

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

**Petition No. 72/MP/2013
Wih I.A. No.3/2013**

**Coram:
Shri V.S.Verma, Member
Shri M. Deena Dayalan, Member**

**Date of Hearing: 16.7.2013
Date of Order : 17.9.2013**

In the matter of

Providing protection systems having reliability, selectivity, speed and sensitivity and keeping them in functional in terms of Regulation 5.2 (l) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 read with Regulation 3 (1) (e) of the Central Electricity Authority (Grid Standards) Regulations, 2010 for ensuring security of the Eastern Regional grid as well as the interconnected India grid.

And in the matter of

Eastern Regional Load Despatch Centre, New Delhi

Petitioner

Vs

Chairman, Jharkhand State Electricity Board, Ranchi

Chief Engineer (Trs and O & M), Jharkhand State Electricity Board, Ranchi

Respondents

Following were present:

Shri G.Chakraborty, ERLDC

Shri R.B.Sharma, Advocate, JSEB

ORDER

1. The petitioner, Eastern Regional Load Despatch Centre has filed the present petition seeking following relief:

"(a) Appropriate directions/advice may be issued to the respondent for its failure to comply with the,-

- (i) Regulation 3 (1) (e) of the Central Electricity Authority (Grid Standards) Regulations, 2010
- (ii) Regulations 5.1, 5.2(e), 5.2(l) and 5.2 (r) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) (First Amendment) Regulations, 2012.

(b) JSEB may be directed to ensure adequacy and healthiness of protection system in compliance with the Regulation 3 (1) (e) of the CEA (Grid Standards) in terms of IEGC Regulation 5.2 (e) .

(c) JSEB may be directed to carry out a thorough audit of the protection system at all its sub-stations and take corrective measures.

(d) May pass such other orders as deemed fit, in the circumstances of the case."

2. The petitioner has submitted that the protection system of Jharkhand State Electricity Board (JSEB) is in an appalling condition since long, resulting in frequent power supply interruptions to industries and traction system in the State. The important areas in JSEB which get affected by non-operation/mal-operation of the STU protection system comprise the sub-stations of Chandil, Golmuri, Adityapuri, Jadugoda, Noamundi, Rajkharwan, Chakradharpur, Kendposi and Goelkera in the Southern part of JSEB which cater to around 300-350 MW load of the State which consists of various important industries besides traction load of S.E Railways, fed from Rajkharwan, Chandil, Chakradharpur, Kendposi and Goelkera.

3. The petitioner has highlighted multiple tripping incidences at various sub-stations due to lack of co-ordination of relay at Chandil complex as under:

- (a) On 2.2.2013 around 284 MW load was interrupted at 05.:05 hrs, when 315 MVA ICT-1 at Jamshedpur tripped due to bursting of B phase CT at 220 kV side, resulting in tripping of Chandil-Ranchi, 220 kV Chandil-Santaldih, 220 kV

Ramchandrapur-Joda sub-stations and all other feeders from Chandil and Ramchandrapur sub-stations. Such multiple loss of transmission elements resulted in total power failure at Ranchandrapur and Chandil sub-stations .

(b) On 3.2.2013 at 12.50 hrs, all feeders connected to Chandil were tripped from their other ends after a phase-to-phase fault occurred at Ranchandrapur sub-station at 12.46 hrs which could not be cleared in time by the local main protection system of JSEB resulting in total power failure at Chandil sub-station.

(c) On 5.2.2013, all feeders connected to Chandil tripped again from their other ends due to problem at Chandil sub-station.

4. The petitioner has submitted that the need for improving the protection system of JSEB is being deliberated in various fora of Eastern Regional Power Committee for the last two years, with achievement of no significant progress in this direction, which amply illustrate the lack of seriousness on the part of JSEB. Moreover, JSEB frequently refrained from attending several successive meetings due to which deliberation pertaining to its system had to be abandoned. Under the circumstances, not only the consumers of the State are suffering badly, but also the security of the entire Eastern Regional grid is at stake.

5. Regulation 5.1 of the Grid Code provides that the participant utilities shall adopt good utility practice at all the times for satisfactory operation of the regional grid. Relevant portion is extracted as under:

"5.1 Operating philosophy

(a) The primary objective of integrated operation of the National/Regional grids is to enhance the overall operational reliability and economy of the entire electric power network spread over the geographical area of the interconnected system. Participant utilities shall cooperate with each other and adopt Good Utility Practice at all times for satisfactory and beneficial operation of the National/Regional grid."

6. Further, Regulation 5.2 (e) of the Grid Code provides that the maintenance of respective power system elements shall be carried out in accordance with the provisions in CEA Grid Standards. Regulation 5.2 (l) of the Grid Code further provides that the provisions of protections and relay settings shall be coordinated periodically throughout the Regional Grid, as per a plan to be separately finalized by the Protection sub-Committee of the RPC. Relevant portion is extracted as under:

"5.2 System Security Aspects

* * * * *

(e) Maintenance of their respective power system elements shall be carried out by users, STUs and CTU in accordance with the provisions in Central Electricity Authority (Grid Standards) Regulations, 2010. Any prolonged outage of power system elements of any User/CTU/STU, which is causing or likely to cause danger to the grid or sub-optimal operation of the grid shall regularly be monitored by RLDC. RLDC shall report such outages to RPC. RPC shall finalise action plan and give instructions to restore such elements in a specified time period.

* * * * *

(l) Provision of protections and relay settings shall be coordinated periodically throughout the Regional grid, as per a plan to be separately finalized by the Protection sub-Committee of the RPC. RPC shall also prepare islanding schemes and ensure its implementation in accordance with Central Electricity Authority (Grid Standards) Regulations, 2010. All users and SEBs shall ensure that installation and operation of protection system shall comply with the provisions of Central Electricity Authority (Grid Standards) Regulations, 2010."

7. The petitioner has submitted that despite continued efforts, JSEB is violating the provisions of Regulations 5.1, 5.2 (e), 5.2 (l) and 5.2 (r) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 (Grid Code). The respondents have failed to comply with the provisions of Grid Code and Regulation 3 (1) (e) of the Central Electricity Authority (Grid Standards) Regulations 2010 as given below:

"3 Standards for Operation and Maintenance of Transmission lines- (1) All entities, appropriate Load Despatch Centres and Regional Power Committees, for the purpose of maintaining the Grid Standards for operation and maintenance of transmission lines, shall,-

* * * * *

(e) Provide standard protection systems having the reliability, selectivity, speed and sensitivity to isolate the faulty equipment and protect all components from any type of faults, within the specified fault clearance time and shall provide protection coordination as specified by the Regional Power Committee.

Explanation: For the purpose of this regulation "fault clearance time" means the maximum fault clearance times are as specified in Table 1 below:

S.No.	Nominal System Voltage (kV rms)	Maximum Time (In milliseconds)
1.	765 and 400	100
2.	220 and 132	160

Provided that in the event of non clearance of the fault by a circuit breaker within the time limit specified in Table 4, the breaker fail protection shall initiate tripping of all the breakers in the concerned bus section to clear the fault in the next 200 milliseconds."

8. The petitioner has further submitted that inadequacies/failures in the protective system at Chandil sub-station of JSEB are affecting the security, economy and efficiency of the State. For most of the incidents that have occurred so far, detailed

report and analysis have not been made available to ERLDC in contravention of Regulation 5.2 (r) of the Grid Code and Regulation 15 of the CEA Grid Standards as given below:

"5.2 (r) All the Users, STU/SLDC and CTU shall send information/data including disturbance recorder/sequential event recorder output to RLDC within one week for the purpose of analysis of any grid disturbance/event. No user, SLDC/STU or CTU shall block any data/information required by the RLDC and RPC for maintaining reliability and security of the grid and for analysis of an event".

Regulation 15 of the CEA Grid Standards provides as under:

"15. Operational Data during normal operation and during grid incidents and grid disturbances:

All operational data including disturbance recorder and event logger reports, for analyzing the grid incidents and grid disturbance and any other data which in its view can be a help for analyzing grid incident or grid disturbance shall be furnished by all the Entities within twenty four hours to the Regional Load Dispatch Centre and concerned Regional Power Committee. All Equipments such as disturbance recorders and event loggers shall be kept in healthy condition, so that under no condition such important data is lost."

9. The petitioner has also filed Interlocutory Application No. 3/2013 seeking directions to JSEB to comply with the provisions of the Grid Code. The petitioner has submitted that three more disturbances have occurred in JSEB system. Considering the seriousness of the situation, ERLDC vide its letter dated 10.5.2013 requested the JSEB to expedite necessary corrective action for proper functioning of JSEB protection system. However, no actions are being taken by the JSEB to stop tripping of JSEB system .

10. Reply to the petition has been filed by the respondents. The respondents in their joint reply have submitted as under:

(a) All efforts are being made to identify the relays and other associated problematic equipments, if not found up to the standards, the same are being replaced gradually. The bus bar protection work of Chandil is on verge of completion and the same work of Ramchandrapur g/s/s has been initiated.

(b) The matter was brought to the notice of ERPC and accordingly, the committee constituted by it visited Chandil and whatever has been suggested by Committee, JSEB has initiated action accordingly .

(c) Regulation 3 (1) (e) of CEA Grid Standards are for new installations connected to the Grid and are not applicable in the present case. Further the Government of India has realized about the up-gradation of old g/s/s and accordingly D.P.R was sought for necessary assistance which has already been complied with.

(d) The protection system at 220 kV Chandil is expected to be completed shortly. The bus bar protection of Ramchandrapur g/s/s will also be completed early as six nos of CTs needed for the bus bar protections are in the process of procurement.

(e) JSEB has already taken up the work for up gradation of the control and protection system at 220/132 kV Ramchandrapur and Chandil sub-stations.

(f) JSEB has requested to direct the petitioner to co-ordinate all such issues in the ERPC forum.

11. During the hearing, the representative of the petitioner submitted as under:

(a) There is no tangible progress in rectification/implementation of protection system;

(b) JSEB has not submitted details of measures taken for implementation of system;

(c) There has been a tripping in the Chandil just 4-5 days back. Therefore, the protection system is faulty.

12. The representative of the petitioner requested the Commission to direct JSEB to set its protection system right.

13. Learned counsel for the respondents submitted that the petitioner did not bring up these matters in the RPC forum and CERC is not the right forum to discuss the issue. The petitioner should file the petition before CERC only if RPC forum is not able to resolve the issue. In response, the representative of the petitioner had submitted that the issue was discussed at various levels of RPC forum. The issue was discussed in the 19th ERPC meeting held on 24.9.2011, 63rd and 64th O.C.C. meeting held on 17.6.2011 and 19.7.2011 respectively, 11th & 12th P.C.C meeting held on 24.11.2011 and 26.3.2012 respectively and 20th T.C.C. meeting held on 16.12.2011. Despite the

matter being discussed at various forums of ERPC, JSEB has not been able to show results on the ground. Learned counsel for the JSEB submitted that there is no denying the fact that protection system needs to be set right, but before approaching the Commission, the issue should be addressed at RPC forum.

14. We have considered the submission of the representative of the petitioner and Learned counsel for the respondents. The respondents have admitted that the protection system needs to be set right. It is noted that the issue for improving the protection system of JSEB was discussed in the various forums as mentioned in para 12 as well as further addressed in 13th & 14th P.C.C meeting held on 8.8.2012 and 21.11.2012 respectively and 81st, 82nd and 83rd O.C.C. meeting held on 21.11.2012, 18.2.2013 and 25.3.2013 respectively . In the meetings, JSEB itself admitted that proper coordination was required at Chandil and assured to install bus-bar protection and numerical relays by 15.3.2013 in the 82nd O.C.C meeting. However, trippings are continuing in JSEB system despite repeated persuasion.

15. From the pleadings of the parties, we have observed that the matter was discussed at various forums of ERPC. The implementation of protection system is a serious matter and the petitioner has done nothing wrong by addressing the issue before this Commission especially in view of the fact that the matter has already been discussed at various RPC forums without any tangible progress. In our view, the respondents have failed to comply with Regulation 3 (1) (e) of the Central Electricity Authority (Grid Standards) Regulations, 2010 and Regulations 5.1, 5.2(e), 5.2(l) and 5.2

(r) of the Grid Code. We direct the respondents to attend the discrepancies of the entire protection system within 4 months i.e. by the end of December, 2013 failing which it would be considered as non-compliance of the Grid Code and the direction of the Commission and action shall be initiated under section 142 of the Electricity Act, 2003 against the heads of SLDC and JSEB.

16. The petition with I.A. is disposed of with the above directions.

Sd/-
(M Deena Dayalan)
Member

sd/-
(V.S.Verma)
Member