CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 154/MP/2016

Coram:

ShriGireesh B. Pradhan, Chairperson
Shri A.K. Singhal, Member
Shri A.S. Bakshi, Member
Dr. M.K. Iyer, Member

Date of Order: 17.11.2017

In the matter of

Petition under Section 79 (1) (a) of the Electricity Act, 2003 for relief on account of Force Majeure events affecting the Farakka Super Thermal Power Station Stages- I & II (1600 MW) and Stage-III (500 MW)

And

In the matter of

NTPC Limited
NTPC Bhawan,
Scope Complex,
7, Institutional Area, Lodhi road,
New Delhi- 110003 **.....Petitioner**

Vs

1. West Bengal State Electricity Distribution Company Limited
VidyutBhawan, Block- DJ,
Sector-II, Salt Lake City
Kolkata- 700091

2. Bihar State Power Holding Company Limited
VidyutBhawan, Bailey Road,
Patna- 800001

3. JharkhandUrjaVikas Nigam Limited
Engineering Bhawan, Heavy Engineering Corporation,
Dhurwa, Ranchi- 834004

4. DamodarValley Corporation
DVC Towers, VIP Road,
Kolkata- 700054

5. Power Department,
Government ofSikkim,
KaziRoad, Gangtok- 737101

6. GRIDCO Limited
VidyutBhawan, Janpath, Bhubaneshwar- 751007

7. Assam Power Distribution Company Limited
BijuleeBhawan, Paltan Bazar,
Guwahati- 782001

8. Tamil Nadu Generation and Distribution Company Limited
NPKRR, Maaligai
144, Anna Salai
Chennai- 600002

9. Uttar Pradesh Power Corporation Limited
Shakti Bhawan, 14, Ashok Marg,
Lucknow- 226001

10. Power Development Department
Govt. of J & K Secretariat
Srinagar- 190009

11. Punjab State Power Corporation Limited
The Mall, Patiala- 147001

12. BSES Rajdhani Power Limited
BSES Bhawan, Nehru Place,
New Delhi- 110019

13. BSES Yamuna Power Limited
Shakti Kiran Building, Karkardooma
Delhi- 110092

14. Tata Power Delhi Distribution Limited
33 KV Sub Station Building,
Hudson Lane, Kingsway Camp,
New Delhi- 110009

15. Haryana Power Purchase Centre
Shakti Bhawan, Sector-6,
Panchkula- 134109,
Haryana

16. Rajasthan UrjaVikas Nigam Limited
VidyutBhawan, Janpath, Jyotinagar
Jaipur- 302005

17. Eastern Regional Power Committee
14, Golf Club Road, Tollygunje
Kolkata- 700033

18. Eastern Regional Load Dispatch Center
14, Golf Club Road, Tollygunje,
Kolkata- 700033 **…….Respondents**

Parties present:

ShriSitesh Mukherjee, Advocate, NTPC
ShriGautamChawla, Advocate, NTPC
Shri Deep Rao, NTPC
ShriAmitKapur, Advocate, WBSEDCL
ShriVishrov Mukherjee, Advocate, WBSEDCL
ShriJanmali. M, Advocate, WBSEDCL
ShriR.B.Sharma, Advocate, BRPL and GRIDCO
ShriManish Garg, UPPCL
ShriR. Mansingh, GRIDCO
Shri S.R. Sarangi, GRIDCO

ORDER

This Petition has been filed by the Petitioner, NTPC seeking relief on account of Force Majeure events causing complete shutdown of Farakka Super Thermal Power Station, Stages-I & II (1600 MW) and Stage-III (500 MW) ('hereinafter referred to as FSTPS/ the generating station') due to non-availability of cooling water from the adjacent Ganga Feeder Canal.

2. Gist of the submissions of the Petitioner is as under:

(i) The Petitioner is a Govt. company under the Companies Act and a generating company under section 2(28) of the Electricity Act, 2003 (the 2003 Act).The generating station comprises of six units with total capacity of 2100 MW i.e, three units with capacity of 200 MW each (Stage-I), two units with capacity of 500 MW each (Stage-II) and one unit with capacity of 500 MW (Stage-III). The dates of commercial operation of different units of the generating station are as under:

Unit-I	1.11.1986
Unit-II	1.10.1987
Unit-III	1.9.1988
Unit-IV	1.7.1996
Unit-V	1.4.1995
Unit-VI	4.4.2012

(ii)The Petitioner had entered into Bulk Power Supply Agreements/ Power Purchase Agreements (collectively referred as PPAs) with the respondents for the sale of electricity generated by the station.

(iii) The sole source of cooling water for the generating station is Ganga Feeder Canal. The flow of water in the Ganga Feeder Canal is controlled and operated by Farakka Barrage Project Authority, Ministry of Water Resources, GOI.

(iv) TheCooling water has become unavailable due to unprecedented and uncontrollable reduction in the water level of the canal, which dropped uncontrollably to the extent that it was not possible for the generating station to draw cooling water. The said unavailability has resulted in the shutdown of the generating station and the same amounts to Force Majeure events under the power offtake arrangements executed between the Petitioner and the respondents.

(v) The reduction in water level of the canal is beyond the control of the Petitioner as the water supply is dependent *inter alia* on meteorological factors and the diversion of water from river Ganga to Bangladesh by the GOI. Pursuant to the treaty signed between the Govt. of the People's Republic of Bangladesh and GOI on sharing of the Ganga water at Farakka in 1996 (Water Sharing Treaty), the sharing/ diversion of 35000 cusec of water to Bangladesh happens annually. As a result, the level of water in the canal fell drastically below 17.5 meters.

(vi) Adequate cooling water can be drawn from the canal only if the level of cooling water available in the forebay is above 17.5 meters. This mandatory diversion of substantial volume of water to Bangladesh coupled with unprecedented dry spell in the upstream regions of Ganga with lack of precipitation have caused low water level in the Ganga Feeder Canal. Consequently, cooling water was not available at the generating station during the months of February and March, 2016 and hence, each of the units of the generating station had to shut down during such period. Accordingly, this is a Force Majeure event and beyond the control of the Petitioner.

(vii) Consequently, the annual fixed charges receivable by the Petitioner for the year 2015-16 was reduced on account of the factors beyond the control of the Petitioner. It would be unfair and unjust if the periods during which the unit of the generating station was shut down due to Force Majeure events were included in the calculation of availability thereby diminishing the capacity charges receivable. A cumulative loss of ₹26.91 crore as reduced capacity charges on this account has been suffered by the Petitioner in 2015-16.

(viii) The Petitioner had conceived the construction of lift pumps at the canal to counteract the reduction in the quantum of water. The Commission vide order dated 14.6.2012 in Petition No. 222 of 2009 *(approval of tariff of Farakka STPS (1600 MW) for the period from 1.4.2009 to 31.3.2014)* had approved the installation of the said pumps but the work could not be carried out due to various issues faced during the construction period. The Farakka Barrage Authority, at the request of the Petitioner had carried out repairs on the gates of Farakka Barrage to prevent leakages and to ensure adequate quantity of water/ water level in the Ganga Feeder Canal. Therefore, sufficient water was available in the canal throughout the year and the generating station never faced any problem of shut down or partial loading due to water shortage during the periodfrom 2012 to 2015. The water level in the canal reduced to the level of RL (+) 15.4 M in March, 2016 (much lower than the requisite RL(+) 16.6 M crest level) pursuant to the diversion of water to Bangladesh as per the Water Sharing Treaty and even the installation of lift pumps would not be able to draw cooling water.

(ix) It is due to the unprecedented reduction in the water level along with the sharing of water to Bangladesh under the Water Sharing Treaty, the generating station was

required to be shut down. Both the factors were completely outside the control of the Petitioner. Accordingly, the unavailability of water is a Force Majeure event under the PPAs.

(x) In compliance with the Force Majeure clause under the PPAs, letters were sent to the respondents as notice of the occurrence of the Force Majeure events on account of non- availability of cooling water. ERPC and ERLDC were also informed of the same vide letters dated 11.3.2016 and 12.3.2016. Further, this issue was raised in the 32nd commercial subcommittee meeting of ERPC dated 10.6.2016 and 33rd meeting of TCC/ ERPC on 24.6.2016 and 25.6.2016. ERPC did not accept this plea of the Petitioner for the exclusion of the period during which the generating station was closed.

(xi) The inclusion of the period during which the generating station was shut down due to Force Majeure events in the calculation of Percent Plant Availability per month under Regulation 30 of the CERC (Terms and Conditions of Tariff) Regulations, 2014 (the 2014 Tariff Regulations) is unfair and unjust and ought to be excluded from the calculation of Percent Plant Availability. Further, it has been stated that once cooling water becomes available in the Ganga Feeder Canal, the units of the generating station would be restarted and power generation would be resumed.

3. In the above background, the Petitioner has filed the Petition with the following specific prayers:

i) Declare that the unavailability of cooling water for the Petitioner's generating station at the Ganga Feeder Canal is a Force Majeure event under the PPAs;

ii) Direct the ERPC, Respondent No. 17 and ERLDC, Respondent No. 18, not to consider the periods during which the Petitioner's generating station or units thereof remained shut down due to Force Majeure events for the purpose of calculating the Percent Plant Availability of the Petitioner's generating station;

iii) Permit the Petitioner to raise revised bill on respondent nos. 1 to 16 on the basis of the Percent Plant Availability calculated by excluding the days on which the Petitioner's generating station remained shut down due to Force Majeure events;

iv) Direct Respondent Nos. 1 to 16 to pay the Petitioner the difference in tariff calculated on the basis of the revised bills raised by the Petitioner; and

v) Pass such other and further order(s) and/ or directions as this Hon'ble Commission may deem just, fit and proper in the facts and circumstances of the case and in the interest of justice.

4. The Petition was admitted on 3.11.2016 and notices were issued to the respondents. The Commission vide ROP directed the petitioner to submit certain additional information.Thereafter, the matter was heard on 24.1.2017 and the

Commission, after hearing the parties directed the Petitioner vide ROP to file certain additional information.

5. Subsequently, the matter was heard on 20.7.2017. During the hearing, the respondent, WBSEDCL circulated note of arguments in the matter along with copies of judgments of the Appellate Tribunal for Electricity (APTEL). Accordingly, the Commission, after hearing the parties at length, reserved its order in the Petition.

6. In compliance to the directions of the Commission vide ROP of the hearings dated 3.11.2016 and 24.1.2017, the Petitioner vide affidavits dated 2.1.2017 and 23.3.2017 has submitted the additional information and has clarified as under:

(a) There was an unprecedented fall in the level of the water flowing from the upper reaches of the river Ganga into the Ganga Feeder Canal caused due to natural hydrological factors such as low level of precipitation and dry spell in the upstream region of the Ganga for two consecutive years. The monsoon reports of the years 2014 and 2015 by Indian Metrological Department, Ministry of Earth Sciences, GOI has clearly indicated that rainfall over large swathes of area through which the river Ganga flows received deficient rainfall during the monsoon period during the said years. Another reason for less availability of water in the canal was erosion of the canal bed due to scouring thereby resulting in reduction of bed level in the canal. The diversion of water to Bangladesh further reduced the water in Ganga Feeder Canal.

(b) The work of the lift pump house construction was awarded to M/s IVRCL in 2011. The construction involved deep excavation of silty-clayey soil strata using sheet piling adjacent to the right of the canal. After completing the installation of sheet piling, excavation activity was commenced. During excavation at 10 m (approx.) below ground level, heavy flow of water from the canal to the excavation pit was noticed and the pit filled completely with water upto the ground level. It resulted in cracks in the canal embankment which happened due to san boiling condition below the excavation pit and piping action from the canal below the embankment. Such geological behavior could not be envisaged at the planning stage. Accordingly, the construction of lift pump house was stopped for safety considerations so as to preserve the right bank of the canal. Subsequently, the Superintending Engineer of Farakka Barrage Project also informed the generating station that deep excavations for construction of lift pump house might endanger the safety of the canal embankment by inducing bank failures thereby posing problems for embankment stability. The Superintending Engineer further directed the Petitioner to backfill the open excavation and take necessary measures to ensure safety of the canal. In view of this, the lift pump scheme could not be implemented. Even otherwise, the water level in the canal fell to level of RL(+) 15.4 M during February and March, 2016 and installation of lift pump could not have drawn adequate water as the minimum level of water required for the operation of lift pump was RL(+) 16.6 M.

(c) Farakka Barrage Authority, on 7.3.2016, was informed regarding the low level of water in Ganga Feeder Canal and request was made to increase the water level so as to avoid any adverse situation towards generation of electricity from the generating station.

(d) The water level in the canal was significantly low during February and March, 2016 due to low precipitation and flow of water from the upstream region of the Ganga. The Water Sharing Treaty required a minimum of 35000 cusecs of water to be diverted to Bangladesh in alternate 10 days period between March and May every year. Pursuant to such diversion in March, 2016, the canal was left with only 15000 cusecs of water. The resultant low level of water was insufficient to cater to the need of cooling water required for the generating station, thereby resulting in the shutdown of all the units of the station.

(e) Stages-I & II of the generating station works on open cycle and there are no cooling towers. The total cooling water requirement is met from the canal for full time continuous operation of the station. However, Stage-III operates in a closed cycle (drawing water from Stages-I & II) with induced drafting cooling tower, wherein for cooling water, make up water is required continuously to compensate for the evaporation and other losses in power generating process. The water requirement for the generating station, including Stage-III was confirmed by the Ministry of Water Resources, GOI in July, 1987. Stage-III was allowed to draw 3000 cusecs from the canal. The low level of water in the canal due to various reasons as mentioned could however not be envisaged at the time of Investment Approval of Stage-III of the generating station.

(f) Copy of letter dated 22.4.1985 from Ministry of Irrigation & Power, GOI and MOM dated 13.7.1978 have been annexed indicating that Farakka STPS had permission to draw water from the Feeder Canal taking off for the ultimate capacity of the station (2100 MW) at an applicable rate.

(g) The office of General Manager, Farakka Barrage Project vide his letter dated 15.2.2017 confirmed to the Petitioner that the flow of water in the Feeder Canal in the lean season of 2016 including February and March, were exceptionally low in comparison to flows of recent years. The reduction in the river and subsequently in canal was not as usual one but a significant phenomenon in comparison to recent past years. This observation was also coupled with the statement of the Member Secretary of ERPC in 33rd ERPC Meeting dated 25.6.2016 wherein it was observed that the events during February and March, 2016 are in the nature of Act of God and might be considered a Force Majeure event and the same are beyond the control of the Petitioner.

(h) Clause 9 of the PPA dated 25.5.1993 deals with the clause of Force Majeure. It provides that if any party to the PPA is adversely affected by a Force majeure event, such party shall not be liable for any loss or damage whatsoever resulting from such event. In effect, Clause 9 suspends a party's contractual obligations for the period during which a force majeure event subsists. Hence, no party is permitted to take advantage of another party's inability to perform its contractual obligation due to force majeure events.

(i) The Percent Plant Availability affects the quantum of receivable by the Petitioner and hence it has sought *inter alia* thatthe periods during which Force Majeure events subsisted ought to be excluded from calculating the Percent Plant Availability of the generating station. The factors contributing to low water level in Ganga Feeder Canal such as (i) unprecedented fall in the level of water flowing from the upper reaches of the Ganges in the canal due to low level of precipitation, (b) dry spell in the upstream region of the Ganges for two consecutive years, and (c) natural scouring of the Feeder Canal. Additionally, the mandatory diversion of substantial volumes of water to Bangladesh further contributed to unavailability of cooling water in the Feeder canal. Accordingly, the above unprecedented and uncontrollable reduction in water level in the canal falls under the Force majeure events and constrained the Petitioner to shut down the units of the generating station.

7. Replies to the Petition/additional informationhave been filed by the respondents, WBSEDCL, BRPL, UPPCL, GRIDCO and ERLDC. The Petitioner has filed its rejoinder to the said replies/ submissions.

Submissions of respondents

WBSEDCL

8. The Respondent No. 1, WBSEDCL vide affidavits dated 27.1.2017 and 29.5.2017 has mainly submitted as under:

(i) There is a mandatory annual sharing of a pre-specified quantum of water from the Ganga Feeder Canal with Bangladesh pursuant to the Water sharing Treaty. The diversion of water in accordance with an existing treaty, of which the Petitioner was completely aware, does not constitute Force Majeure event in terms of the Force majeure provisions under the PPAs dated 25.5.1993 and 13.11.2010. Moreover, the term 'any other such reason' is to be construed in the context of the preceding events being war, rebellion, mutiny, civil commotion, riot, strike, lock-out, forces of nature, Act of God and diversion of water does not fall under any of these categories.

(ii)The Appellate Tribunal for Electricity (APTEL) in its judgment dated 30.4.2013 in PGCIL vs CERC &ors has observed that Force majeure does not include an act caused by human behavior. In Appeal No. 110 of 2012 (NTPC Ltd vs CERC), the APTEL by judgment dated 30.4.2013, has ruled on the scope of Force majeure provisions in the PPAs for the Farakka plant.

(iii) The Petitioner was aware of the possibility of scarcity of water from the Ganga Feeder Canal and thus commenced the construction of lift pumps during 2007. The Commission by its order dated 14.6.2012 in Petition No. 222 of 2009 had approved additional expenditure to be incurred towards the construction of lift pumps. However, the Petitioner could not complete the same even after lapse of more than 10 years. The problem of unavailability of water was on account of the Petitioner's failure to complete construction of lift pumps. Instead of rectifying the issues of scarcity of water, the Petitioner went ahead with the construction of Stage-III of the generating station.

The Petitioner was aware of the monsoon reports of 2014 and 2015 by Indian Meteorological Department that clearly indicated scarcity of water, it could have taken steps to address the issue and ought to have constructed the lift pumps.

(iv) The design of the water pumps as well as the associated risk and consequence of installing pumps was on the Petitioner. The Petitioner, at this stage, cannot contend that even if the water pumps were constructed and ready, the quantum of water in the Feeder canal would still be inadequate for cooling water purpose. Additionally, the petitioner has chosen the design parameters for the lift pump i.e operating at minimum level of RL(+) 16.6 M of water and therefore, it cannot be contended that since water level has fallen below RL(+), it would qualify as Force majeure event. The design risk of the lift pumps was entirely on the Petitioner and is therefore, required to bear any consequence as a result of the same.

(v)The Petitioner has relied upon the letter dated 7.3.2016 from the Superintendent Engineer of Farakka Barrage Projectwhereby the Petitioner was directed to backfill the excavations for the lift pumps. However, this contention of the Petitioner is not acceptable as the said letter was sent to the Petitioner in March, 2016 while issues with construction of lift pumps was noticed in March, 2013. The Petitioner ought to have taken measures to rectify the issues with respect to lift pumps. Accordingly, it cannot be permitted to claim relief for events arising out of its own negligence and fault.

(vi) The Petitioner, in meeting dated 14.3.2016 had informed that it would consider, on a priority basis all long term solutions to ensure adequate cooling water available to the generating station in consultation with agencies like Central Water Commission, but no step has been taken to rectify the issue of shortage of water in Ganga Feeder Canal. Further, the Petitioner was also aware of the technical issues faced in construction of lift pumps but the Petitioner, once again did not take any measure to rectify the same. The Petitioner has not taken necessary steps to fulfill its obligations and mitigate the risk of unavailability of water and therefore cannot be allowed to take advantage of its own inactions.

(vii) The claim of the Petitioner that the unavailability of cooling water from Ganga Feeder Canal is a Force majeure event has rightly been rejected by ERPC in 33rd ERPC Meeting held on 24.6.2016 and 25.6.2016.

(viii) It is noticed that the Petitioner vide letter dated 7.3.2016had requested Farakka Barrage Authority to increase the water level in the Feeder Canal, whereas issues as regards to shortage of water commenced on 22.2.2016 resulting in shut down of Unit-I of the generating station. The Petitioner, aware of such issue should have intimated to the Farakka Authority as soon as there was shortage of water and not have waited until other units were shut down.

(ix) On perusal of day to day record of rate of flow of water in the canal (from 15.2.2016 to 31.3.2016), as indicated in Petitioner's affidavit dated 2.1.2017, it is evident that the level of water in the canal was 16.6 M and above 16.6 M between 22.2.2016 to 8.3.2016 and 20.3.2016 to 22.3.2016 respectively. Had the Petitioner installed the lift pumps, it would have been able to generate power between the said periods when the units of the generating station were claimed to be shut down.

(x) WBSEDCL would incur a financial loss of ₹10.71 crore if the claim of the Petitioner is allowed under force majeure for the event over which the Petitioner had complete control and could have prevented the same.

(xi) In terms of Regulation 30 of the Tariff Regulations, Plant Availability Factor is computed on the basis of DC. There is no provision for exclusion of period for which the units of generating station were shut down on account of unavailability of water in computation of PAF. Therefore, in absence of such provision, the relief claimed by the Petitioner cannot be granted.

WBSEDCL, in its note of arguments has reiterated the above submissions and has submitted that the prayer of the Petitioner may be disallowed and the Petition may be dismissed.

GRIDCO& BRPL

9. The Respondents, GRIDCO and BRPLvide their respective affidavits dated 17.1.2017 and 13.1.2017 have submitted as under:

(i) The Petitioner has claimed unavailability of cooling water. However, the present matter is a case of low availability of cooling water. The low generation in the station may or may not be attributable to low availability of cooling water.

(ii) The Petitioner has claimed relief under the PPAs on the ground of Force Majeure. However, the event of unavailability of cooling water received from the Ganga Feeder Canal on account of mandatory diversion of substantial volume of water to Bangladesh under the Water Sharing Treaty does not amount to force majeure event as per the PPA. The event of the said water sharing is neither sudden nor unexpected. The Petitioner was well aware with the Water Sharing Treaty and therefore should have anticipated shortage of water. In place of taking any measures, the Petitioner went ahead with construction of Stage-III, knowing the impending scenario of shortage of water. The Petitioner is now trying to pass on the financial burden, outcome of its own negligence, to the beneficiaries and consequentially on consumers under the umbrella of force majeure.

(iii) Events which could be foreseen or anticipated cannot be condition for Force majeure. The shutting down of the generation station, even if it happened due to shortage of cooling water on account of diversion of water to Bangladesh, arose as a result of an old treaty and the Petitioner was well aware of the same. Hence, such events cannot be treated as force majeure.

(iv) The Petitioner has submitted that inputs required for production of thermal generation was outside the control of the Petitioner. It is however clarified that the arrangement of adequate inputs for production of thermal power was the prime responsibility of the Petitioner.

(v) The Petitioner has not taken the process forward to claim the benefit of the Force Majeure clause by satisfying its beneficiaries of the existence of event of force majeure besides giving written notice. The Petitioner, apart from ERPC did not discuss the matter with any of the beneficiaries as no documents have been filed with respect to the same. However, ERPC in 33rd meeting held on 25.6.2016, had stated that it was

the sole responsibility of NTPC to solve its problems/ issues, on its own, in any manner such as taking help of CEA/ MOP or installing lift pumps/ submersible but not passing on financial burden on its beneficiaries and consumers thereof.

(vi) The Petitioner had commissioned Stage-III much after the Water Sharing Treaty came into existence. Hence, it is evident that the Petitioner was satisfied with regard to the availability of adequate water for operation of the generating station. If otherwise, then the decision of the Petitioner with respect to investment in Stage-III amount to serious lapses on its part, which cannot be considered in the ambit of force majeure and the Petitioner cannot pass on the outcome of its imprudence to its beneficiaries and consumers.

(vii) The useful life of Stage-I of the generating station consisting of 3 x 200 MW units has expired and the PPA is to be replaced or amended, as the case may be and fresh PPA is required to be filed consequent upon such expiry. In view of this, the claim of the Petitioner of force majeure events collapse in absence of the said PPA in respect of Stage-I of the generating station.

Accordingly, GRIDCO & BRPL have prayed that the prayer of the Petitioner is liable to be dismissed.

UPPCL

10. The respondent, UPPCL vide affidavits dated 29.12.2016 and 11.1.2017 has submitted the following:

(i) There is no Force Majeure clause in respect of the PPA entered into by UPPCL for purchase of power from Units-I & II of the generating station.

(ii) Though water level is out of control of the Petitioner, the issue could have been managed, had reasonable care been taken by the Petitioner. It is clear from the submission that the issue of receding water level was not unforeseen. It was envisaged way back in 2006 and accordingly the Commission had approved the installation of lift pumps. As the lift pumps were not installed till 2013-14, the respondents cannot be made to bear the cost on account of delay in installation of lift pumps by more than 10 years.

(iii) The stoppage of generating station on account of inadequate water level is not an 'Act of God' but an 'Act of Man' as the issue of receding water level could have been easily managed had installation of lift pumps be expedited.

(iv) The 2014 monsoon was deficient by 12% and for 2015 monsoon was deficient by 14%. It needs to be assessed whether even such a marginal shortfall in monsoon would have such a debilitating impact on operations of the generating station.

(v) The submission of the Petitioner that water requirement for FSTPS which included Stage-III was confirmed by the Ministry of Water Resources, GOI in July, 1987. This means that the impact of Water Sharing Treaty was not factored in at the time of Investment approval.

Accordingly, UPPCL has submitted that the claim of the Petitioner is not a Force Majeure and the relief prayed for by Petitioner may be disallowed.

ERLDC

11.The respondent, ERLDC vide affidavit dated 30.11.2016 has submitted that the generating station has furnished block wise DC on day ahead basis and based on the same, ERLDC computes the injection schedule of the station as per the requisition received from other respondent beneficiaries of the generating station. Accordingly, the work of ERLDC is very limited and it has no role in calculation of Percent Plant Availability of the generating station. It has been calculating Percent Plant Availability of the generating station based on the DC declared by thegenerating station that is forwarded by ERLDC to ERPC.

Rejoinder of Petitioner

12. The Petitioner has filed its rejoinder to the above said replies of the respondents vide separate affidavits dated 20.4.2017 and 26.5.2017 and has objected to the submissions of the respondents as follows:

(i) UPPCL has clearly admitted the Petitioner's submission that even if lift pumps were installed by NTPC, the level of water in Farakka Feeder Canal was so low that sufficient cooling water could not have been drawn by FSTPS and the subject Force majeure would have occurred.

(ii) It is denied that the receding water level to the extent experienced in February, 2016 and March, 2016 are Force Majeure events beyond the Petitioner's control. The fall in water level in the Feeder Canal in February, 2016 and March, 2016 are Force Majeure events beyond the Petitioner's control. UPPCL has failed to demonstrate how the Force majeure events could have been avoided even if the lift pumps had been installed notwithstanding the difficulties it faced in the construction of the lift pumps.

(iii) The fall in water level was due to a combination of uncontrollable factors like (a) an unprecedented fall in the level of water flowing from the upper reaches of the Ganges in the Farakka Feeder canal caused *inter alia* due to low levels of precipitation and a dry spell in the upstream region of the Ganges for two consecutive years (b) As a consequence of erosion of the canal bed due to scouring, the water level fell below normative levels during lean period; and (c) unprecedented low levels of water were further aggravated due to operation of Water Treaty which required a minimum 35000 cusecs of water to be diverted to Bangladesh in alternate 10 day periods between

11thMarch to 11th May of every year. In March, 2016, such diversion of water to Bangladesh left less water in the Farakka Feeder Canal. The resultant low level of water was insufficient to cater to the cooling water needs of FSTPS. Consequently, all units of FSTPS had to be shut down.

(iv) The fall in the water level in the Farakka Feeder Canal was entirely outside the Petitioner's control and squarely falls within the definition of Force Majeure under the PPAs and the 2014 Tariff Regulations. The fact that the water levels were low and constitute a significant phenomenon are corroborated by the views of the Member Secretary, ERPC as recorded in the MOM dated 25.6.2016 and the Office of the Farakka Barrage Authority who has confirmed to the Petitioner vide letter dated 15.2.2017 that the flow of water in the lean season of February-March, 2016 was exceptionally low.

(v) The Petitioner diligently made efforts to construct the lift pumps, but could not do so due to unpredictable technical factors, which could not have been known when the lift pump scheme was envisaged. In March, 2013, during excavation at around 10M below ground level, heavy flow of water from Farakka Feeder Canal started below the canal embankment. Such geological behavior could not have ben envisaged at the planning stage. Further, work of lift of pump house construction was stopped due to safety consideration.

(vi) It was informed by Farakka Barrage Project that deep excavation which were carried out for construction of the lift pump house on the right bank of GFC might endanger the safety of the canal embankment by inducing bank failures, which would pose problems for embankment stability.Accordingly, the Petitioner was directed to backfill the open excavations and take immediate necessary measure to ensure safety of Farakka Feeder Canal. In view of this, the lift pump scheme could not be implemented despite the Petitioner's efforts.

(vii) The Petitioner has no control over natural hydrological phenomenon caused by the forces of nature. It is denied that ERPC has denied the Petitioner's force majeure claim.In fact the ERPC Secretariat has recommended that the fall in water level in Feeder Canal be treated as force majeure event.

(viii) Where the water level is equal to or marginally higher than RL (+) 16.6M the power plant could operate at partial load and not at optimal capacity. The fact that the power plant was not forced to shut down due to water shortage in the past amply evidences the fact that it could operate even without the lift pumps and amount to a force majeure event.

(ix) The Petitioner promptly requested an increase in the level of water in the Farakka Feeder Canal through informal channels as and when fall in water levels was observed and officially communicated the same to the Farakka Barrage Authority vide letter dated 7.3.2016.

(x) The nature of force majeure event was such that its affects could not have been mitigated despite the Petitioner's best efforts.The financial impact on WBSEDCL and its consumers would be a minor fraction of its total ARR and no prejudice would be caused to it.During the occurrence of a force majeure event, the Petitioner's obligation to supply electricity stand suspended and therefore it would be unjust to include such periods for

the purpose of computing percent plant availability. Therefore, periods during which force majeure event affects are in force, the Petitioner ought to be excluded from the calculation of percent plant availability of the Petitioner's generating station.

(xi) The fall in water level in Ganga Feeder Canal was entirely outside the Petitioner's control and falls within the definition of Force Majeure under the BPSA/PPAs and the 2014 Tariff Regulations. The fall in the water levels was caused by the forces of nature and is therefore a Force Majeure.

(xii) The Petitioner has no control over the quantum of water flowing in the Farakka Feeder Canal which is regulated through a barrage maintained and controlled by Farakka Barrage Authority under Central Water Commission. Further, the flow in the Feeder Canal is inextricably linked with the precipitation level in the upper reaches of the Ganges. The Petitioner could not have envisaged such a fall in the water level and such low levels were never experienced by the station over the years of operation of the plant.

(xiii) The Petitioner has fulfilled all the criteria prescribed under the Force Majeure clause of the PPAs so as to claim relief thereunder. There was no occasion for the Petitioner to desist from proceeding with establishing Stage-III of the station in order to cater to the power needs of consumers of the country.

(xiv) The geological behavior experienced by the Petitioner in 2013, when it proceeded with the excavation of the canal bank to construct the lift pumps, could not have been anticipated at the planning stage. In any event, the water level in the canal fell to such a low level that even if the lift pumps had been installed, the Force Majeure event would still have come to pass.

(xv) The diversion of water pursuant to the Water Sharing Treaty is not the sole basis of the Force Majeure claim but also the unprecedented fall in precipitation in the upper reaches of the Ganges and scouring of the canal flow.

13. Based on the above submissions, the issues which arise for consideration in the present case is as follows:

a) Whether the reduction in water levels at the Farakka Feeder Canal coupled with the diversion of water to Bangladesh under the Water Sharing Treaty fall within the ambit of Force Majeure event?

b) Whether the installation of Lift pumps as approved by the Commission could have prevented the Force Majeure event?

14. Since the relief sought for by the Petitioner is with regard to the Force Majeure events under the PPAs, both the issues have been clubbed and decided in this order. Accordingly, based on the submissions of the parties and the documents available on record, we examine the issues as stated in the subsequent paragraphs.

Analysis and Decision

15. The Petitioner had entered into Bulk Power Sale Agreement (BPSA)/ Power Purchase Agreements (PPAs) with the respondents for sale of power from the generating station. The Force Majeure clause provided in the PPAs entered into by the Petitioner with the respondent, WBSEDCL on 25.5.1993 (for Stage-I and II) and on 13.11.2010 (for Stage-III) is extracted as under:

PPA dated 25.5.1993

"9. FORCE MAJEURE

The parties shall ensure due compliance with the terms of this Agreement. However, no party shall be liable for any claim for any loss or damage whatsoever arising out of failure to carry out the terms of the Agreement to the extent that such a failure is due to force majeure events such as war, rebellion, mutiny, civil commotion, riot, lock-out, forces of nature, accident, act of God and any other reason beyond the control of concerned party. But any party claiming the benefit of this clause shall satisfy the other party of the existence of such an event and give written notice within a reasonable time to the other parties to this effect."

PPA dated 13.11.2010

8. FORCE MAJEURE

Neither party shall be liable for any claim for any loss or damage whatsoever arising out of failure to carry out the terms of Agreement to the extent that such a failure is due to force majeure events war, rebellion, mutiny, civil commotion, riot, lock-out, forces of nature, accident, act of God and any other reason beyond the control of concerned party. Any party claiming the benefit of this clause shall reasonably satisfy the other party of the existence of such an event and give written notice within a reasonable time to the other party to this effect. Generation/ drawal of power shall be started as soon as practicable by the parties concerned after such eventuality has come to an end or ceased to exist."

In terms of the above, if any party to the PPA is adversely affected by a Force Majeure event, such party shall not be liable for any loss or damage whatsoever resulting from the failure to carry out its obligations on account of such event. In effect, the party's contractual obligations for the period starting from commencement of force majeure event and till its termination would remain suspended.

16. The Petitioner in the Petition has submitted that the sole source of cooling water for generating station is from Ganga Feeder Canal (GFC) and adequate cooling water is drawn from GFC only if the level of cooling water available in the fore-bay is at or

above 17.5 M. Below the said level, adequate cooling water cannot be drawn for operating the generating station at full load. The Petitioner has stated that as a result of fall in the quantum of water flowing from upstream areas and the diversion of 35000 cusecs of water to Bangladesh under the Water Sharing Treaty, the level of water in the GFC fell drastically below 17.5 meters. This unprecedented fall in the level of water in the GFC and the consequent impact on the generating station was widely reported by news agencies.

17. The Petitioner has further submitted that due to drastic reduction in cooling water in the GFC from February, 2016 onwards, the Petitioner was constrained to successively shut down each of the six units during the periods of such unavailability. The periods during which the units of the generating station were shut down due to unavailability of cooling water as tabulated by the Petitioner is as under:

Unit Nos.	Date(s) & time of shut down	Date & time of revival	Duration of shut down (hrs)
1.	22.2.2016, 02:06	24.2.2016, 17:33	63.450
1.	26.2.2016, 16:36	22.3.2016, 04:45	588.150
2.	11.3.2016, 17:17	22.3.2016, 16:24	263.117
3.	11.3.2016, 18:49	22.3.2016, 05:00	250.183
4.	11.3.2016, 23:26	23.3.2016, 05:33	270.117
5.	11.3.2016, 19:14	22.3.2016, 18:10	262.933
6.	12.3.2016, 12:00	22.3.2016, 02:08	230.133

18. Accordingly, the Petitioner has submitted that the Availability of the generating station dropped significantly on account of the uncontrollable shut down of units for the said periods and consequently the annual fixed charges receivable by the Petitioner for the year 2015-16 was reduced due to factors beyond the control of the Petitioner. It has submitted that it would be unfair and unjust if the periods during which the unit was shut down due to Force Majeure events were included in the calculation of Availability. Based on this, the Petitioner has submitted that it has suffered a cumulative loss of ₹26.91 crore as reduced capacity charges on this count during 2015-16.

19. The respondent, WBSEDCL has submitted that the Petitioner was aware of the scarcity of water as is evident from the Monsoon Reports for 2014 and 2015 and hence the Petitioner ought to have taken steps to address the issue including the construction of the lift pumps. It has also submitted that the term 'any such reason' has to be construed in the context of the preceding events like rebellion, mutiny, commotion, riot, strike, lock-out, forces of nature, act of God, but diversion of water under the Treaty does not fall into these categories. Referring to the judgment of the APTEL in PGCIL v CERC &ors (2011 ELR (APTEL) 0158, the respondent has pointed out that force majeure in the present case will not include an act caused by human behavior. The respondent has further pointed out that the Petitioner instead of rectifying issues to deal with possible scarcity of water from the GFC went ahead with the construction of Stage-III of the project. Thus, the respondent has stated that the Petitioner at this stage cannot claim the relief under Force Majeure, while the risk of shortage of water from the GFC could have been mitigated. The respondents, GRIDCO& BRPL have submitted that the event of the said water sharing is neither sudden nor unexpected and the Petitioner was well aware of the Water Sharing Treaty and therefore should have anticipated the shortage of water. The respondent, UPPCL has submitted that the stoppage of generating station on account of inadequate water level is not an 'Act of God' but an 'Act of Man'. It has further submitted that it needs to be assessed if such a marginal shortfall in monsoon has a debilitating impact on the operations of the generating station. Accordingly, these respondents have submitted that the claim of the Petitioner for Force Majeure on the ground of shortage of water may be disallowed.

Hydrological Factors

20. As regards hydrological factors, the Petitioner was directed vide ROP of the hearing dated 3.11.2016 to file additional information on the following:

'(a) Specific circumstances/ reasons responsible for inadequate availability of water during February to March 2016 apart from the reason of Indo-Bangla Water Treaty, 1996;

(b) Whether correspondence with Farakka Barrage Authority was made for maintaining required level of water in Ganga Feeder Canal during lean period so that the station get sufficient water for cooling towers; if so, submit the details of the same with documentary evidence"

21. In response, the Petitioner vide affidavit dated 2.1.2017 has submitted that from February, 2016 onwards to March, 2016, there was unprecedented fall in the level of water flowing from the upper reaches of the Ganges into the Ganga Feeder Canal caused due to natural hydrological factors. It has submitted that such inadequate availability of water in the Feeder Canal was caused *inter alia* due to low levels of precipitation and a dry spell in the upstream region of the Ganges for two consecutive years. In support of this contention, the Petitioner has enclosed Monsoon Reports published by Indian Meteorological Department, Ministry of Earth Sciences, GOI for the years 2014 and 2015 and has submitted that large swathes of area through which Ganga Flows received deficient rainfall during the monsoon period consecutively in 2014 and 2015. It has also furnished a day to day record from 15.2.2016 to 31.3.2016 of the rate of flow of water in the Feeder Canal and the corresponding level of water in the Cooling water intake channel. A further reason for less availability of water in the Feeder Canal, as submitted by the Petitioner, is the unavoidable natural scouring of the canal bed. It has submitted that as a consequence of erosion of the canal bed due to scouring, the bed level fell below ordinary levels. Accordingly, the Petitioner has submitted that the aforesaid factors were entirely beyond the control of the Petitioner.

22. We have examined the matter.The submission of the Petitioner is that reduction of water level in the GFC due to hydrological factors such as low level of precipitation and dry spell in the upstream region of the Ganga for two consecutive years, based on the monsoon reports. The monsoon reports for the years 2014 and 2015 enclosed by

the Petitioner show the monthly and seasonal sub-division wise rainfall statistics for the period from June to September, which indicate that the monsoon was deficient by 12% during 2014 and 14% during 2015. This rainfall deficiency, in our view, is marginal, considering the fact that the deficiency is spread across all over India. Moreover, the monsoon data relates to the period from June to September, which is not adequate enough to assess its impact and conclude that there has been reduction in the level of water flowing from upper reaches of the river Ganga into the GFC thereby affecting the generating station. Even otherwise, the vagaries of nature and/or geological behavior cannot by itself be a ground for claiming Force Majeure, unless it can be shown that all reasonable steps were taken by the Petitioner to avoid the said events. Apart from the fact that the rainfall deficiency was neither unprecedented nor abnormal, the Petitioner appears to have taken no steps to mitigate the risk of unavailability of water in the GFC. It is observed that while the issue of shortage of water commenced on 22.2.2016 resulting in shut down of Unit-I, the Petitioner had only on 7.3.2016 requested the Farakka Barrage Authority to increase the water level in the Feeder Canal. On scrutiny of the day to day record of the Feeder Canal for the period from 15.2.2016 to 31.3.2016 enclosed by the Petitioner, it is noticed that for 21 days out of 31 days, the level of water in the Ganga Feeder Canal was 16.6.M or above. In our view, the Petitioner could have reasonably foreseen the scarcity of water from the monsoon reports and taken adequate steps to mitigate the risk of non-availability of water. Having not taken any steps to mitigate the event, the Petitioner cannot, in our view, rely on hydrological factors and claim relief of Force Majeure under the PPAs.

23. Further, the Petitioner was directed vide ROP of the hearing dated 24.1.2017 to submit information on the following;

(b) Comments/views of the Farakka Barrage Authority regarding reasons for low level of water in the Ganga Feeder Canal for the period 22.2.2016 to 23.3.2016. Whether such low level of water in Ganga Feeder canal is a normal phenomenon during lean season or it was an unprecedented occurrence in the recent years.

24. In response, the Petitioner vide affidavit dated 23.3.2017 has submitted that it had sought comments of FarakkaBarrage Authority vide letter dated 3.2.2017 and the Farakka Barrage Authority had confirmed vide letter dated 15.2.2017 that the flow of water in the lean season, which includes February and March, 2016 was exceptionally low and was a significant phenomenon. Accordingly, the Petitioner has submitted that an independent third party has corroborated and validated the Petitioner's claim that the generating station was adversely affected by unprecedented, unforeseeable and uncontrollable fall in water level in Farakka Feeder Canal. The respondent, WBSEDCL has contended that the letter dated 15.2.2017 of the Farakka Barrage Authority only stated that the water in the lean season of 2016 reduced exceptionally in comparison to the flow in recent years. It has also submitted that the letter does not indicate the quantum of shortfall and the Petitioner ought to provide details of the same along with graphical presentation of the levels and inflow of water in the canal for the last five years against different dates.

25. The matter has been examined. In response to the Petitioner's letter dated 3.2.2017, the Farakka Barrage Authority vide letter dated 15.2.2017 has informed the following:

"….Generally, during the lean season, water flow in river Ganga diminishes and further due to international treaty i.e. water sharing arrangement on ten daily basis with Bangladesh reduction in discharge occurs in river and feeder canal. This is a normal phenomenon of each year.

However, during lean season of 2016, flow in Farakka feeder canal reduced exceptionally in comparison to flows of recent years. This discharge reduction in year 2016 in river and subsequently in canal was not as usual one, but it was significant phenomenon in comparison to recent past years."

26. It is evident from the above letter that while the reduction in discharge in river and feeder canal during the lean season is a normal phenomenon every year, the same was significant during the lean season of 2016. However, the observation of the said Authority that the reduction in discharge of water was significant in the lean season of 2016 has not been substantiated/corroborated, either bysupportingdocuments or through comparative analysis of the datafor the recent past. Thus, the low levels in water during the lean season being a normal phenomenon, the Petitioner's reliance on theletter dated 15.2.2017 to justify the event of force majeure due to non-availability of water for the generating station, is in our view misplaced. Hence, the submissions of the Petitioner on this count are not accepted.

27. Contrary to the submissions of the Petitioner that water level was significantly low due to hydrological factors during the two consecutive years of 2014 and 2015, it is noticed that sufficient water was available in GFC and the generating station had also not experienced any shutdown or partial loading between the periods from 2012 to 2015. This is evident from the submissions of the Petitioner in Para 14 of the Petition which is extracted under:

> *"14.In any event, at the request of the Petitioner, the Farakka Barrage Authority carried out repairs on the gates at Farakka Barrage to prevent leakages ad to ensure adequate quantity of water/water level in the Ganga Feeder Canal. Hence, sufficient water was available in the Ganga Feeder Canal round the year and FSTPS did not experience any shutdown or partial loading due to water shortages between 2012 to 2015."*

In this background, the submission of the Petitioner that the reduction in water level in GFC resulting in the shutdown of units of the generating station is a Force Majeure event under the PPAs lacks merit for consideration. Accordingly, the relief claimed by the Petitioner on this count is rejected.

Diversion of Water due to Water Sharing Treaty

28. Another submission of the Petitioner is that the diversion of substantial volumes of water to Bangladesh in terms of the Water Sharing Treaty had reduced water in the GFC and this has resulted in shutdown of the units due to insufficient amount of cooling water for the generating station. This according to the Petitioner is a Force Majeure event as the same is beyond the control of the Petitioner.

29. The Petitioner was directed vide ROP of the hearing dated 3.11.2016 to file additional information on the following:

> *"Explain how the Indo-Bangla Treaty, 1996 has affected the availability of water to Farakka STPS during lean period."*

30. In response, the Petitioner vide affidavit dated 2.1.2017 has submitted that during February, 2016 and March, 2016 the water levels in GFC was already diminished and inadequate due to unforeseen low levels of precipitation and flow of water from the upstream regions of the Ganges. It has stated that such diminished levels of water in GFC were further aggravated by operation of the Indo-Bangla Treaty, 1996 which required a minimum of 35000 cusecs of water to be diverted to Bangladesh in alternate 10 day periods between 11th March and 11th May every year.It has further stated that in March, 2016, such diversion of water to Bangladesh left only 15000 cusecs (approx.) of water in the GFC and the resultant low level of water was insufficient to cater to the cooling water needs of the generating station and consequently all units had to be shut down.

31. The respondents have submitted that the Petitioner was aware of the Treaty between the Govt. of India and Bangladesh on sharing of the Ganga/Ganges waters at Farakka. They have also submitted that the diversion of water from the GFC is undertaken by Govt. of India to Bangladesh and is in accordance with the water

sharing agreement in force since 1996. Accordingly, the respondents have submitted that the drop in water level was clearly contemplated and to the knowledge of the Petitioner and can neither be treated as unprecedented nor uncontrollable.

32. The matter has been examined. The Government of India and the People's Republic of Bangladesh had signed a Water Sharing Treaty on 12.12.1996 for sharing of the Ganga/Ganges waters at Farakkabetween India and Bangladesh by ten day periods from the 1st January to 31st May every year, for a period for 40 years, as per the following formula:

Availability at Farakka	Share of India	Share of Bangladesh
70000 cusecs or less	50%	50%
70000-75000 cusecs	Balance of flow	35000 cusecs
75000 cusecs or more	40000 cusecs	Balance of flow

33. In terms of the Water Sharing Treaty, there is mandatory annual sharing of a specified quantum of water (35000 cusecs) from the Ganga Feeder Canal with Bangladesh. All the units of Stage-I and II of the generating station of the Petitioner had come into commercial operation prior to the Treaty being signed on 12.12.1996 for sharing of waters.However, the Stage-III has been commissioned on 4.4.2012 i.e after more than 15 years. Therefore, the existence of a treaty with Bangladesh and the diversion of water to Bangladesh in terms of the said treaty were all within the knowledge of the Petitioner at the time of conception as well as execution of Stage-III of the generating station. The Petitioner was expected to take all precautionary measures to meet the shortfall in availability of water on account of the operation of the Water Sharing Treaty.

34. The fact that the diversion of water to Bangladesh in terms of the said treaty would result in non-availability of water to the generating station was well within the knowledge of the Petitioner even before the inception of Stage-III. It is observed that

the Petitioner had filed Petition No.189/2010 before this Commissionseeking revision of norms of Normative Plant Availability in respect of its power stations in EasternRegion namely, Kahalgaon STPS, Stages I and II, including Farakka STPS (1600 MW) on account of acute shortage of coal at these stations and non-availability of cooling water at Farakka STPS for the period 2005-10.The relevant portion of the submissions made by the Petitioner in the said Petition (189/2010) is extracted hereunder:

> *"Further, in respect of Farakka STPS, it submitted that cooling water for the station is drawn from Farakka Feeder Canal which receives water from river Ganga. As per Indo-Bangladesh Water-Sharing treaty, 1996, Bangladesh is given minimum 35000 cusec of water during the lean season. Due to the above provision, Farakka STPS cooling water supply gets affected during the above period leading to generation loss on account of partial load operation/ unit outage thereby compounding the problem. Loss of generation & availability on account of water at Farakka Station is as under:*
>
> *xxxxxxx"*
>
> *It is further submitted that Petitioner has already taken up installation of lift water pumps to mitigate this problem and the same shall be commissioned during the period 2011-12."*

35. It is clear from the above that the Petitioner was aware of the water shortage from Farakka for which the Petitioner had envisaged for installation of lift water pump to mitigate the problem by 2011-12. Thus, diversion of water to Bangladesh in terms of the Treaty and the fact that such diversion of water would result in the reduction of cooling water for the generating station was well known to the Petitioner from the year 2005 onwards.Despite this, no adequate steps appear to have been taken by the Petitioner to mitigate the risk of unavailability of water for the generating station. In our view, the reduction of cooling water for the generating station on account of diversion of water in terms of the treaty could neither be unforeseen nor unexpected by the Petitioner. In view of this, the Petitioner cannot contend thatthe reduction of cooling water in GFC due to diversion of water had resulted in shutdown of units of the generating station during the period from 22.2.2016 to 22.3.2016 for reasons falling beyond the control of the Petitioner and hence is a Force Majeure event under the

PPAs. We are of the considered view that the reduction in the level of water due to diversion cannot be considered as a Force Majeure event, and therefore,the Petitioner is not entitled to the relief of Force Majeure under the PPAs.

36. Based on the above discussions and considering the factors in totality, we hold that the unprecedented fall in the water levels due to hydrological factors coupled with diversion of water to Bangladesh under the Water Sharing Treaty, are all factors which are not beyond the control of the Petitioner. Accordingly, the shutdown of units of the generating station due to the non-availability of cooling water cannot be construed as a force majeure event falling within the scope and definition of Force Majeure under the respective PPAs.We accordingly hold that the period of shutdown of units shall be liable to be considered in the calculation of Percent Plant Availability of the generating station.

Installation of Lift Pumps

37. The Petitioner in the Petition has submitted that it had conceived the construction of lift Pumps at the canal to counteract the reduction in the quantum of water. It has also submitted that the Commission vide order dated 14.6.2012 in Petition No. 222 of 2009*(approval of tariff of Farakka STPS (1600 MW) for the period from 1.4.2009 to 31.3.2014)* had approved the installation of the said pumps but the work could not be carried out due to various issues faced during the construction period. It has also submitted that even if the above mentioned lift pumps were installed, the generating station would not have had sufficient cooling water supply. The Petitioner has further submitted that in March, 2016, when water was diverted as per the treaty, the water level in the GFC fell to the level of RL (+) 15.4 M which is far below the requisite RL(+) 16.6 M crest level of the existing intake structure at the generating station precipitating a shutdown of the entire plant. The Petitioner has

further submitted that even if the lift pumps were installed, a water level of RL (+) 15.4 M is too low for the lift pumps to enable drawal of cooling water. The Petitioner has submitted that this unprecedented and uncontrollable reduction in water levels constrained the Petitioner to shut down the generating station.

38. The Petitioner was directed vide ROP of the hearing dated 3.11.2016 to submit additional information on the following:

> *"Reason for not installing water pump during 2009-14 even though it was agreed at that point that considering the level if water came down in Ganga Feeder Canal, the lift pump was necessary to draw required quantum of water for cooling towers."*

39. In response, the Petitioner has submitted that the work of Lift pump house construction was awarded to M/s IVRCL in 2011, which involved deep excavation of silty-clayey soil strata using sheet piling adjacent to the right of the canal. It has submitted that after completing the installation of sheet piling, excavation activity was commenced and during excavation at 10 m (approx.) below ground level, heavy flow of water from the canal to the excavation pit was noticed and the pit filled completely with water upto the ground level. The Petitioner has also submitted that this resulted in cracks in the canal embankment which happened due to sand boiling condition below the excavation pit and piping action from the canal below the embankment. It has further submitted that such geological behavior could not be envisaged at the planning stage. Accordingly, the construction of lift pump house was stopped for safety considerations so as to preserve the right bank of the canal. The Petitioner has stated that subsequently, the Superintending Engineer of Farakka Barrage Project also informed the generating station that deep excavations for construction of lift pump house might endanger the safety of the canal embankment by inducing bank failures thereby posing problems for embankment stability. It has also stated that the Superintending Engineer further directed the Petitioner to backfill the open excavation and take necessary measures to ensure safety of the canal. In view of this, the

Petitioner has submitted that the lift pump scheme could not be implemented. The Petitioner has added that even otherwise, the water level in the canal fell to level of RL(+) 15.4 M during the period February and March, 2016 and the installation of lift pump could not have drawn adequate water as the minimum level of water required for the operation of lift pump was RL (+) 16.6 M.

40. The respondent, WBSEDCL has submitted that the Petitioner was aware of the possibility of scarcity of water from the GFC and thus commenced the construction of lift pumps during 2007. It has also submitted that though the Commission by order dated 14.6.2012 in Petition No. 222 of 2009 had approved additional expenditure to be incurred towards the construction of lift pumps, the Petitioner could not complete the same even after lapse of more than 10 years. According to the respondent, the problem of unavailability of water was on account of the Petitioner's failure to complete construction of lift pumps and instead of rectifying the issues of scarcity of water, the Petitioner had gone ahead with the construction of Stage-III of the generating station. The respondent has further stated that the Petitioner was aware of the monsoon reports of 2014 and 2015 which clearly indicated scarcity of water and hence could have taken steps to address the issue by construction of the Lift pumps. The respondent has also stated that the design of the water pumps as well as the associated risk and consequence of installing pumps was on the Petitioner and therefore, it cannot be contended that since water level has fallen below RL(+) 16.6 M, it would qualify as Force majeure event. Accordingly, the respondent has stated that the design risk of the lift pumps was entirely on the Petitioner and is therefore, required to bear any consequence as a result of the same. The respondent UPPCL has submitted that receding water levels were not unforeseen and as envisaged by the Petitioner, the Commission had approved the installation of lift pumps way back in the year 2006. As the lift pumps were not installed till 2013-14, the respondents

cannot be made to bear the cost on account of the delay in installation of lift pumps by more than 10 years.

41. The matter has been examined. There is force in the submissions of the respondents that the non-availability of water and consequent shut down of the generating station was due to the failure of the Petitioner to complete the installation of lift pumps. It is observed from the letter of the Petitioner dated 16.3.2016 addressed to the Principal Secretary, Irrigation & Waterways Department, Govt. of WB that pursuant to the approval of the Commission in 2006, the civil work for installation of Lift pump was awarded by the Petitioner during 2007. Despite the submissions of the Petitioner (in Petition No. 189/2010) as quoted in para34 above, that it had taken up installation of lift water pumps to mitigate this problem and that the same would be commissioned during the period 2011-12, the Petitioner could not proceed with and complete the said work. Thereafter, in Petition No. 222/2009 (tariff for FSTPS for 2009-14) the Petitioner had claimed additional capital expenditure of ₹6810.00 lakh in 2013-14 towards the construction of lift pumps and the Commission by order dated 14.6.2012 had allowed the capitalization of the said expenditure observing as under:

> *"29.. Thus, taking into consideration that the requirement of this work is on account of diversion of water as per revised Indo-Bangla river water agreement, the expenditure claimed is allowed under Regulation 9(2)(ii)of the 2009 Tariff Regulations*."

42. Subsequently, in Petition No. 233/GT/2014 filed by the Petition for revision of tariff of FSTPS for 2009-14 after truing-up exercise, the Petitioner had sought the capitalization of additional expenditure towards construction of approach road for lift pump house for the period 2009-13.However, the claim for capitalization of expenditure of ₹6810.00 lakh in 2013-14 towards Lift pumps was withdrawn by the Petitioner by affidavit dated 28.10.2013 stating that the Lift pump house was located at the bank of the Ganga Feeder Canal outside the premises of the plant and in order to facilitate the execution of work of lift pump house, proper approach road was required

for movement of material /equipment. Based on the submission of the Petitioner, the Commission by order dated 12.11.2014 observed as under:

"*22. The petitioner has further submitted that the expenditure of ₹6810 lakh was projected to be incurred in 2013-14 towards installation of lift pumps was approved by the Commission in order dated 14.6.2013 based on the progress of erection activities. The petitioner has also submitted that in March 2013 while civil works related to this package were being carried out, there was sudden ingress of subsoil water from nearby Farakka feeder canal to lift pump house area and due to this unforeseen incident the excavation work of lift pump house was affected adversely due to flooding and was stopped. The petitioner has stated that after detailed investigation and deliberation with M/s IVRCL, the executing agency it was been decided to modify the deep dewatering system and also provide one row of sheet pile along feeder canal bank to stop recurrence of such incidence in future. The petitioner has submitted that the design of sheet pile are being finalized and the erection work can start only after dewatering of the lift pump house area and completion of civil work of lift pump house. Accordingly, the petitioner has submitted that the capitalization of lift pump scheme amounting to ₹6810 lakh may not be possible during 2013-14.*

23. We have considered the submissions of the petitioner. The generating station has been allowed an amount of ₹2910.00 lakh as Compensation Allowance in terms of Regulation 19(e) of the 2009 Tariff Regulations, since many of the units are in operation for more than 10 to 25 years from its COD. As the Compensation allowance granted to the generating station is for meeting expenses towards assets of capital nature including assets of minor nature, we are of the view that the expenditure towards construction of approach road to Lift pump house, even presuming that the Lift pump would be installed, in future, should be met from Compensation Allowance allowed to the generating station. Accordingly, the claim of the petitioner for capitalization of ₹11.97 lakh in 2009-10 and ₹0.14 lakh in 2011-12 towards construction of approach road has not been allowed."

43. It is evident from the above that the Petitioner being aware of the reduction in the level of water and the necessity of installation of lift pumps to offset the low water levels in the Feeder Canal hadawarded the contract for installation of lift pumps during the year 2007. The Petitioner had also undertaken to commission the lift water pumps in the generating station by 2011-12, as evident from its submissions in Petition No. 189/2010.Despite the submissions of the Petitioner and orders of the Commission as aforesaid, the installation of lift pumps to offset the low levels of water in the feeder canal was delayed by the Petitioner even after a gap of several years. Having not taken appropriate steps to mitigate the risk of low levels of water in GFC, the Petitioner cannot, claim the shortage of water in GFC as an event of force majeure.

44. It is observed that the Superintendent Engineer of Farakka Barrage Project,by letter dated 7.3.2016,had informed the Petitioner that deep excavations for construction of lift pump house might endanger the safety of the canal embankment by inducing bank failures thereby posing problems for embankment stability. The Petitioner has placed reliance on the said letter and has submitted that in view of the directions of the said authorityto backfill the open excavation and take necessary measures to ensure safety of the canal, the lift pump scheme could not be implemented.In our view, the reliance on the letter dated 7.3.2016 by the Petitioner ismisplaced. It is observed from Commission's order dated 12.11.2014 (as quoted above) that the Petitioner had not claimed additional capital expenditure towards construction of lift pumps (though allowed in order dated 14.6.2012) in 2013-14 due to problems faced in the construction of lift pumps. The issues raised by the said authority in its letter are similar to the problems relating to the construction of lift pumps which was discovered as early as in March, 2013 and taken note of in the order dated 12.11.2014. Admittedly, the said problems had not been rectified by the Petitioner even after a lapse of 4 years. In our view, the Petitioner ought to have taken measures to sort out the issues with respect to lift pumps as it was fully aware of the reduction in the levels of water. Having not done so, the Petitioner cannot now place reliance on the letter dated 7.3.2016 (during the period when water level is low) and contend that the non-installation of lift pumps was based on the directions and the consequent shutdown of units of the generating station on account of low level of water in canal is a force majeure event. The Petitioner cannot be permitted to take advantage of its own laxityand claim relief under Force Majeure.

45. One more submission of the Petitioner is that the level of water in the forebay of the GFC fell to a level of RL (+) 15.4.M during the period in February, 2016 and March, 2016. It has stated that at such a level even if the above mentioned lift pumps

has been installed, the generating station could not have drawn adequate water as the minimum level of water required for the lift pumps to operate is RL (+) 16.6.M. The respondent WBSEDCL has submitted that the design of lift pumps as well as the risk and consequence of installing the lift pumps is on the Petitioner. It has further submitted that the Petitioner has chosen the design parameters for the lift pump operating at RL (+) 16.6 M of water. Subsequently, the Petitioner cannot contend that since water level has fallen below RL (+) 16.6 M, it would qualify as a force majeure event. Accordingly, the respondent has submitted that the design risk of the lift pump is entirely on the Petitioner and the Petitioner is required to bear the consequences as a result of the same. Similar submissions have been made by other respondents.

46. The matter has been examined.We have noted in this order that the Petitioner was aware of the possibility of shortage of water in the GFC and should have undertaken measures to mitigate the problem of shortage by installation of lift pumps.The contention of the Petitioner that even if lift pumps is installed, the generating station could not have drawn adequate water as the minimum level of water required for the lift pumps to operate is RL (+) 16.6.M is not acceptable, since the Petitioner had chosen the design parameters of RL (+) 16.6 M for the lift pump. Accordingly, the risk and consequence of installation of lift pump is on the Petitioner and it cannot be argued that the water level which has fallen below RL (+) 16.6 M, would qualify as a force majeure event. As stated above, it is observed from the day to day record of the water intake in the canal that the level of water for 21 days (out of 31 days) in the GFC was RL (+) 16.6 M or above. Had the Petitioner installed the lift pumps, as approved by the Commission earlier, it could have generated power during the said period. In our view,the non-installation of lift pumps by the Petitioner had resulted in the non-availability of water /reduction in the water level in the feeder canal

and the same would not qualify as a Force Majeure event, under the PPAs. Accordingly, the relief prayed for by the Petitioner on this count is rejected.

47. We have in this order decided that the non-availability of water due to hydrological factors coupled with the diversion of water to Bangladesh in terms of the Treaty cannot fall within the scope of the force majeure clausein the PPAs. We have also held that the reduction of water levels in GFC is on account of the non-installation of lift pumps by the Petitioner and hence the risk and consequence of shut down of the units is on the Petitioner. Accordingly, the periods during which the units of the generating station were under shut down shall be taken into account while calculating the Availability of the generating station in terms of Regulation 30 of the 2014 Tariff Regulations. We direct accordingly.

48. It is also noticed that the Petitioner had sent letters on 18.3.2016 to the respondents as regards the occurrence of the Force Majeure events due to non-availability of cooling water and had also informed the same to ERPC and ERLDC vide letters dated 11.3.2016 and 12.3.2016 respectively. It is noticed that the issue was raised in the 33rd meeting of TCC/ERPC on 24.6.2016 and 25.6.2016, wherein ERPC after deliberation had disposed of the plea of the Petitioner as under:

> *"Beneficiary members felt that the instant case did not meet the force majeure criteria of suddenness and unexpectedness. It was also observed that the PPAs were bilateral in nature, the force majeure clause of PPAs is subject to acceptance by the beneficiaries individually and in a forum separate from ERPC. It was felt that NTPC needs to come out with a future plan for prevention of recurrence of such a situation. Members felt that the issue may be taken up by NTPC with the Ministry of Power for resolution in a separate meeting. Member (GO & D), CEA also endorse the view that NTPC should take up the issue with MOP/ CEA for an amicable solution. NTPC agreed.*
>
> *NTPC assured that they would install the submersible pumps as a precautionary measure."*

49. The respondents GRIDCO & BRPL have submitted that in terms of the deliberation in the 33rd meeting of ERPC, the Petitioner may solve the problems/issues in any manner taking the help of CEA/MOP for installing lift pumps/submersible pumps

but should not pass on the financial burden on the beneficiaries. We direct that the Petitioner,after taking into account the hydrological factors and the diversion of water to Bangladesh in terms of the treaty for a period of 40 years, shall undertake appropriate measuresto mitigate the risk of low levels of water in the generating station, in consultation with the CEA /MOP, GOI, to prevent the recurrence of such events in future.

50. Petition No. 154/MP/2016 is disposed of in terms of the above.

Sd/-	***Sd/-***	***Sd/-***	***Sd/-***
(Dr. M.K.Iyer)	**(A. S. Bakshi)**	**(A. K. Singhal)**	**(Gireesh B Pradhan)**
Member	**Member**	**Member**	**Chairperson**