

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 90/MP/2011

**Coram: Dr. Pramod Deo, Chairperson
Shri S.Jayaraman, Member
Shri V.S.Verma, Member
Shri M.Deena Dayalan, Member**

Date of Hearing: 8.9.2011

Date of Order: 28.11.2011

In the matter of:

Miscellaneous Petition under Regulation 24 of CERC (Conduct of Business) Regulations 1999, seeking approval for procurement of one number ERS- Sub-station for Eastern Region beneficiaries.

And

In the matter of:

Power Grid Corporation of India Limited, Gurgaon

.....**Petitioner**

Vs

1. Bihar State Electricity Board, Patna
2. West Bengal State Electricity Board, Calcutta
3. Grid Corporation of Orissa Ltd. Bhubaneswar
4. Damodar Valley Corporation, Calcutta
5. Power Department, Govt. of Sikkim, Gangtok
6. Jharkhand State Electricity Board, Ranchi

..... **Respondents**

The following were present:

1. Shri M M Mondal, PGCIL
2. Shri Prashant Sharma, Power Grid
3. Shri Danie R Selvaraju, Power Grid

ORDER

The petitioner has filed this petition seeking approval for procurement of one number of 315 MVA at 400 kV level ERS sub-station for eastern region beneficiaries at



an estimated cost of ₹ 11910 lakh excluding freight, insurance, taxes and duties. The petitioner has also made the following prayers:

- (a) Allow yearly transmission charges of the above said ERS sub-station to be apportioned among the beneficiaries of the Eastern Region as decided by the ERPC
- (b) Allow recovery of yearly transmission charges, O&M and other charges in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, (hereinafter referred to as “the 2009 regulations”)
- (c) Pass such other relief as Hon’ble Commission deems fit and appropriate under the circumstances of the case and in the interest of justice.

2. Briefly, the background of the case is as follows:

(a) Prior to the filing of the instant petition, the petitioner had filed a miscellaneous petition No. 88/2010 seeking Regulatory Approval for procurement of two nos. mobile 400/220 kV sub-station for Northern Region beneficiaries and determination of tariff in term of the 2009 regulations. During the hearing of this petition on 13.5.2010, the issue of funding of the project came up and following alternatives were deliberated:

- (i) Recovery of the expenditure towards procurement in accordance with the 2009 regulations
- (ii) Procurement funded through surplus UI Pool
- (iii) Procurement as part of a large project



(b) Commission directed the petitioner to come up with a concrete proposal after discussion in the RPC. On the request by the petitioner it was allowed to file an amended petition.

(c) Subsequently, the petitioner filed a petition 13/2011 for procurement of two numbers ERS sub-station in NER. During hearing of this petition on 26.4.2010, the Commission noted that the petition was filed for procurement of the proposed ERS sub- stations with funding from the surplus UI pool account of the Power System Development Fund (PSDF). The Commission observed that, the petition could not be admitted in the light of the separate procedure available for funding from the Power System Development Fund.

(d) The petitioner requested that since the proposed ERS sub- station would be of vital importance for the transmission system especially for restoration of the sub-station in emergency conditions in case of natural calamity etc., the Commission may consider the present case for regulatory approval for procurement of the ERS sub-stations. Thereupon, the Commission directed that the petitioner may file the amended petition in this regard.

3. Through the present petition, the petitioner has sought approval for procurement of one number 315 MVA Emergency Restoration System (ERS) sub-station at 400 kV level, for Eastern Region beneficiaries. Briefly, the submission of the petitioner are as follows:



(a) Augmentation of the existing network with means like ERS-sub stations needs to be effected to cater to the quick restoration of EHV substation failure till permanent measures are put in place. Based on the directive of the Commission, the issue of procurement of one number 315 MVA at 400 kV level ERS-sub-station was taken up in the 16th TCC and 16th ERPC meeting held on 17th and 18th December, 2010.

(b) ERPC approved the proposal for procurement of one number ERS sub-station by Powergrid as a part of disaster management for Eastern Region. It was also agreed in the ERPC that yearly transmission charges i.e. ARR would be apportioned to each 400 kV sub-station in Eastern Region.

(c) One number ERS-sub-station envisaged for the Eastern Region is proposed to cater to emergency restoration of sub-station facilities including temporary replacement of 315 MVA at 400 kV level transformer in a short time till permanent arrangement is made. Further, this ERS- sub-station is very useful to take care of short term/ temporary and urgent requirements in the network.

(d) Estimated cost of one number ERS-substation is ₹ 11910 lakh excluding Freight, Insurance, Taxes and Duties. The actual cost however, would be determined based on the competitive bidding process. The cost of the 400 kV ERS sub- station was estimated based on the budgetary offer from the supplier



of the 132 kV ERS sub-station procured by HVPNL. The modality for the determination and recovery of the yearly transmission charges for the capital expenditure on the procurement of ERS sub-station would be in accordance with the 2009 regulations. As per ERPC decision, the ARR would be apportioned to each 400 kV sub-station in Eastern Region.

4. Subsequently, the petitioner, vide its affidavit dated 18.5.2011, submitted that the proposed ERS sub-station can be deployed in the event of any disaster leading to outage of any 400 kV sub-station or its elements like transformers with associated EHV switchgear. It was also submitted that in our country, there is operational experience for the application of ERS sub-station at 132 kV level in Haryana.

5. It was further submitted that the ERS sub-station shall comprise 3x105 MVA, 400/220 kV power transformers, 400 kV and 220 GIS Modules containing lightning arrester, voltage transformers, current transformers, circuit breakers and connection arrangement with bus and transformers. The ERS shall also comprise 2 Nos. 400 kV and 220 kV GIS bays control and protection system, auxiliary power supply and cables. It has also been submitted that the ERS sub-station after taking care of the need of Central sector/ common requirement, could be made available for all the concerned State transmission utilities that are paying the ISTS charges.

6. The petitioner was directed vide the Commission's Record of Proceedings dated 28.7.2011 to submit, *inter alia*, a detailed cost-benefit analysis. In response to the above, the petitioner has clarified vide its reply dated 1.9.2011, that in case of

permanent damage to sub-station due to a natural calamity, the restoration of transformer along with associated bays would normally take 12-13 months. With the proposed ERS sub-station, it has been submitted, the restoration will be possible in 2-3 months which would result in a saving of up to 12 months. While the cost of the ERS substation is ₹ 119 crore, the cost of energy supplied by using this ERS sub-station during 12 months would be ₹ 618 crore. Based on the above, the petitioner has contended that breakeven is possible in 70 days. The petitioner has further submitted that if social cost (5 X Basic Cost) is considered, then breakeven can be achieved in 14 days. The petitioner has also pointed out that apart from monetary saving there are intangible benefits also in form of improved system reliability.

7. Subsequently, the petitioner vide affidavit dated 7.9.2011, submitted the advantages of the proposed ERS sub-station over the spare transformer. It was emphasized that the ERS sub-station can be commissioned in 7-14 days whereas the spare transformer may require 45-60 days. Moreover, while, the ERS sub-station can be used as standalone unit for use as a replacement of complete bay with GIS switchgear and transformer, the spare transformer can be used only if the bay equipments of similar ratings are available. For ERS-sub-station no foundation is required whereas the spare transformer may require appropriate foundation to be constructed. In addition to this, it was submitted that the ERS sub-station can be used as additional separate bay for load sharing/load augmentation.

8. From the submissions of the petitioner, it is observed that the proposed ERS sub-station would be useful for the power system in more than one ways such as for



restoration of the system in case the bay equipments and transformer are damaged or for augmentation of the system on urgent basis by providing transformer along with associated bays. Further, importance of reliability cannot be overlooked, in the extremely complex and expanding Indian power system. We have no doubt that the proposed ERS sub-station will enhance the reliability of the power system considerably. We have also an example of use of ERS sub-station at 132 kV and 66 kV level by HVPNL. Accordingly, we have no hesitation in holding that procurement of the proposed ERS sub-station on experimental basis for one region, at present, is justified.

9. As regards the request by the petitioner for approval for procurement of the proposed ERS sub-station it is observed that the beneficiaries of Eastern Region have already consented for procurement of sub-station. We did not receive objection from any of the beneficiary during the proceedings of the case either. As the beneficiaries have already agreed to the proposal, approval of the Commission is not required for procurement of the sub-station.

10. As regards the decision of ERPC for apportionment of ARR of the proposed ERS sub-station to each 400 kV sub-station, we notice that the same is not implementable under the new transmission charges sharing regime. We are of the opinion that this sub-station may be considered as separate asset without including in PoC charges and the transmission charges would be shared by all the Eastern Regional beneficiaries as per mutual agreement.

11. The petitioner may approach for tariff of ERS sub-station after procurement and issues regarding cost recovery would be decided in accordance with law.

Sd/-
(M.Deena Dayalan)
Member

Sd/-
(V.S.Verma)
Member

Sd/-
(S.Jayaraman)
Member

Sd/-
(Dr. Pramod Deo)
Chairperson

