Chapter - 3

CHAPTER - 3

3 Compliance Audit Observations

This chapter includes one Paragraph based on test check of transactions of State Government companies.

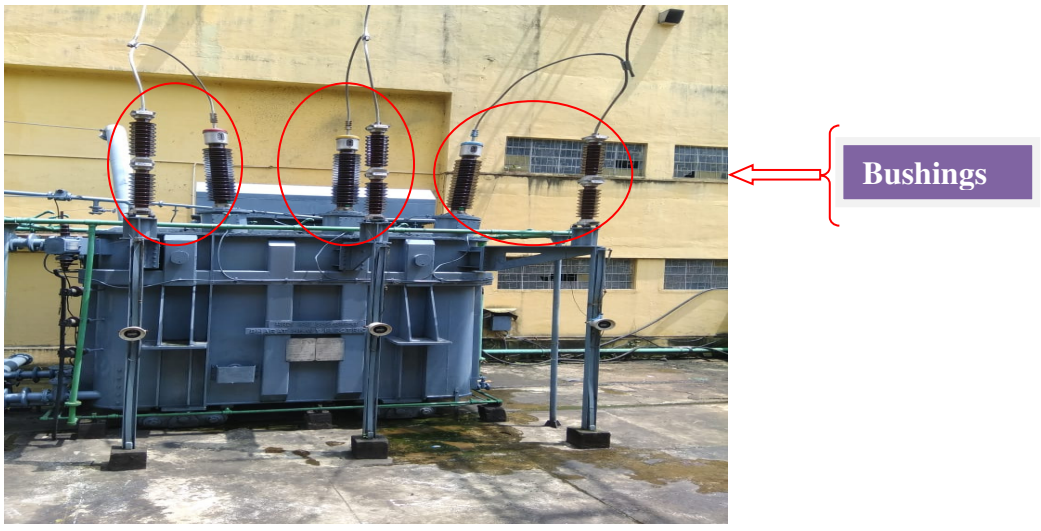
Jharkhand Urja Utpadan Nigam Limited (JUUNL)

3.1 Avoidable generation loss of power worth ₹22.79 crore in hydel power plant, Sikidiri

Failure of JUUNL to carry out periodic testing of bushings and unnecessary delay of 16 months in procurement and installation of replacement resulted in avoidable generation loss of 75.73 MU power valued at ₹ 22.79 crore.

Jharkhand Urja Utpadan Nigam Limited (Company) has a hydel power plant, Swarnrekha Hydel Power Project (SRHP) at Sikidri in Ranchi district, with capacity of 130 MW (two units x 65 MW). Each of the above units is designed with 80 MVA generator transformer (GT) having three separate phases {Red (R), Yellow (Y) and Blue (B)} with high tension bushings[1] in each phase, which is an integral component for its functioning.

Figure 3.1: Generator Transformer and bushings installed at SRHP, Sikidri



The Y phase bushing of GT of Unit II burst on 18 June 2015 leading to immediate shut down of the unit. A used reconditioned bushing that was installed on 28 July 2015, also burst after four hours of operation, along with the remaining two bushings (in phases R and B), leading to Unit II shutting down again.

[1] An insulated device used in transformers to pass an electric current safely.

Bharat Heavy Electricals Limited (BHEL), the Original Equipment Manufacturer (OEM), quoted (September 2015) ₹ 13.14 lakh for the three bushings. Though this purchase was within the delegated powers of the Managing Director (MD), he referred the proposal to the Board of Directors (BoD) for approval, on the ground that the procurement involved 20 *per cent* advance payment. The BoD, however, returned the proposal asking the MD to exercise his delegated powers, and accordingly, a purchase order was issued to BHEL in February 2016.

Simultaneously, the Company referred a proposal for engaging BHEL to supervise installation of bushings for ₹ 44,200/- per service engineer per day for minimum three days. Though under the delegation of powers, the MD had authority to approve consultancy services upto ₹ one crore, Company officials[2] referred (November 2015) the matter to the holding company, Jharkhand Urja Vikas Nigam Limited (JUVNL), who returned (February 2016) the proposal citing the delegation of powers. Thereafter, after two months, the Finance Controller (FC)-I of the Company, without recording any reasons, proposed (May 2016) negotiation with BHEL for price reduction. BHEL refused and increased (August 2016) the rate to ₹ 46,200 per service engineer per day (since the initial three month validity of the offer had expired). The Company thereafter spent nearly six more months in internal discussions before placing the work order (February 2017) for a final payment of ₹ 4.62 lakh. A separate work order, for installation and commissioning of bushings, was issued (March 2017) and the bushings were finally installed and commissioned in June 2017.

Audit observed as under:

✓ Though the Company was required to perform Tan Delta Test (TDT) of bushings every five years[3] from the date of commissioning of the transformers, no such test was carried out since the commissioning of the plant in 1980. Had this been done, the failure of the bushings could have been anticipated and prevented.

✓ Further, even though as per the Company's own assessment, the average life of bushings is 30 years, the Company took no steps to replace the bushings or to procure spare bushings by 2010. Had this been done, the worn out bushings could have been replaced in time and the failure of Unit II prevented.

✓ Considering that the entire procurement was within the MD's delegated powers of ₹ one crore, and the money value of the spares and the supervision of its installation was relatively small, at ₹ 13.14 lakh and ₹ 4.62 lakh, the Company displayed a notable lack of sense of proportion and urgency, resulting in an overall shut down period of 24 months (*i.e.,* from June

[2] Electrical Superintending Engineer (ESE) (Generation), Chief Engineer and Director (Operation & Maintenance)

[3] Minutes of the meeting of standing committee of experts to investigate the failure of 220 kV and above voltage class substation equipment held on 01 January 2017 in Central Electricity Authority, New Delhi.

2015 to June 2017), and loss of electricity generation of 75.73[4] million units (MU) valued at ₹ 22.79 crore[5].

In reply to the audit observations the Company and the Energy department stated (November 2017 and April 2018) that there was no delay on the part of the Company. Audit however, finds the reply untenable, for the reasons already stated.

Ranchi **(C. NEDUNCHEZHIAN)**

The 18 October 2018 **Accountant General (Audit), Jharkhand**

Countersigned

New Delhi **(RAJIV MEHRISHI)**

The 25 October 2018 **Comptroller and Auditor General of India**

[4] Equivalent to energy generated by Unit I, which is of the same capacity, during June 2015 to June 2017 at capacity utilisation ranging between 17 MW (20 *per cent*) to 65 MW (100 *per cent*).

[5] 75.73 MU x ₹ 3.01 per unit (net realisable value per unit of power)