CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 163/MP/2023

Coram:

Shri Jishnu Barua, Chairperson
Shri Ramesh Babu V., Member
Shri Harish Dudani, Member

Date of Order: 02.12.2024

In the matter of

Petition under Section 79 of the Electricity Act, 2003 as read with Regulation 26 and Regulation 76 and 77 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and Regulation 111, 112 and 113 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 seeking approval of the additional capital expenditure in respect of the Compressor Enhancement Package for the 726.6 (2x363.3) MW Combined Cycle Gas Based Palatana Power Project of ONGC Tripura Power Company Limited.

And in the matter of

ONGC Tripura Power Company Limited
Delhi Office: 10th Floor, Core-4 and Central,
SCOPE Minar, Laxmi Nagar,
New Delhi-110092 .... **Petitioner**

Vs.

1. Assam Power Distribution Company Limited (APDCL),
(Government of Assam),
"Bijulee Bhawan", Paltan bazar,
Guwahati-781 001

2. Department of Power,
(Government of Arunachal Pradesh)
Vidyut Bhawan,
Itanagar – 791111

3. Department of Power,
(Government of Nagaland)
Kohima – 797 001

4. Manipur State Power Distribution Company Limited,
(Government of Manipur),
Keishampat,Imphal – 795001

5. Power and Electricity Department,
Government of Mizoram,
Aizawal, Mizoram – 796001

6. Meghalaya Energy Corporation Limited,
Short Round road, “LUMJINGSHAI”
Shillong – 793001, Meghalaya.

7. Tripura State Electricity Corporation Limited
Vidyut Bhawan, North Banamalipur,
Agartala, Tripura – 799001 **……Respondents**

Parties Present:
Ms. Poorva Saigal, Advocate, OTPCL
Ms. Pallavi Saigal, Advocate, OTPCL
Ms. Tanya Singh, Advocate, OTPCL
Shri Devyanshu Sharma, Advocate, OTPCL
Shri Amit Dabas, OTPCL

ORDER

This petition has been filed by the Petitioner, ONGC Tripura Power Company Limited (OTPCL), seeking approval of the additional capital expenditure of Rs 4380.64 lakh towards the Compressor Enhancement Package for the 726.6 (2x363.3) MW Combined Cycle Gas Based Palatana Power Project of ONGC Tripura Power Company Limited.

2. The Petitioner has made the following prayers in the instant petition:

(a) Admit the Petition.

(b) Allow capitalization of the requested ad-cap expenses and other incidental expenditure due to installation of Compressor Enhancement Package to the Petitioner.

(c) Allow any other relief and/or pass any other order as Hon'ble Commission may deem fit and appropriate under the circumstances of the case and allow additions / alterations / changes / modification to the Petition at a future date;

(d) Condone any inadvertent omissions, errors, short comings and permit the Petitioner to add/ change/ modify/ alter this filing and make further submissions as may be required at a future date; and

(e) Pass such other and further orders as deemed fit and proper in the facts and circumstances of the case.

3. The Petitioner has OTPC Palatana Generating Station with an installed capacity of 726.6 (2x 363.3) MW comprising two Gas Turbine (GT) units of 232.39 MW each and

two Steam Turbine (ST) units of 130.91 MW. The generating station is a joint venture company of ONGC, GAIL, India Infrastructure Fund-II, and the Government of Tripura, with the major shareholding by ONGC (50%), GAIL (26%), IIF-II (23.5%) and Government of Tripura (0.5%). Out of the 726 MW, 683 MW of power from the project is tied up on a long-term PPA basis with the seven North East beneficiary states (Respondents 1 to 7 as mentioned above), and the balance capacity of 43 MW is available to OTPC towards merchant sale.

4. The COD of Unit-I of the generating station is 4.1.2014, and that of Unit-II is 24.3.2015. Accordingly, the Commercial Operation Date of the generating station is 24.3.2015.

Background

5. Prior to filing the instant petition, the Petitioner, on 28.10.2019, filed Petition No. 109/GT/2020 for the determination of the tariff of the generating station for the tariff period 2019-24. The Petitioner, in the said petition, has claimed additional capital expenditure of Rs 4380.64 lakh towards the compressor enhancement package. The Commission, vide order dated 11.1.2022 in Petition No. 109/GT/2020, had not allowed this claim of the Petitioner. However, the Commission granted liberty to the Petitioner to file a separate petition for the additional capital expenditure towards the Compressor Enhancement Package with detailed justification and independent third-party inspection. In accordance with liberty granted by the Commission in its order dated 11.1.2022 in Petition No. 109/GT/2022, the Petitioner has filed the present petition.

Submission by the Petitioner

6. The Petitioner has mainly submitted

(a) The Petitioner had set up a gas-based power plant at Palatana utilizing state-of-the-art technology with high-efficiency machines to provide power at a competitive rate to its beneficiary states. The Petitioner had, therefore, selected

high-efficiency 9FA gas turbines through a global open tender and awarded the EPC contract to BHEL in 2008.

(b) In the year 2009, the Dabhol power plant (RGPPL), having 6 nos. of 9FA gas turbines reported the failure of several 9FA gas turbines. The primary reason was held to be attributable to the failure of compressor blades.

(c) In the year 2012, GE approached OTPC suggesting the implementation of Compressor Enhancement Package (CEP) – 4 for certain reasons, namely (i) Global failures of compressor blades had been analysed by their R&D team, and GE had developed various measures for its mitigation, and (ii) implementation of CEP-4 would mitigate reasons for the failure of compressor blades of gas turbines, including those at Dabhol.

(d) In order to prevent the increase in capital cost of the project and to keep the tariff competitive, the Petitioner deferred the implementation of CEP-4 by regularly monitoring the health of the compressor blades of both gas turbines. The Petitioner deemed it prudent to see the performance of new machines over a period of time rather than undertaking additional expenses in order to protect the interest of the Procurers.

(e) During the Boroscopic inspection at Palatana in the year 2017, some dents on the blades of the compressor of the gas turbine were observed. It was decided to grind the dents to maintain the aerodynamic profile to the extent feasible and increase monitoring of the Units.

(f) In the year 2017, one of the 9FA gas turbines of the Pragati Power Plant at Bawana, Delhi, reported a similar failure in the compressor section. After this failure, Pragati decided to implement CEP-4.

(g) In the year 2017, a Boroscopic inspection of compressors was done at Palatana, which reported a substantial increase in dents, rubbing, accumulation of

dust, etc., in different sections of the compressor of gas turbines. GE recommended the implementation of CEP-4. Considering the enhanced risk, it was decided to implement temporary measures like blending of blades, etc., to remove the dents/rubbing marks, etc., to the extent feasible and evaluate various options of Compressors Enhancements available for implementation.

(h) The condition of compressors seen during the Boroscopic inspection in 2019 highlighted the need for the implementation of CEP-4. In the meanwhile, GE continued to press for implementation of CEP-4.

(i) An internal committee was constituted to evaluate the condition of compressors and to finalize the need for and extent of implementation. The Committee, in its report, recommended the implementation of CEP-4. It was decided not to opt for the CEP-5 because it would have required sending the rotor to OEM's works in Singapore / China, necessitating the shutdown of each Unit for a period not less than 6-8 months.

(j) On 31.7.2020, the Board of Directors of OTPC passed a Resolution to amend the long-term comprehensive maintenance contract for the supply and implementation of Compressor Enhancement Package-4 in the two gas turbines to the OEM- GE.

(k) Failures of compressors of gas turbines of Dabhol and Bawana power plant in India and also across the global fleet of GE establishes the inherent defect in the machine requiring its upgradation for reliable and safe operations of the Power plant.

(l) The actual operation of the 9FA machines needs constant upkeep to maintain the reliability and availability of the plant. As a prudent plant operator, the Petitioner tries to take all the preventive measures to ensure high plant availability and invests in technology upgrades in the best interest of its beneficiaries. Non-

implementation of such preventive technology upgrades could lead to plant failures and power crises for the beneficiary States.

(m) The Petitioner had also submitted the above details in its Tariff Petition No. 109/GT/2020, that considering the visible dents in blades during the Boroscopic inspection, the Petitioner had decided to install the Compressor Enhancement Package. The decision was based on the recommendation of the review committee and similar instances being observed in other plants using advanced-class machines.

(n) In response to the specific query raised by the Commission in its Record of Proceedings dated 17.3.2021 in Petition 109/GT/2020, the Petitioner had submitted the desired Management Certificate, Recommendations of the Executive Committee, and details from the OEM supplier regarding the installation of Compressor Enhancement Package. The Petitioner had also submitted the minutes of the 171st OCC Meeting of NERPC wherein the Petitioner had presented the details of the additional capitalization items in front of the beneficiaries and the forum had decided that the beneficiaries may submit their comments before the Commission.

(o) The location of the OTPC Plant is in the remote North-East location of the country, Tripura. The remote location of the OTPC Plant has geographical constraints, which lead to delays in the supply of critical equipment/spares and delays in repair and maintenance work. Significant challenges are faced by the Petitioner in seeking approvals, transportation of equipment to repair workshops and such activities consume more time than the actual rectification works. Being a single project company, the Petitioner cannot afford to take such risks and has to invest in technology upgrades to keep the plant running and provide reliable power to its beneficiary states.

(p) On account of the fact that the OTPC Plant is situated in the remote North Eastern State of Tripura, there are several geographical constraints faced by the OTPC team in terms of, inter alia, repairing machines and procurement of damaged parts at short notice. The geographical constraints are beyond the control of the Petitioner, and unforeseen/unpredictable events may occur at any time, causing technological and machine failures. Thus, the Petitioner, acting as a prudent operator is required to necessarily invest in technological advancements that can help in early identification of the issues and accordingly prevent the machine failures through preventive maintenance. The Compressor Enhancement Package has, therefore, been installed by the Petitioner not due to obsolescence of technology but as a preventive technology upgrade to maintain the high reliability and availability of the plant.

(q) On account of the problems arising in the 9FA machines, the power stations have accordingly adopted mitigation measures to avoid the same. For instance, in 2017, Bawana Gas Power Plant installed Compressor Enhancement Packages in two of its gas turbines to avoid such failures. Such packages have also been installed as default factory equipment in the latest machines supplied to the Lanco Kondapalli project, GMR Vemagiri project, and Reliance Samalkot Project.

(r) As per the Petitioner's assessment of its compressor at OTPC Plant, there were dents on several blades of three rows, which were observed in the Borescope inspection. Furthermore, some deposits had been observed on various downstream blades of the rotor & stator. This could lead to collateral damages to other compressor blades, turbine buckets/nozzles, etc. The Petitioner had ground the blades to minimize damages since rotor repair at the site is not feasible. However, the operations cannot be sustained for a longer period and are likely to result in a major outage of the OTPC Plant.

(r) The overall expenditure on the installation of the Compressor Enhancement Package is Rs 4,380.64 lakh which has been undertaken in a phased manner, i.e., during FY 2020-21 to FY 2022-23. The implementation of the CEM package is likely to provide various benefits, namely, improved damage tolerance, robustness, durability, and longevity; reduced stresses; moved natural frequencies for vibratory margins; improved loading & durability on the forward stage stator rings and aft stage stator vanes; increased reliability; and early warning of problem.

(s) The Compressor of the gas turbine is one of the critical components of the gas turbine, and GE has been proposing the installation of the compressor enhancement package since 2012. By letter dated 17.3.2017, GE had strongly recommended the implementation of a compressor enhancement package, citing various vulnerabilities observed during a Boroscopic inspection. However, considering the huge cost involved in the implementation of the Compressor Enhancement Package, the Petitioner had deferred implementation by performing various testing and periodic condition assessments.

(t) The Petitioner provides clean thermal power to the North East beneficiary States at one of the most competitive rates. Even after including the additional capital expenditure, the Petitioner shall continue to be one of the most economical and efficient thermal power sources in the NE region. The tariff details of some other thermal projects providing ancillary services in NER is provided below for kind reference and comparison:

Project	Capacity (MW)	Fixed cost (Rs/kWh)	Variable cost (Rs/kWh)
Bongaigaon TPP	750	2.40	3.51
AGBPP-Kathalguri	291	2.06	6.07
AGTPP-Agartala	135	1.87	5.75
OTPC Palatana	726	1.40	1.95

(u) Considering that (i) Gas turbines have now been in operation for more than seven years (Unit-I) & six years (Unit-II), (ii) the Risk of failure involved in further delaying the implementation is reasonably high, and (iii)Cost of the breakdown of the gas turbine, due to the failure of the compressor requiring 6-8 months of repair time, would be very high; it was considered best to undertake the associated works.

(v) GE had offered a significantly reduced price (price excluding taxes & duties offered for two machines in 2012 was USD 13.93 million, which has been reduced to USD 4.6 million) for the compressor enhancement package.

(w) Considering the risk involved in operating the gas turbines without implementing the Compressor Enhancement Package and significantly reducing the price offered, the Executive Committee, in its meeting dated 16.5.2020, also recommended awarding the contract for supply and implementation of Compressor Enhancement Package-4 in two gas turbines for a total price of USD 4.6 Million CIF Port in India (excluding applicable taxes & duties and freight in India).

(x) In terms of the Commission`s direction dated 11.1.2022, the Petitioner, on 1.7.2022, had undertaken an independent third-party inspection for the Compressor Enhancement Package by Fichtner India. The Petitioner had engaged the services of Fichtner India as an Independent Technical Expert for independent third-party inspection through a limited tender process for a fair price discovery from reputed organizations providing such services.

(y) In regard to the observations made by the Commission in its Order dated 11.1.2022 in Petition No. 109/GT/2020, the Petitioner has submitted that the failure of gas turbine compressors was on account of a global fleet-related defect.

Accordingly, GE's proposal for the installation of CEP-4 was undertaken by OTPC as a measure of necessary caution against possible outages.

(z) In view of the above submissions, the Petitioner requested the Commission to exercise its "Power to Relax" under Regulations 26 read with Regulations 76 & 77 of the Tariff Regulations, 2019 and Regulations 111, 112, and 113 of the Conduct of Business Regulations and allow these expenses.

Hearing dated 23.8.2023

7. The Petition was heard and 'admitted' by the Commission on 23.8.2023, and notice was issued. No reply has been received from the Respondents despite notice.

Hearing dated 22.7.2024

8. During the course of the hearing, the learned counsel for the Petitioner made oral submissions and mentioned that the Respondents had not filed a reply and requested that the order be reserved.

9. Vide Record of Proceedings for the hearing dated 22.7.2024, the Commission granted a final opportunity to the Respondents to file a reply in the matter. The Petitioner was directed to file the following additional information:

(a) The details of the complete Compressor enhancement package, whether the asset has been replaced or modified.
(b) The reason for continuing with the existing system, i.e., compressor blades of the 9FA gas turbine, given the fact that OEM (GE) has also recommended the same during 2012, i.e., the commissioning period.
(c) To furnish Form 9B, along with the decapitalization value of the replaced asset, as part of the compressor enhancement package.

10. The Petitioner, vide affidavit dated 9.8.2024, filed the information as called for.

Hearing dated 27.9.2024

11. During the course of the hearing, the learned counsel for the Petitioner stated that the Petitioner had submitted the additional information called for by the Commission and submitted that no reply had been received from the Respondents and requested that the order in the petition be reserved. After hearing the matter, the Commission reserved its order in the Petition.

Analysis and Decision

12. We considered the submissions of the Petitioner and perused the documents available on the record. The Commission, vide order dated 11.1.2022 in Petition No. 109/GT/2020, granted liberty to the Petitioner to file a separate petition for the additional capital expenditure towards the Compressor Enhancement Package with detailed justification and independent third-party inspection. The relevant extract of the order dated 11.1.2022 is extracted and reproduced as under:

> ***"J. Compressor Enhancement Package***
>
> *41. The Petitioner has claimed additional capital expenditure of Rs.4380.64 lakh towards Compressor Enhancement Package during 2020-21, 2021-22 and 2023-24 (i.e.Rs.374.22 lakh in 2020-21, Rs.2003.21 lakh during 2021-22 and Rs.2003.21 lakh during 2023-24). In justification of the same, the Petitioner has submitted that it has installed 9FA machines at the generating station and in Boroscopic inspection, some dents were observed on several blades of three rows. Furthermore, some deposits were also observed on various downstream blades of the rotor and stator which may lead to collateral damages to other compressor blades, turbines buckets/ nozzles etc. The Petitioner has also submitted that currently, it has grinded the blades to minimize damages, since rotor repair at site is not feasible and the operations cannot be sustained for a longer period and may result in a major outage of the generating station. Therefore, in order to maintain reliable supply from the generating station with such geographical constraints, the Petitioner has planned to install the compressor enhancement package to avoid any such failures in future.*
>
> *42. The Respondent, APDCL has submitted that considering the huge cost involved, a third-party inspection may be done to ascertain the necessity of additional capital expenditure and has requested to allow the expenditure only after prudence check.*
>
> *43. The Commission vide ROP of the hearing dated 17.3.2021 directed the Petitioner to provide management certificate, rationale and technical studies towards requirement of proposed works. In response, the Petitioner has furnished the letter dated 17.3.2017 from GE (the OEM) in which the OEM has recommended that during the Boroscopic inspection, they have found impact*

damages, edge damages, rubs on rotor, Tip discoloration, deposits on blade, water leakage from inlet plenum base joint, black dust on the floor of inlet plenum and IGV covered with black powder etc. which could lead to unplanned compressor outages which can be improved by implementing enhanced package for compressor along with installation of blade health monitoring system.

44. The matter has been considered. It is observed that the Petitioner has claimed projected additional capital expenditure on the basis of OEM (M/s GE) proposal dated 10.5.2012 for supply of Flared 9FA.03 Enhanced Compressor Package 4 and BHM System, which was available with the Petitioner even prior to COD of the generating station. Further, from the documentary proof (report) submitted (email dated 17.3.2021 from GE), observations like impact damages, edge damages, rubs on rotor, Tip discoloration, deposits on blades, water leakage from inlet plenum base joint, black dust found on floor of inlet plenum and IGV covered with black colour powder, were clearly noted by the OEM, which were mainly due to machine running in increased risk environment. It is also observed that the proposal from GE does not mention any obsolescence of technology, but has included new items, which are beyond the original scope of work. In view of the above discussion, the projected additional capital expenditure claimed by the Petitioner is not allowed. However, the Petitioner is granted liberty to file a separate petition for the additional capital expenditure towards Compressor Enhancement Package with full justification and independent third-party inspection".

13. In terms of the liberty granted by the Commission in Petition No. 109/GT/2020, the Petitioner has filed the instant petition after undertaking an independent third-party inspection for the Compressor Enhancement Package. The Petitioner had engaged the services of Fichtner India as an Independent Technical Expert for independent third-party inspection through a limited tender process for fair price discovery from the reputed organizations providing such service.

14. The Independent Technical Expert is of the considered opinion that "the issues experienced in the gas turbine compressors of OTPC in the year 2017 were largely fleet-related. This is established by the fact that similar issues were reported across the fleet in different geographies during the period 2014 to 2018. Some of the issues date back to as early as 2008. GE has acknowledged the prevalence of such issues and has devised upgrade packages to mitigate the risk of catastrophic damage. One such upgrade package, viz., ECP4, was offered to OTPC in May 2012. However, OTPC had not

implemented the upgrade immediately mainly to avoid an escalation in the project Capex and the electricity tariff. It was decided by OTPC to closely monitor the units under operation and decide on the implementation of the upgrade at a suitable time. In the opinion of the expert, this was a prudent approach of OTPC."

15. The Independent Technical Expert has opined as under:

> *"By opting for implementation of the ECP4 upgrade, OTPC has mitigated the risk of major failures in the compressor. The solution is proven since it has already been implemented on nearly 80% of the total fleet in India. Further, the fleet leader has already completed over 85,000 hours of operation while the total fleet hours with the upgrade has exceeded 4.0 million hours.*
>
> *In conclusion, the decision to implement the proven ECP4 upgrade is considered timely and necessary to improve the reliability of the gas turbine compressors for the remaining life of the plant."*

16. The vide ROP for the hearing dated 22.7.2024, the Petitioner was directed to file the following additional information:

> *(a) The details of the complete Compressor enhancement package, whether the asset has been replaced or modified.*
> *(b) The reason for continuing with the existing system, i.e., compressor blades of the 9FA gas turbine, given the fact that OEM (GE) has also recommended the same during 2012, i.e., the commissioning period.*
>
> *(c) To furnish Form 9B, along with the decapitalization value of the replaced asset, as part of the compressor enhancement package.*

17. In response, the Petitioner, vide affidavit dated 9.8.2024, has mainly submitted as under:

> ***(a)*** *The compressor of the Gas Turbine has been modified. Several components of the existing system have been replaced with new components. The details of modifications/replacement had been attached.*
>
> ***(b)*** *Petitioner had awarded the contract for the Gas Turbines for Palatana Generating Station in the year - 2008. It was only in 2012 that GE recommended installation of a Compressor Enhancement Package, before the machines were put to use at the Generation Station. By 2012, the Petitioner was not in a position to switch the 9FA machines considering the scheduled COD of the project and the consequential time over run. However, considering that the machines were new and significant costs*

would be involved in implementation of Compressor Enhancement Package (GE had offered price of USD 13.93 Million in 2012 for Compressor Enhancement Package of 2 gas turbines) and the same would have significant impact on the capital cost of the plant at that time. Therefore, the Petitioner decided to defer the implementation of the Compressor Enhancement Package, while periodically performing tests and condition assessment of the health of the Gas Turbine.

During the periodic maintenance in 2017, for the first-time certain vulnerabilities were observed in the compressor of Gas Turbine at the Palatana Generating Substation. GE had once again recommended for implementation of Compressor Enhancement Package. Considering the increased cost and risks associated with implementing the Compressor Enhancement Package, the Petitioner decided to closely monitor the condition of compressor and in the meanwhile took temporary measures such as blending of blades etc.

During the 2019 inspection, it was found that the condition of the compressor had deteriorated further. Therefore, a senior level committee comprising representatives from OTPC and ONGC was constituted to review the requirement of Compressor Enhancement Package-4 ('CEP-4') considering the following:

1. *The gas turbines were in operation for more than seven years (Unit-I) and more than six years (Unit-II);*
2. *The risk of failure involved in further delaying the implementation of CEP-4 was reasonably high; and*
3. *The cost of breakdown of gas turbine, due to failure of compressor requiring at least 6-8 months of repair time, would be very high.*

Further, the Gas Turbine including compressor are proprietary in nature and any enhancement package of these parts needed to be sourced from OEM (GE). Accordingly, prices were extensively negotiated with GE after which GE had offered significantly reduced price of USD 4.6 million (excluding taxes & duties). After obtaining the necessary approvals for implementing CEP-4 and its price, the contract for supply and implementation of CEP-4 was awarded to GE to be implemented in 2021 for Unit-1 and in 2022 for Unit-2.

The Petitioners has also filed the details of Compressor Enhancement Package - 4 being implemented by other gas stations and its necessity in light of failure of compressors at some plants. In terms of the directions of this Hon'ble Commission, the Petitioner has also submitted a report from an Independent Technical Expert (Fitchner India).

In view of the above, it is submitted that the implementation of CEP-4 was deferred only to protect the interest of the consumers so as to avoid its impact on tariff for as long as possible. Consequent to the prudent action undertaken by the Petitioner, the servicing of the cost associated with the CEP-4 was deferred till the same was actually incurred. In light of the same, it is prayed that this Hon'ble Commission may exercise its Power to Relax under Regulations 26 as read with Regulation 76 & 77 of the Tariff Regulations, 2019 and Regulation 111, 112 and 113 of the Conduct of Business Regulations, 1999 to allow these expenses to the Petitioner.

(c) In response to Point (c), *the Petitioner has submitted the Form 9B along with the decapitalization value of the replaced asset.*

18. It is observed that the compressor of the gas turbine is one of the critical components of the gas turbine, and the global failures of the existing compressor blades have highlighted the urgent need to implement a Compressor Enhancement Package. The implementation of the CEP-4 package aims to significantly improve the reliability and availability of the station. It's crucial to address this issue promptly because the risks associated with operating the gas turbines without the enhancement package could lead to catastrophic damage. Therefore, implementing the package is essential to enhance the reliability of the gas turbine compressors for the remaining operational lifespan of the plant.

19. We are of the considered view that the implementation of the Compressor Enhancement Package-4 (CEP-4) was necessary as the problems seen in OTPC's gas turbine compressors in 2017 were mostly related to the entire fleet. Similar issues were reported across the fleet in different generating stations across the country, as evidenced by the report submitted by the Independent Technical Expert. Further, the implementation of the CEP-4 package would mitigate the risk of the failure of the compressor, and delay in the implementation of CEP-4 would result in unreasonably high costs because the breakdown of the gas turbine due to failure of the compressor would at least require 6-8 months of repair time which would lead to time delays and cost overrun.

20. The Petitioner has claimed the additional expenditure for the compressor Enhancement Package under Regulation 26 and Regulation 76 and 77 of the Tariff Regulations, 2019. Regulation 26 (1) of 2019, Tariff Regulation, provides for capital expenditure beyond the original scope.

"26. Additional Capitalisation beyond the original scope

(1) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts beyond the original scope, may be admitted by the Commission, subject to prudence check:

(a) Liabilities to meet award of arbitration or for compliance of order or directions of any statutory authority, or order or decree of any court of law;

(b) Change in law or compliance of any existing law;

(c) Force Majeure events;

(d) Need for higher security and safety of the plant as advised or directed by appropriate Indian Government Instrumentality or statutory authorities responsible for national or internal security;

(e) Deferred works relating to ash pond or ash handling system in additional to

the original scope of work, on case to case basis:

Provided also that if any expenditure has been claimed under Renovation and Modernisation (R&M) or repairs and maintenance under O&M expenses, the same shall not be claimed under this Regulation;

(f) Usage of water from sewage treatment plant in thermal generating station."

21. Further, Regulation 26(2) of the Tariff Regulation, 2019 states that:

"(2) In case of de-capitalisation of assets of a generating company or the transmission licensee, as the case may be, the original cost of such asset as on the date of decapitalisation shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place with corresponding adjustments in cumulative depreciation and cumulative repayment of loan, duly taking into consideration the year in which it was capitalised."

22. The Petitioner has claimed the said expenditure under Section 79 of the Electricity Act, 2003, read with Regulation 26 and Regulations 76 and 77 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019. Regulation 26 provides for the capital expenditure in respect of the existing generating station or the transmission system, including the communication system incurred or projected to be incurred beyond the original scope, may be admitted by the Commission, subject to prudence check.

23. With regard to the Commission's Power to Relax and Power to remove difficulty under Regulations 76 and 77 of the 2019 Tariff Regulations, we observe that the power of relaxation is exercisable in exceptional circumstances on a case-to-case basis. The power of relaxation cannot be exercised in a manner so as to nullify the relevant provisions of the 2019 Tariff Regulations and render them otiose or completely redundant. Regulations 76 and 77 of the 2019 Tariff Regulations provide as follows:

> ***"76. Power to Relax****: The Commission, for reasons to be recorded in writing, may relax any of the provisions of these regulations on its own motion on an application made before it by an interested person.*
>
> ***77. Power to Remove Difficulties:*** *If any difficulty arises in giving effect to these regulations, the Commission may, by order, make such provisions, not inconsistent with the provisions of the Act or provisions of other regulations specified by the Commission, as may appear to be necessary for removing the difficulty in giving effect to the objectives of these regulations."*

24. In our considered view, the additional capital expenditure claimed by the Petitioner for implementing the Compressor Enhancement Package-4 (CEP-4) was necessary, as the risks associated with operating the gas turbines without this enhancement package could lead to severe damage. We have taken note of the submission of the Petitioner that it has claimed the said expenditure under Regulation 26, which provides for the expenditure beyond the original scope of work. However, this modification or replacement work on the existing compressor of the gas turbine can be considered under Regulation 25 of the 2019 Tariff Regulations. Regulation 25 of the 2019 Tariff Regulations provides for the additional capital expenditure within the original scope of work and after the cut-off date of the generating station. Further, regulation 25(2)(c) provides for the replacement of such assets or equipment, which is necessary on account of the obsolescence of technology. But in the instant case, the Petitioner is carrying out modification in the compressor not due to obsolescence of technology but as a preventive technology upgrade to maintain high reliability and availability of the plant. Accordingly,

we, in the exercise of the powers conferred under Regulation 77 of the 2019 Tariff Regulations, relax the provisions of Regulation 25(2)(c) of the 2019 Tariff Regulations and approve the claim for additional capital expenditure for the Compressor Enhancement Package. However, considering the fact that several components of the existing system have been replaced with new components and the Petitioner has also submitted the details of modification/replacement along with the value of decapitalization of the replaced asset, we allow the additional capital expenditure towards compressor enhancement package after excluding the decapitalization amount. The Petitioner has submitted that the total decapitalization value for the Compressor enhancement package for Unit-1 during the year 2021-22 is Rs 896.24 lakh, which was for the asset part of the Capital cost. Further, the total decapitalization value for the Compressor enhancement package for Unit-2 during the year 2022-23 is Rs 1029.29 lakh, which was for the asset part of the Capital cost.

25. In light of the above, we approve the additional capital expenditure for the Compressor Enhancement Package of Rs 2455.11 lakh (excluding the total decapitalization amount of Rs. 1925.53 lakh during 2021-22 and 2022-23) to enhance the reliability of the generating station.

26. Petition No. 163/MP/2023 is disposed of in terms of the above discussions and findings.

Sd/-	Sd/-	Sd/-
(Harish Dudani)	**(Ramesh Babu V.)**	**(Jishnu Barua)**
Member	**Member**	**Chairperson**