i) The Secretary-General of the United Nations	(i) The President of Massachusetts Institute of Technology, Cambridge, Mass., U.S.A.	(i) The Chief Justice of the United States
(ii) The President of the International Bank for Reconstruction and Development	(ii) The Rector of the Imperial College of Science and Technology, London, England	(ii) The Lord Chief Justice of England

ANNEXURE H—TRANSITIONAL ARRANGEMENTS

[. . .]

* * *