

**ORISSA ELECTRICITY REGULATORY COMMISSION
BIDYUT NIYAMAK BHAWAN
UNIT-VIII, BHUBANESWAR - 751 012

Present : Shri K.C. Badu, Member
 Shri B. K. Misra, Member

Case No. 23/2010

OPTCL	Petitioner
Vrs.		
DoE, GoO	Respondent

In the matter of: **Investment proposal of OPTCL for 18.594 crore to be taken up during 2010-11 for installation of capacitor banks (275MVAR) in 23 nos. existing Grid S/s.**

For Petitioner: Sri J. P. Das, CGM (O&M), OPTCL

Respondent : Sri Thakuna Das, Section Officer, DoE, GoO.

Date of Hearing: 29.04.2010

Date of Order : 20.05.2010

ORDER

1. Sri J.P.Das, CGM (O&M), OPTCL stated that while passing the Order on 06.04.2009 in Case No. 22 of 2009, the Commission has observed that for proper operation of a power system, the production and consumption of reactive power must be balanced. As voltages and reactive power are strongly inter-related, power system voltages can be controlled through the supply and absorption of VARs. Control of reactive power / voltage can be achieved by providing suitable reactor / shunt compensation.
2. At present, the power system of the State has some low voltage pockets, where the voltage profile is not within the statutory limits. Deficiencies of reactive power cause voltage to fall. Reactive power has a profound effect on the security of the power system, as it is required for transmission of active power, control of voltage of the system and normal operation of power system. Reactive power is essential for reliable operation of transmission system. Inadequate reactive power can lead to voltage collapse and this can cause major power outages.
3. He also stated that as the Commission in the aforesaid order has directed OPTCL to come up with a capital expenditure plan for installation of shunt capacitors in 23

nos. of substations (Identified by M/s PRDC- Consultant & submitted by OPTCL through affidavit dated 25.03.09) before the Commission by 15th May, 2009 for necessary approval. Hence, OPTCL came forward with the prayer to allow the proposed investment of Rs.18.594 Crore to be taken up during 2010-11 for installation of capacitor banks (275 MVAR) in 23 nos. existing Grid Sub Stations.

4. Shri Das, on behalf of OPTCL has also further submitted as under :

The transmission licensee is duty bound to make investment to build, maintain and operate an efficient, coordinated and economical intra-State Transmission system. As per the license condition 10 read with Condition 23.1 of OPTCL, prior approval of the Commission is required for cost beyond Rs. 10 crores for making investment in the licensed business.

Also as per the provision laid down in IEGC & OGC, OPTCL as the STU has to keep the voltage profile within $\pm 3\%$ of the rated voltage failing which it will be liable to be penalized. Hence, it is proposed to install Capacitor Banks in some of the existing EHT grid sub-station of OPTCL to provide MVAR compensation for improving the voltage profile. The investment shall be met through capital expenditure programme.

Hence, in the above backdrop & in compliance to the License condition & order dated 06.04.2009 of the Commission, OPTCL has filed this investment proposal for approval towards installation of capacitor banks (275 MVAR) in 23 nos of existing grid S/Ss on availing loan assistance from PFC/ REC/ Nationalised Banks. OPTCL has engaged M/s Power Research Development Consultants (P) Ltd. (PRDC), Bangalore for this purpose. After conducting a comprehensive system study, the sub-stations, where voltage is low have been identified by M/s PRDC, for installation of 275 MVAR compensation through shunt capacitors. As submitted by Shri Das, CGM, OPTCL the study was conducted considering the peak load condition during the FY 2008-09(Peak load during December 2008 at 20:00 hrs.).

5. Shri Das submitted that OPTCL has carried out the cost benefit analysis with main thrust & emphasis on the following:

- Improvement of voltage profile.
- Reduction in system losses.
- Increase in capacity of lines & grid sub-stations.
- Reliable operation of transmission system by preventing voltage collapse.
- Avoiding penalty by keeping voltage profile within statutory limit.

He also further submitted that the proposed project is basically aimed at up-gradation of the existing system and ensuring better quality of power supply.

Directions and observation of the Commission :-

6. i) After hearing the parties and perusal of the records and the submission of OPTCL and earlier direction of the Commission in case no. 22 of 2009, the Commission hereby gives in-principle approval of the Invest Plan of OPTCL for installation of Capacitor Banks(275 MVAR) in 23 nos. existing Grid Sub Stations.
 - ii) In the mean time, OPTCL has charged some transmission lines & sub-stations including 400 kV Mermundali-Mendhashal Feeder-I. Hence, the Commission desires that a fresh study should be conducted to ascertain the power factor and voltage profile of the sub-stations prior to installation of capacitor Banks.
 - iii) OPTCL should carry out the system study considering the loading condition expected during the year 2012-13, before installation of Capacitor Banks as the scenario may change because of load growth and compensation to be provided either by DISCOMs or consumers. Deviation to the proposal after this study, if any, should be filed in the Commission.
 - iv) OPTCL may also explore the possibility of installation of Capacitor Banks on lease basis with proper annual maintenance contract.
 - v) OPTCL should complete the proposed project within 31.03.2011.
 - vi) The warranty/guarantee including its erection, commissioning, operation & maintenance and other terms & conditions should be finalized beforehand.
 - vii) OPTCL to file the time line for such installation before us by 15th June, 2010 duly serving its copies to all the distribution licensees.
 - viii) OPTCL shall take expeditious action to complete the work as per the time line.
 - ix) Final approval of Capital Outlay consequent to implementation of the scheme is to be granted at the time of capitalization after a diligent and proper prudence check and verification of the actual cost, actual quantity of material used, proper implementation of the scheme.
7. Accordingly, the case is disposed of.

Sd/-
(**B. K. Misra**)
Member

Sd/-
(**K.C. Badu**)
Member