

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 32/MP/2011

Coram:

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

Date of Hearing: 8.9.2011

Date of Order: 28.12.2011

In the matter of

Miscellaneous petition under Regulation 24,111 & 113 of the CERC (Conduct of Business) Regulations, 1999 for the approval of implementation of Expansion/ Replacement of SCADA/ EMS system for SLDC's in Northern Region by the Petitioner.

Power Grid Corporation of India Limited, New Delhi

.....**Petitioner**

Vs

1. Rajasthan Raja Vidyut Prasaran Nigam Limited, Jaipur
2. Ajmer Vidyut Vitran Nigam Ltd, Jaipur.
3. Jaipur Vidyut Vitran Nigam Ltd, Jaipur.
4. Jodhpur Vidyut Vitran Nigam Ltd, Jaipur.
5. Himachal Pradesh State Electricity Board Shimla
6. Punjab State Electricity Board, Patiala
7. Haryana Power Purchase Centre, Panchkula
8. Power Development Department, Govt. of Jammu & Kashmir, Jammu.
9. Uttar Pradesh Power Corporation Ltd., Lucknow
10. Delhi Transco Ltd, New Delhi
11. BSES Yamuna Power Ltd, New Delhi.
12. BSES Rajdhani Power Ltd, New Delhi.
13. North Delhi Power Ltd, New Delhi.
14. Chandigarh Administration, Chandigarh.
15. Uttarakhand Power Corporation Ltd., Dehradun,
16. North Central Railway, Allahabad.
17. New Delhi Municipal Council, New Delhi
18. Bhakra Beas Management Board, Chandigarh.

-----**Respondents**

The following were present:

Shri A.S. Kushwaha, PGCIL
Shri P.K. Agarwal, NRLDC
Shri Debasis De, NRLDC
Shri Prashant Sharma, PGCIL
Shri M.M. Mondal, PGCIL
Shri Sunil Sethi, HVPNL
Shri R.K. Kaushik, SLDC, HVPNL
Shri V.V. Sharma, NLDC
Shri Sunil Kumar, PGCIL
Shri R.K. Arora, PGCIL

ORDER

This petition has been filed by Power Grid Corporation of India Limited under Regulation 24,111 & 113 of the CERC (Conduct of Business) Regulations, 1999 for the approval of implementation of Expansion/ Replacement of SCADA/ EMS system for SLDC's in Northern Region.

2. The petitioner has submitted that Unified Load Despatch and Communication (ULDC) Schemes were established by the petitioner in close consultation with the constituents on regional basis for providing EMS/SCADA and Communication System for Management of Regional Power Grid. The ULDC Projects were commissioned progressively from July 2002 to February 2006 in Southern, Northern, North-Eastern, Eastern and Western Regions.

3. The petitioner has submitted that in Northern Region (NR), the scheme was implemented by the petitioner in 2002. The Northern Region ULDC scheme, consisting of NRLDC, 8 SLDCS (BBMB, HVPNL, RRVPNL, HPSTCL, PSPTCL, J&K PDD,

UPPTCL and DTI) and 25 Sub-LDCs/CPCC were established. These control centres were commissioned in 2002 under Unified Load Dispatch and Communication (ULDC) scheme and were put to commercial operation in August, 2002. The following elements were included under the NR ULDC scheme:-

- a) Establishment of Supervisory Control and Data Acquisition and Energy Management System (SCADA/EMS) at NRLDC and SLDCs of Northern Region;
- b) Establishment of SCADA system at Sub-LDCs for all the constituents of the region;
- c) Remote Terminal Units (RTUs) at various 400 kV/ 220 kV / 132 kV sub-stations and generating stations; and
- d) Associated communication system based on fibre optic, microwave and PLCC for all the constituents and Central Sector.

4. On the basis of the recommendations of the Pradhan Committee and the Satnam Singh Task Force constituted by Ministry of Power, the entire SLDC portion and associated communication system of the ULDC Scheme are to be retained with the petitioner consequent to the constitution of Power System Operation Corporation (POSOCO). However, the responsibility for maintenance of the SCADA/EMS System for the SLDCs lies with the respective SLDC for their portion. The petitioner has further submitted that it has filed Petition No. 68/2010 for fixation of tariff norms for recovery of cost of the assets (Communication System and SLDC System) to be retained/to be installed by the petitioner after formation of POSOCO during the period of 2009-14.

5. The petitioner has submitted that subsequent to commissioning of ULDC Scheme, the power system has expanded at considerable pace. The constituents of the Northern Region have felt the need for expansion of ULDC system by inclusion of more components of the Grid for monitoring. The number of Remote Terminal Units integrated under the ULDC project was only 355 Nos. out of which 285 Nos. were commissioned under ULDC scheme. The balance 21 Nos. and 49 Nos. RTUs were existing RTUs of Punjab and Rajasthan system respectively. Since then additional 53 Nos. RTUs/Substation Automation System has been integrated with the system. NRPC and ULDC Scheme Monitoring Group committee of NRPC are repeatedly following with the constituents for non-availability of the telemetry. Further, these RTU numbers are likely to be doubled in the next four to five years.

6. The petitioner has submitted that the constituents of the Northern Region had agreed in the 18th NRPC meeting held on 27.11.2010 for getting the scheme executed through the petitioner. It was also agreed that the petitioner has to fund the scheme and obtain regulatory approval from the Commission to recover the investment made through tariff as in case of ULDC Phase-1. Taking into consideration the overall economy in the cost for the entire scheme and to take care of interest of grid operation and smooth technical implementation, the petitioner has consented to take up the upgradation of ULDC Scheme of the State portion.

7. The petitioner has submitted that the need for expansion of ULDC scheme of Northern Region and its implementation methodology were discussed by the constituents in various forums. Finally, after deliberations during 8th NRPC meeting on 25.4.2008 it was agreed in principle that the expansion of ULDC scheme shall be taken

up by the constituents independently. It was also decided that the communication parameters, minimum standards and time frame would be finalized. As a follow up action, NRPC constituted a Sub-Committee which submitted its report on 2.12.2009. The Sub-Committee in its report had recommended that in order to maintain the uniformity of the interfaces and compatibility for successful data exchange in various hierarchies the entity like the petitioner, which has the experience of implementing the LDC schemes in the country, should be involved as turnkey implementer/Consultant/review consultant. In the 16th NRPC meeting held on 16.4.2010 it was decided to appoint the petitioner as turnkey implementer/Main or review consultant for each State as may be decided. In the 18th NRPC meeting held on 27.11.2010, NRPC members agreed with the recommendations of Technical Co-ordination Committee for execution of the scheme through the petitioner. It was also suggested that the petitioner can fund the scheme and get the regulatory approval from the Commission and the investment made by petitioner can be recovered through tariff as in case of ULDC Phase-I. The petitioner has however submitted that all states, except Uttar Pradesh and Haryana, have requested the Powergrid to implement and fund the expansion of SCADA/EMS system of SLDC in Northern Region and recover the cost of tariff. Subsequently, Uttar Pradesh had given its consent for implementation of project through the petitioner. Accordingly, the petitioner has approached the Commission through the present petition for approval of the following:-

- a) Implementation of the expansion/replacement of SCADA/EMS system for SLDC in Northern Region through the petitioner.

b) Recovery of the investment in respect of SLDC in accordance with the terms and conditions as may be decided by the Commission in Petition No. 68/2010.

8. The petitioner has further submitted that the expansion of SCADA/EMS system in other regions is being discussed in the respective RPC forums. The petitioner has prayed for approval of the implementation of the expansion/replacement of SCADA/EMS system for SLDC in other regions through the petitioner, subject to approval of the respective RPCs.

9. Replies to the petition have been filed by Haryana Vidyut Prasaran Nigam Ltd. (HVPNL) and Bhakra Beas Management Board (BBMB).

10. The Haryana Vidyut Prasaran Nigam Limited (HVPNL), Respondent No.7, vide its affidavit dated 30.8.2011, has submitted that the petitioner is also implementing the scheme for NRLDC (POSOCO) for expansion of SCADA/EMS System independently. The implementation of SCADA/EMS System expansion of NRLDC has not been included under the proposed scheme, which may have integration related issues in case NRLDC Project is implemented by some different vendor. The petitioner should ensure integration of two different systems as well as the interoperability issues in the long run in such an eventuality.

11. The Bhakra Beas Management Board (BBMB), Respondent No.18, in its reply vide affidavit dated 13.9.2011, raised the issue of integration of RLDC scheme with SLDCs. It has been submitted that the ULDC Scheme Phase-I was implemented as a single scheme for all utilities of Northern Region and there was absolutely no problem in respect of data exchange during the past over 10 years. The instant petition covers the

proposal to establish State Load Despatch Centres (SLDCs) and the tender for Northern Regional Load Despatch Centre (NRLDC) has been floated separately. This is in contravention to the decision taken in the 18th NRPC Meeting, wherein it was decided that the petitioner would implement the scheme for all States as a single scheme in unified manner. The respondent has voiced its apprehension for having two different vendors for SLDCs and RLDC as there may be problems in seamless integration of real data between SLDCs and RLDC, which can have serious repercussions in system operation. It has been submitted that the operation and maintenance of system would also become complex and difficult to propagate the changes in power system to the database models of various connected entities. It has been prayed that the petitioner and NRLDC be directed to implement the project as a unified scheme to ensure seamless data integration in the overall interest of system operation.

12. The petitioner in its rejoinder to the reply filed by BBMB, vide affidavit dated 29.9.2011, has submitted that the petitioner had finalized the specifications for SLDCs of Northern Region as well as for NRLDC (POSOCO) and shall also be involved in the engineering and implementation of both the projects. Following projects had been executed by integration of different make SCADA/EMS systems:-

- a) GE make system of RLDCs integrated with AREVA make NLDC system;
- b) SIEMENS make Maharashtra SLDC system integrated with GE make WRLDC system; and
- c) ABB make KPTCL SLDC system integrated with GE make SRLDC system.

That in view of the above experience, there would not be any problem in integration of different make SCADA/EMS system. It has also been submitted that the integration of SCADA/EMS system of SLDCs with NRLDC would be ensured.

13. Matter was heard on 8.9.2011. During the hearing, the representative of HVPNL confirmed that the ULDC Scheme for Haryana would also be implemented through the petitioner. However, the representative of BBMB had expressed apprehension regarding the integration and compatibility of the EMS/SCADA scheme for RLDCs with that of SLDCs under the ULDCs scheme in the Northern Region. The representative of the petitioner clarified that there would not be any integration problem and compatibility would be ensured by the petitioner.

14. We have considered the submissions of the petitioner and the respondents. The petitioner has sought regulatory approval for expansion/replacement of SCADA/EMS system for the Northern Region and in principle approval for other regions. Though ULDC for State portion are meant for system operation of the SLDC of respective States and would come under the jurisdiction of the respective State Commission, in the present case the constituents have agreed that the ULDC schemes for the entire region should be implemented by the petitioner in an integrated manner for achieving system compatibility. The constituents have also agreed that the scheme may be executed by the petitioner through its own funding and cost of the same may be recovered by the petitioner from the constituent States. Keeping in view the fact that the scheme shall be implemented by the petitioner for all the constituent States of the Northern Region in an integrated manner and the proposed SCADA/EMS system will be used for facilitating

inter-State transmission of electricity, the Commission can exercise its jurisdiction for determination of tariff.

15. The next question to be considered is the request of the petitioner for regulatory approval for implementation of the scheme by the petitioner. We have considered this issue of regulatory approval for fibre optic system of the petitioner in our order dated 8.12.2011 in Petition no. 68/2010 where we have held that regulatory approval is not considered necessary when the constituent States have agreed for implementation of the project. The relevant portion of the order dated 8.12.2011 is extracted as under:-

"21. We have considered the submission of the petitioner and the respondents. We are of the view that replacement of microwave links with fibre optic links should be implemented as agreed by the beneficiaries to ensure safe and reliable operation of the power system. Moreover, the petitioner has submitted that surrender of the microwave frequencies would save substantial cost and the fibre optic system would be beneficial in the long run as the fibre optic communication network is required for implementation of new technologies like Wide Area Measurement System (WAMS), Special Protection Schemes (SPS) etc. in view of fast development and complexity of the power system in the country. As regards the regulatory approval, we are of the view that since the project has been agreed to be implemented by the constituents of each of the regions, regulatory approval is not considered necessary. The petitioner is granted liberty to approach the Commission for determination of tariff for the fibre optic network being installed in lieu of microwave links for each of the region separately. As regards the submission of UPPTCL, it is clarified that if the state portion is not being implemented by it separately as proposed earlier, the same shall be implemented by the petitioner and UPPTCL would be required to share the tariff in proportion to the assets being utilised by it. It is however made clear that the timeline for replacement of the digital microwave by optical fibre should be strictly complied with."

16. In line with above quoted order, we are of the view that there is no need for approval by the Commission for implementation of the expansion/replacement of SCADA/EMS system for SLDCs in Northern Region by the petitioner since all the

beneficiaries have consented for the same. The petitioner is at liberty to proceed with the implementation of the scheme as per the agreement with the beneficiaries at NRPC, since, the project is essential for efficient and smooth power system operation.

17. Regarding approval for implementation of the schemes in other regions, we are of the view that the petitioner may implement the schemes in accordance with agreements with the beneficiaries in the respective Regional Power Committees. Since the technical and expenditure details are not made available, the scheme has not been examined on those aspects. The expenditure made by the petitioner on implementation of the scheme would be considered in tariff, after prudence check, on proper applications filed by the petitioner for determination of tariff.

18. Next issue is integration and compatibility of the SLDC schemes with that of RLDCs, which was raised both by BBMB and HVPNL. We find strength in the submissions of these respondents and accordingly direct the petitioner to ensure that the projects for RLDC and SLDCs in respective region be implemented in an integrated and compatible manner to obviate any operational problem in future. We further direct that the petitioner shall be liable to resolve all problems with regard to implementation and execution of the scheme in consultation with the constituents without any extra implication of cost on the beneficiaries. The petitioner is also directed to implement as far as possible all the schemes in a coordinated manner within the same time-frame to achieve optimization of cost and economies of scale.

19. This order disposes of Petition No.32/2011.

Sd/-

(M. Deena Dayalan)
Member

Sd/-

(V.S. Verma)
Member

Sd/-

(S. Jayaraman)
Member

Sd/-

(Dr. Pramod Deo)
Chairperson