

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No.464/MP/2019

Coram:

**Shri. I.S. Jha, Member
Shri. Arun Goyal, Member
Shri. Pravas Kumar Singh, Member**

Date of order: 1st January, 2024

In the matter of:

Application under Regulation-31(6) of CERC (Terms and Conditions of Tariff) Regulations, 2014, read with regulation 44(8) and 44(7) of CERC (Terms and Conditions of Tariff) Regulation, 2019, for recoupment of under-recovered energy charges due to shortfall in energy generation for reasons beyond the control of generating station during the FY 2018-19 in respect of **Dhauliganga Power Station**.

And

In the matter of

NHPC Limited,
(A Govt. of India Enterprise)
NHPC Office Complex, Sector-33,
Faridabad (Haryana) - 121 003.

.....Petitioner

Vs

1. The Chairman,
Punjab State Power Corporation Ltd.,
The Mall, Near Kali Badi Mandir, Patiala-147001 (Punjab).
2. The Chairman,
Haryana Power Utilities (UHBVNL & DHBVNL),
Shakti Bhawan , Sector-6, Panchkula-134109 (Haryana).
3. The Chairman,
Uttar Pradesh Power Corporation Ltd.,
Shakti Bhawan, 14-Ashok Marg, Lucknow-226001 (Uttar Pradesh).



4. The Chief Engineer & Secretary,
Engineering Dept. 1st Floor,
UT Chandigarh, Sector-9 D, Chandigarh-160009
5. The Chief Executive Officer,
BSES Rajdhani Power Ltd., BSES Bhawan,
Nehru Place, New Delhi-110019.
6. The Chief Executive Officer,
BSES Yamuna Power Ltd.,
Shakti Kiran Building, Karkadooma, Delhi-110072
7. The Chief Operating Officer,
Tata Power Delhi Distribution Ltd.
(A Tata Power and Delhi Govt. Joint Venture)
Erst While North Delhi Power Ltd., Grid Sub-station Building,
Hudson Lines, Kingsway Camp, Delhi-110009
8. The Chairman-Cum-Managing Director,
Uttaranchal Power Corporation Ltd., Urja Bhawan,
Kanwali Road, Dehradun - 248 001 (Uttarakhand).
9. The Managing Director,
Jaipur Vidyut Vitaran Nigam Ltd. (JVVNL) ,Vidyut Bhawan,
Janpath, Jyoti Nagar, Jaipur-302005 (Rajasthan)
10. The Managing Director,
Ajmer Vidyut Vitaran Nigam Ltd. Old Power House,
Hatthi Bhatta, Jaipur Road, Ajmer - 305 001 (Rajasthan)
11. The Managing Director,
Jodhpur Vidyut Vitaran Nigam Ltd., New Power House,
Industrial Area, Jodhpur - 342 003(Rajasthan)
12. The Principal Secretary,
Power Development Department, New Secretariat
Jammu (J&K)-180001
13. The Chairman,
Himachal Pradesh State Electricity Board, Vidyut Bhawan,
Kumar House, Shimla - 171 004 (Himachal Pradesh)

.....Respondents



Parties Present:

Shri Ravi Shankar Dvivedi, Advocate, NHPC
Shri Sushant Sarkar, Advocate, NHPC
Shri Anand Ganesan, Advocate, PSPCL
Shri Amal Nair, Advocate, PSPCL
Shri Sachin Dubey, Advocate, BRPL
Shri S. K. Meena, NHPC
Shri Aman Mahajan, NHPC

ORDER

The Petitioner, NHPC Ltd. (hereinafter referred to as NHPC) has filed this petition and subsequently amended the petition seeking the following relief(s):

- a) Hon'ble Commission may kindly allow recovery of energy charges amounting to Rs 4.474 Crs against the shortfall in generation of 36.36 MU in FY 2018-19 as per regulation, 44(8) and 44(7) of CERC (Terms and Conditions of Tariff) Regulations, 2019 as explained in para- 12.
- b) To allow issuance of supplementary bill for recovery of shortfall in energy charges as mentioned at para-13.
- c) To allow issuance of supplementary bill for recovery of shortfall in energy charges directly from beneficiaries after issuance of truing up order for the period 2014-19 by Hon'ble Commission as mentioned in para-14.
- d) Pass such other and further order / orders as are deemed fit and proper in the facts and circumstances of the case

2. The Dhauliganga Power Station (hereinafter referred to as "the generating station") located in the State of Uttarakhand having installed capacity of 280 MW which comprises of four units of 70 MW each. The generating station was declared under commercial operation on 1.11.2005. The approved annual Design Energy (DE) of the generating station is 1134.69 MU and keeping in view the provision of auxiliary losses (1.2%) and free power to the home State (12%), the saleable energy works out to be 986.54 MU.



Submission of the Petitioner

3. Saleable Schedule Energy during 2018-19 is 933.02 MU against the saleable design energy of 986.54 MU. There is a total shortfall of (-) 53.52 MU (986.54 MU – 933.02 MU) in generation during FY 2018-19. Out of total shortfall of (-) 53.52 MU, shortfall in generation beyond the control of petitioner was (-) 36.36 MU. Hence, recovery of energy charges on account of generation shortfall of 36.36 MU due to reasons beyond control of the petitioner needs to be recovered. Detailed analysis on daily basis is annexed as Annex-II of the petition.

4. Present claim is based on tariff allowed by the Commission for FY 2018-19 vide order dated 24.02.2016 in petition no. 230/GT/2014. The Petitioner has recovered energy charges amounting to ₹114.11 crore corresponding to saleable scheduled energy of 933.28 MU against energy charges of ₹120.66 crore. Hence there is an under recovery of energy charges amounting to Rs 6.55 crores. Accordingly, considering the shortfall in generation beyond the control of petitioner was (-) 36.36 MU, energy charges to be recovered considering the ECR of Rs. 1.230 Rs./kWh is Rs 4.47 crore.

5. Commission is requested to allow recovery of shortfall in energy charges for shortfall in energy for reasons beyond the control of Generating Station i.e., ₹4.474 crore in six equal monthly installments by raising supplementary bills to the beneficiaries as per regulation-44(8) and 44(7) of CERC (Terms and Conditions of Tariff) Regulation 2019.

6. As mentioned, these claims are based on tariff order dated 24.02.2016 in petition no. 230/GT/2014 and its subsequent amendment dated 26.04.2016. Hence, Commission



is requested to allow raising supplementary bills to the beneficiary DISCOMs after issuance of truing up order for period 2014-19 in respect of Dhauliganga Power Station.

7. CEA/CWC were requested to certify the actual inflow data in other similar petition but they have shown inability to certify.

Replies and Rejoinders

Reply of UPPCL, Respondent No. 3

8. UPPCL vide its affidavit dated 24.12.2019, has submitted as under:

(a) Allowing compensation on account of low energy generation will mean burdening the beneficiaries when either there is loss of energy due to low inflow or in case of PAF due to generation of electricity more than the NAPAF.

(b) The inflow data for 2018-19 in case of Dhauliganga HEP has not been certified either by CEA or CWC.

(c) The rain fall data submitted by the petitioner does not corroborate the low inflow in 2018-19 in catchment area of the project.

(d) The Commission may base the instant case on that of Tehri HEP where the prayer of THDC (the Petitioner therein) to reduce NAPAF from 77% to 74.408% on account of conditions beyond control for period 17.12.2010 to 28.01.2011 was dismissed by the Commission vide order dated 11.12.2013 in petition no. 220/MP/2011.

Rejoinder of the Petitioner to reply of UPPCL

9. In response to the Respondent UPPCL, NHPC vide its affidavit dated 10.1.2019 has filed its rejoinder and submitted as under:



(a) The provision of incentive against higher NAPAF and recovery of energy charge due to poor hydrology are two different issues covered under separate regulations and hence, it should not be mixed up for denying the legitimate claim of the petitioner.

(b) The petitioner had requested CEA/CWC to certify the actual inflow data in case of other Power Stations but CEA/CWC vide letter dated 23.01.2017 has expressed their inability to certify the inflow data. This fact has already been submitted in the petition.

(c) The referred case of Tehri HEP is not in cognition of the petitioner and hence is not comparable as the case of Tehri HEP was for relaxation in NAPAF whereas the present petition is for recovery of shortfall of energy charges due to poor hydrology.

Reply of Punjab State Power Corporation Ltd. (PSPCL), Respondent No. 1

10. The Respondent No. 1, PSPCL vide its affidavit dated 29.1.2021 and 4.10.2022 has submitted as under:

(a) It cannot be that the Petitioner claims shortfall in energy generation on one hand and schedule less energy than what it ought to have scheduled. The answering Respondent has reasons to believe that the same may be accounted for in the DSM accounting and that the Petitioner may have benefited from the same. This being the case any revenue which the Petitioner earns by sale of power under the DSM mechanism should be correctly disclosed by the Petitioner and should be adjusted against any amounts to be paid by the beneficiaries to it.

(b) The actual inflow cannot always be the same as the design inflow. On some days the actual inflow will be less and on some days it will be more than the design



inflow. The Petitioner cannot possibly ask for recovery of energy charges on account of loss of generation every time the actual inflow is less than the designed inflow. As a hydro power generator, the Petitioner ought to be aware that the quantum of inflow is not constant. This is not an unforeseen event at all or an event beyond the control of the Petitioner. The Petitioner being in the business of generation of hydro power ought to have been aware of this. Therefore, the Petitioner has no basis for claiming relief by citing the loss of generation on account of less inflow.

(c) Petitioner has not provided any details as to what were the reasons which were beyond the control of the Petitioner.

(d) Regulation 44 (8) of the Tariff Regulations 2019 specifically states that the treatment under Regulation 44 (8) shall be applied only when the shortfall in the energy charges on account of saleable energy (ex-bus) is less than the saleable design energy (ex-bus) due to reasons beyond the control of the hydro generating station. The reasons furnished by the Petitioner cannot be said to be 'beyond the control' of the Petitioner. In so far as the aspect of less inflow is concerned, it is submitted that this is a common event for a hydro power generator and therefore not something that the Petitioner could not have foreseen at the time of designing the project.

(e) The Petitioner has placed on record the letter dated 23.01.2017 of the Central Water Commission ("CWC"), whereby CWC has expressed its inability to certify the inflow series on year to year basis. Therefore, the CWC has taken the position that the hydrological uncertainties are part of the planning process and are to the account of the generator. By no stretch of imagination is the letter dated 23.01.2017 a proof of the Petitioner's claim that the recovery sought due to the



shortfall in generation is for reasons beyond the control of the Petitioner. In fact, the letter states to the contrary.

(f) Commission has now been consistently holding that the revenue earned by way of DSM should be adjusted towards any claim being made towards shortfall in generation. In view thereof, it is submitted that the claim made towards shortfall in energy generation in the present Petition, if allowed, be adjusted as against the revenue earned through DSM.

Rejoinder of NHPC to reply of PSPCL

11. In response to the reply of respondent PSPCL, NHPC vide its affidavit dated 28.9.2022 has submitted as under:

(a) The difference of 24.87 MU is the difference between saleable ex-Bus and Saleable schedule energy and is the unscheduled generation to support the grid. However, this difference has been kept under the head of shortfall within the control of generating station as can be seen from para-10 of amended petition. As the petitioner has already kept the unscheduled generation under the control of petitioner, the impact of DSM has already been taken care of and no further adjustments are required to be taken into account for DSM.

(b) Regarding adjustment of revenue earned from sale of power under the DSM mechanism, the petitioner would like to submit that the revenue earned for the energy supplied to grid in deviation from schedule generation is as per DSM Regulations, 2014 and amendments thereof. In order to provide grid support, generating station has to increase generation by overloading machine or depleting reservoir level (if inflow is low) which is used to meet the increase in demand for which some incentive is provided to the generating station. Further, the impact of DSM has already been taken care of and no further adjustments are required to be



taken into account for DSM. Therefore, the submission of the respondent is liable to be rejected.

(c) The petitioner has claimed shortfall on account of less inflow than design inflow, reservoir flushing, high silt and transmission constraint. These factors are beyond the control of the generating station and therefore the statement of the Respondent that vague reasons have been provided for claim of shortfall is wrong and hence denied. The petitioner has calculated the shortfall based on actual inflow on daily basis. Further, to support the shortfall in generation, daily generation report for the days when the shortfall is claimed on account of silt flushing and high silt is attached.

(d) The present shortfall petition is related to loss of generation with respect to design energy of the power station. The design energy is determined on 10 daily basis, based on discharge data in 90% dependable year with 95% machine availability. Whenever, the actual inflow is less than the design inflow, shortfall is bound to happen. Further, in the design energy calculation by CEA, no impact of loss in generation due to silt flushing is taken into consideration. Moreover, the transmission constraint is beyond the control of generating stations as the ATS for evacuation of power generated by the power stations are not the assets of the petitioner and therefore any generation loss due to transmission constraint is beyond the control of the petitioner. Therefore, all the factors viz. less inflow, silt flushing, high silt and transmission constraint are beyond the control of generating station and hence the petition in line with Regulation 44(7) and 44(8) has been submitted.

(e) With regard to the submission of the respondent regarding verification of discharge data, the petitioner would like to submit that CWC vide letter dated



23.01.2017 refused to verify discharge data on year on year basis. As CWC expressed its inability to verify data in other power stations on year on year basis, NHPC did not approach CWC for verification of discharge data in the instant case

ROP Compliance

12. Commission vide ROP dated 27.9.2022 directed the Petitioner to file certain additional information such as actual inflow data certified from CWC, Design Energy calculation, Methodology for calculating daily maximum possible generation, Planned/Forced Outages certified by CEA/NRLDC, day wise details of scheduled energy, actual energy injected into grid, energy accounted for in DSM along with revenue generated from such DSM energy etc. The Petitioner vide its affidavit dated 14.10.2022 has submitted its reply. The Petitioner has submitted the documents including letter from CWC expressing their inability to certify the inflow data, rainfall data, design energy calculation in MS Excel, methodology to calculate maximum possible generation during a day, daily generation reports for the days for which energy shortfall has been claimed, day wise details of scheduled energy, actual energy injected into grid, energy accounted for in DSM along with revenue generated from such DSM energy etc.

Analysis and Decision

13. As per Regulation 44(7) and 44 (8) of CERC (Terms and Conditions of Tariff) Regulation 2019, the recovery mechanism for shortfall in energy charges pertaining to the tariff period 2014-19 (un-recovered portion) has been modified and is reproduced as under:

“Regulation **44(7)**

*“Shortfall in energy charges in comparison to fifty percent of the annual fixed cost shall be **allowed to be recovered in six equal monthly instalments:***



Regulation 44(8)

*“Any shortfall in the energy charges on account of saleable scheduled energy (ex-bus) being less than the saleable design energy (ex-bus) **during the tariff period 2014-19 which was beyond the control of the generating station and which could not be recovered during the said tariff period shall be recovered in accordance with clause (7) of this Regulation.**”*
.....”

14. Before analyzing the data as submitted by the Petitioner, we observe that the average daily inflows as submitted by the Petitioner have not been certified by CEA/CWC. In this regard, it is to bring out that in absence of such certification, the Commission relies on other tools for verifying the claim of the Petitioner i.e. rainfall data (if there is actual shortfall in energy generation due to less inflows), machine outage data (planned and forced outage data), REAs, and daily generation reports indicating number of hours for which generation was affected due to transmission constraints, silt flushing, high silt and other reasons of energy shortfall. Accordingly, in the instant petition also, the inflow data as submitted by the Petitioner along with other data in respect of energy shortfall has been considered to arrive at the allowable energy charge corresponding to energy shortfall beyond the control of the Petitioner.

15. The approved annual design energy (DE) of Dhauliganga Power Station is 1134.69 MU and after accounting for the provision of 1.2% as auxiliary consumption and 12% as free power to home state, the saleable design energy (ex-bus) works out to 986.54 MU. In the FY 2018-19, saleable scheduled energy is 933.02 MU. As such, there is a total energy shortfall of (-)53.52 MU (933.02-986.54 MU) in generation during 2018-19.

16. The Petitioner in the petition has submitted sign convention such as Shortfall in energy generation indicated as (+ve) and Excess generation as (-ve). However, we have revised the same and the following sign convention has been used:



a) In case the generation is less than design energy representing shortfall, (-) sign has been used.

b) In case of the generation is more than design energy representing excess generation, (+) sign has been used.

17. The following table as submitted by the Petitioner giving monthwise details with respect to energy shortfall during the FY2018-19:

| S. No. | Month | Saleable Design Energy at Ex-Bus (MU) | Saleable Schedule Energy at Ex-Bus (MU) | Shortfall(-ve)/ Excess (+ve) (MU) |
|---------------|--------------|--|--|--|
| 1 | 2 | 3 | 4 | 5=4-3 |
| 1 | Apr-18 | 48.76 | 36.23 | -12.53 |
| 2 | May-18 | 79.35 | 73.38 | -5.97 |
| 3 | Jun-18 | 125.48 | 118.90 | -6.59 |
| 4 | Jul-18 | 181.12 | 154.77 | -26.35 |
| 5 | Aug-18 | 181.12 | 159.39 | -21.73 |
| 6 | Sep-18 | 139.11 | 153.73 | +14.62 |
| 7 | Oct-18 | 82.08 | 77.30 | -4.78 |
| 8 | Nov-18 | 45.63 | 44.82 | -0.81 |
| 9 | Dec-18 | 27.55 | 31.45 | +3.90 |
| 10 | Jan-19 | 27.49 | 25.63 | -1.86 |
| 11 | Feb-19 | 22.51 | 23.63 | +1.12 |
| 12 | Mar-19 | 26.34 | 33.79 | +7.45 |
| Total | | 986.54 | 933.02 | -53.52 |

18. As per submission of the Petitioner, the reasons for shortfall of (-) 53.52 MU are as under:

| A. Shortfall due to reasons beyond the control of petitioner | |
|---|-----------|
| Energy shortfall due to less inflow from design inflow on some days (i) | -38.83 MU |
| Energy generated due to excess inflow from design inflow on | +54.36 MU |



| | |
|---|---------------------|
| some days (ii) | |
| Net excess energy generation due to excess inflows (iii)= (i)+(ii) | +15.53 MU |
| Energy loss due to reservoir flushing (iv) | -38.44 MU |
| Energy loss due to high silt(v) | -10.51 MU |
| Transmission constraints(vi) | -2.94 MU |
| Total (A) =(iii)+(iv)+(v)+(vi) | -36.36 MU |
| B. Shortfall due to reasons within the control of petitioner | |
| In order to meet grid requirements, sometimes powerhouse is operated at higher load resulting into depletion of reservoir and at suitable time, reservoir is to be filled again causing loss of generation. In this process, the figure of gain/loss of energy is as under: | |
| Energy generated by depleting reservoir level on some days | +15.59 MU |
| Less generation for increasing reservoir level on some days | -12.50 MU |
| Unit Outage | -1.35 MU |
| Other constraint (Partial load/ramping up/down during peaking/ high inflow/ TRT level etc. | -2.91 MU |
| Excess generation beyond design energy calculation | +8.87 MU |
| Difference between saleable Ex-Bus and Saleable schedule | -24.87 MU* |
| Total (B) | -17.17 MU** |
| Total Shortfall (A+B) | -53.52 MU*** |

* Represents DSM energy

** Work out to +7.70 after excluding above DSM energy

*** Work out to (-) 28.65 MU after excluding above DSM energy.

19. Further, the energy charge shortfall for the year 2020-21 based on saleable schedule energy billed is as under:

| Schedule* Energy (Ex-Bus) (MU) | Free* Energy (MU) | Net Energy Billed (MU) | ECR (₹/Unit) | Allowed Energy Charges (Crs.) | Energy Charges actually recovered (Crs.) | Under recovery of Energy Charges (Crs.) |
|---|-------------------------|---------------------------|-----------------|--|--|---|
| 1 | 2 | 3 | 4 | 5 | 6=3x4/10 | 7=5-6 |
| 1063.64 | 130.62 | 933.02 | 1.2305** | 120.66 | 114.11 | 6.55 |



* Schedule Energy & Free Energy are based on Regional Energy Account issued by NRPC

** Inadvertently indicated by the Petitioner as Rs. 1.2305/kWh, against actual ECR of Rs. 1.223/kWh

20. Out of this energy charge shortfall of Rs.6.55 crore, the shortfall claimed by the Petitioner is Rs. 4.474 crore as under:

| S. No. | Description | Value |
|--------|---|--------|
| A | Shortfall in Energy beyond the control of Generating Station (MU) | 36.36 |
| B | Energy Charge Rate (ECR) (Rs/kWh) | 1.2305 |
| C | Energy Charges to be recovered (Rs in Crores) (A*B/10) | 4.474 |

21. It is noted from the daily generation calculation submitted by the Petitioner that actual saleable exbus generation is 957.89 MU (including DSM energy of 24.87 MU) out of which only 933.02 MU (957.89-24.87) being saleable scheduled generation has been billed by the Petitioner. With regard to the ECR, it is noticed that ECR for the instant generating station is Rs.1.223/kWh. However, the Petitioner has inadvertently indicated the same as Rs.1.2305/kWh. Accordingly, we have considered ECR as Rs.1.223/kWh for further calculations. As such, energy shortfall between actual saleable ex-bus generation of 957.89 MU and saleable design energy of 986.54 MU is (-) 28.65 MU (957.89-986.54). As per table submitted by the Petitioner at para 18, out of this shortfall of (-)28.65 MU, the shortfall beyond the control of the Petitioner is (-) 36.36 MU and shortfall within control of the Petitioner is (+)7.70 MU.

22. With regard to details of energy accounted under DSM and corresponding revenue earned, the Petitioner in reply to the ROP of the hearing dated 27.9.2022 has submitted that energy accounted under DSM during 2018-19 was 24.86 MU and it has earned revenue of Rs. 7.11 crore for the same as against corresponding energy charges of



Rs.3.04 crore (24.86 MU @ Rs.1.223/kWh). It is noticed that the DSM energy indicated in the consolidated claim of the Petitioner is 24.87 MU (para 18) whereas in reply to the ROP the Petitioner has indicated the same as 24.86 MU. Since, the value of 24.86 MU is as per the REA, we have considered the same i.e. 24.86 MU for further calculations. In this regard, the Commission has held in similar cases that if revenue earned from DSM pool is more than corresponding energy charges then adjustment to the tune of corresponding energy charge shall only be considered for arriving at the allowable energy charge shortfall and the balance amount can be retained by the generator for providing support to the grid. Accordingly, after adjustment of Rs. 3.04 crore i.e., deemed recovery of energy charge for DSM energy of 24.86 MU, the actual energy charge shortfall works out to 3.51 crore (6.55-3.04) against energy shortfall of (-)28.65 MU after accounting for DSM energy.

23. As a first step in our analysis for ascertaining the claim of the Petitioner towards shortfall due to reasons of beyond the control of petitioner (Reference table at para 18 above), the following formulae has been used to calculate the maximum possible saleable ex-bus generation corresponding to actual inflows available during each day of 2018-19:

Maximum possible saleable ex-bus generation for a day =

Design energy for the day x Actual inflow (cumecs)x 0.88x0.988/Design Inflow

Where 0.88 represents multiplying factor to account for the free energy of 12% to home states and 0.988 represents multiplying factor to account for the auxiliary consumption of 1.2%.

24. Further, the above derived value of maximum possible saleable ex-bus generation for a day is subject to ceiling of 5.843 MU (280MWx24x0.88x0.988/1000). Summation of 365 such derived values represents the maximum possible saleable ex-bus generation for the year.



25. Following the above methodology, the annual maximum possible saleable ex-bus generation for the year 2018-19 works out to 1007.54 MU against saleable ex-bus design energy of 986.54 MU. As such, the difference of these two figures i.e. (+)21.00 MU (1007.54-986.54) represents net excess generation due to high inflows as compared to design inflows during the year as against the Petitioner's claim of (+) 15.53 MU (Reference third row from top of table at para 18 above). As such, it is held that there was excess flow as compared to the design flow during the year and utilizing it the petitioner could have generated excess energy of (+)21.00 MU.

26. With regard to energy shortfall of (-) 38.44 MU due to reservoir flushing, the same has been verified from the generation report submitted by the Petitioner. As such, the claim of the Petitioner towards energy shortfall due to reservoir flushing is in order. With regard to the claim of the Petitioner that such shortfall is beyond the control of the Petitioner, Commission in similar petitions has already held that generation needs to be stopped for reservoir flushing to avoid turbine damage as and when the silt level in the reservoir reaches beyond the permissible limits and such loss is not accounted for in the design energy calculations approved by CEA. Accordingly, energy shortfall of (-) 38.44 MU is allowed under the shortfall beyond the control of the Petitioner.

27. With regard to energy shortfall of (-) 10.51 MU due to high silt, the same has been verified from the generation report submitted by the Petitioner. As such, the claim of the Petitioner towards energy shortfall due to high silt is in order. With regard to the claim of the Petitioner that such shortfall is beyond the control of the Petitioner, Commission in similar petitions has already held that generation needs to be stopped to avoid turbine damage as and when the silt level in the inflows reaches beyond the permissible limits and such loss is not accounted for in the design energy calculations approved by CEA.



Accordingly, energy shortfall of (-) 10.51 MU is allowed under the shortfall beyond the control of the Petitioner.

28. With regard to energy shortfall of (-) 2.94 MU due to Transmission constraints, the same has been verified from the generation report submitted by the Petitioner. As such, the claim of the Petitioner towards energy shortfall due to transmission constraint is in order. With regard to the claim of the Petitioner that such shortfall is beyond the control of the Petitioner, Commission in similar petitions has held that shortfall due to this reason is beyond the control of the Petitioner. Accordingly, energy shortfall of (-) 2.94 MU is allowed under the shortfall beyond the control of the Petitioner.

29. With regard to 52 days, when there was an excess Generation of (+) 7.71 MU (as per the Petitioner) beyond design energy i.e., the energy generated by the Petitioner during peak season by utilizing the machine capacity over and above the installed capacity, it has been worked out as (+)7.78 MU for 52 days and the same has been considered for further calculations of energy shortfall. It is noticed that during these days, the saleable design energy was 300.54 MU based on design flow, the maximum possible generation during these days based on actual flows would have been 309.62 MU (restricted to design energy parameters), whereas the actual generation (saleable ex bus) achieved by the Petitioner during these days is 317.40 MU. As such, it is clear that there is excess energy generation to the tune of (+) 7.78 MU (317.40 MU – 309.62 MU) using capacity beyond 95%.

Further, it is observed that Petitioner has placed this energy generated by using capacity beyond 95% under the head of “Shortfall due to reasons within the control of petitioner”. However, we are not in agreement with the placement of the same under this category. Actual inflow is a factor beyond the control of the Petitioner and such quantum of



generation is only possible if actual inflows are more than the design inflow required for generation corresponding to 95% of installed capacity. It is to bring out that in some of the recent petitions the Petitioner has started accounted this energy under “Shortfall due to reasons within the control of petitioner”. In other Petitions filed by the Petitioner for recovery of energy charge shortfall for the period 2009-14 and 2014-19, the Petitioner itself used to place this energy generated by using machine capacity over 95% under the head “Energy generated due to excess inflow from design inflow” which were placed under category of “Shortfall due to reasons beyond the control of petitioner” as the actual inflows are beyond the control of the Petitioner. The Commission while dealing with the petitions of the Petitioner as well as other generating companies for the period 2009-14 and 2014-19 has always considered such energy generated under the head of ‘Shortfall due to reasons beyond the control of petitioner’.

30. In view of the above deliberations, the shortfall due to reasons beyond the control of Petitioner as per our calculations is as under:

| Shortfall due to reasons beyond the control of petitioner (MU) | |
|--|---------------|
| Energy shortfall due to less inflow from design inflow on some days (i) | -38.19 |
| Energy generated due to excess inflow from design inflow on some days (ii) | +59.18 |
| Net excess energy generation due to excess inflows (iii)= (i)+(ii) | +20.99 |
| Excess generation beyond design energy calculations (iv) | +7.78 |
| Energy loss due to reservoir flushing (v) | -38.44 |
| Energy loss due to high silt (vi) | -10.51 |
| Transmission constraints(vii) | -2.94 |
| Total (viii)= (vii)+(vi)+(v)+(iv)+(iii) | -23.12 |

Note: out of total shortfall of (-)28.65 MU (after DSM adjustment), balance shortfall of (-) 5.53MU $\{-28.65-(-)23.12\}$ is for reasons within control of the Petitioner



31. Based on above deliberations, the Petitioner needs to be compensated for energy shortfall of (-) 23.12 MU which has occurred due to reasons beyond the control of the Petitioner out of total energy shortfall of (-)28.65 MU. Accordingly, the energy charge to be recovered out of energy charge shortfall of Rs.3.51 crore from the beneficiaries works out as under:

| | | |
|--|-----------|--------------|
| Total shortfall in generation during FY 2018-19 (after adjustment of DSM energy) | A | (-)28.65 MU |
| Total under-recovery of energy charges during FY 2018-19 (after adjustment of energy charge corresponding to DSM energy) | B | ₹ 3.51 Crore |
| Shortfall in generation due to reasons beyond control | C | (-) 23.12 MU |
| Shortfall in energy charges to be recovered during FY 2019-20 | $D=C*B/A$ | ₹2.83 Crore |

32. Accordingly, in terms of Regulation 44(6) of the 2019 Tariff Regulations, we allow the energy charge shortfall of Rs.2.83 crore for the FY 2018-19. The same shall be recovered in six equal monthly interest free instalments by raising supplementary bills to the beneficiaries as per Regulation 44(7) of CERC (Terms and Conditions of Tariff) Regulation 2019. Further, the difference in energy charge shortfall to be recovered for the FY 2018-19, which may arise after true up of tariff for the period 2014-19 shall be recovered directly by the generating station from the beneficiaries through supplementary bills.

33. Petition No. 464/MP/2019 is disposed of in terms of above.

**Sd/
(Pravas Kumar Singh)
Member**

**Sd/
(Arun Goyal)
Member**

**Sd/
(I. S. Jha)
Member**

