

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

**Coram:
Shri Gireesh B. Pradhan, Chairperson
Shri A.K Singhal, Member
Shri A.S.Bakshi, Member**

Date of Order : 18.8.2015

Petition No. 86/MP/2014

In the matter of

Petition under Section 94 (f) of the Electricity Act, 2003 seeking time extension for implementing the Commission's order dated 20.2.2014 in Petition No. 146/MP/2013 with I.A. 36/2013, in the matter of providing protection systems having reliability, selectivity, speed and sensitivity and keeping them functional in terms of Regulation 5.2 (i) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) (First Amendment) Regulations, 2012 read along with Regulation 3 (e) of Central Electricity Authority (Grid Standards) Regulations, 2010 and following best practice of O&M of transmission elements for ensuring security of the Southern Regional grid as well as the inter-connected Indian grid.

**And
In the matter of**

Kerala State Electricity Board Limited
Vyduathi Bhavanam,
Pattom, Thiruvananthapuram-695 004

..... **Petitioner**

Vs.

1. Southern Regional Load Despatch Centre
29, Race Course Cross Road,
Bangalore-110 016.

2. Southern Regional Power Committee
29, Race Course Cross Road,
Bangalore-110 016

....**Respondents**

Petition No. 374/MP/2014

In the matter of

Petition under Section 94 (f) of the Electricity Act, 2003 seeking extension of time in implementing the Commission's order dated 20.2.2014 in Petition No. 146/MP/2013 and I.A. 36/2013 of SRLDC for providing protection systems having reliability, selectivity, speed and sensitivity and keeping them functional in terms of Regulation 5.2 (i) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) (First Amendment), Regulations, 2012 read along with Regulation 3 (e) of Central Electricity Authority (Grid Standards) Regulations, 2010 and following best practices of O&M of transmission elements for ensuring security of the Southern Regional grid as well as the interconnected Indian Grid.

And

In the matter of

Tamil Nadu Transmission Corporation Limited (TANTRANSCO)
Protection and Communication,
1st Floor, 5B Block,
144, Anna Salai, Chennai-600 002

Petitioner

Vs

Southern Regional Load Despatch Centre
29, Race Course Cross Road,
Bangalore-110 016.

Respondent

Following were present:

Shri George V. James, KSEB
Shri S. Vallinayagam, Advocate, TANTRANSCO
Shri J. Rexline Terse, TANTRANSCO
Shri V. Suresh, SRLDC
Ms. Jyoti Prasad, POSOCO
Ms. Abilla Zaidi, POSOCO
Ms. Jayantika Singh, SRPC and SRLDC

ORDER

The petitioners, Kerala State Electricity Board Limited and Tamil Nadu Transmission Corporation Limited, have filed the present petitions for seeking

extension of time to comply with the Commission`s direction dated 20.2.2014 in Petition No. 146/MP/2013.

Background of the case:

2. As per the recommendations in Enquiry Committee report, a third party protection audit in Southern Region was carried out and all constituents of Southern Region (SR) agreed in-principle for implementation of the recommendations of the Committee. Since a number of recommended items were not implemented by the constituents of Southern Region, Southern Regional Load Despatch filed Petition No. 146/MP/2013 seeking directions to the constituents of SR to ensure timely implementation of recommendations of Protection Audit. The Commission, after hearing all the constituents of SR and SRLDC, by order dated 20.2.2014 issued the following directions:

“27. We agree to the petitioner's contention that the linking implementation of protection audit/PCC recommendations with funding modality has resulted into implementing schedule becoming uncertain which is undesirable as the matter involves grid security. The petitioner has proposed to segregate the works of implementation in two Phases, namely Phase-I requiring immediate attention and Phase-II requiring timely implementation. Phase-I involves minor works such as revision of settings, replacement of numerical relays, implementation of bus-bar protection in critical 220 kV sub-stations etc. and Phase-II involves activities such as replacement of old breakers etc. which may require some time. Accordingly, we direct the respondents to implement the works as mentioned in Phase-I and Phase-II by 1.5.2014 and 1.9.2014 respectively. SRPC is directed to coordinate the protection setting issue and submit a report regarding implementation of Phase-I activities by 1.6.2014. SRPC is further directed to submit bimonthly status report for works mentioned in Phase-II to the Commission.

.....

29. The petitioner has submitted that number of respondents are not complying with the provisions of Regulation 5.2 (r) of the Grid Code and the directions of the Commission. We administer a strong warning to the respondents to take all possible measures permissible under the Act and the Grid Code to provide

data /information to RLDC and RPC for maintaining reliability and security of the grid. We also make it clear that failure in this regard will amount to non-compliance of the directions of this Commission and render the constituent liable for proceedings under Section 142 of the Electricity Act, 2003 and other relevant provisions. We also direct the petitioner and SRPC to coordinate and monitor the progress and compliance of Commission's directions and ensure compliance of Regulations 5.2 (r) of the Grid Code and report instances of non-compliance to the Commission.”

Petition No. 86/MP/2014 filed by Kerala State Electricity Board Limited

3. Kerala State Electricity Board Limited (KSEBL) has filed this petition for seeking extension of time for implementation of the Commission’s order dated 20.2.2014 in Petition No. 146/MP/2013. KSEBL has submitted that it is working under the Government of Kerala and all major works, procurement, etc. are governed and guided by the rules and regulations of Government of Kerala.

4. KSEBL has submitted that it has to comply with all the tender formalities such as administrative sanction for procurement/work, finalization of the specifications, inviting tenders with wide publicity, evaluation of technical tender documents, review of pre-qualification committees, financial bid evaluation, issue of LOI, etc. The said formalities require a minimum of six months before issuing purchase order for a particular item. If the same is re-tendered, additional period of four months also would be required for the whole process. In case of 220 kV Pothencode sub-station, certain works in Phase-II can only be completed with double bus arrangement which is included in Phase-I. KSEBL has submitted the status of phase-wise details of protection audit remarks, action taken so far and proposed road map with time line for implementation of remaining protection audit remarks works along with PERT chart.

5. In view of the above, KSEBL has made the following prayers:

“Considering the above submissions made by KSEB Ltd. and the difficulties faced by KSEB Ltd. regarding the timely implementation of the Hon`ble CERC order dated 19.12.2013, in the matter of completion of Phase-I & II works of Protection Audit, it is prayed before the Hon`ble Commission that

(a) Time extension may kindly be granted for Phase-I works till 31.12.2014 and 220 kV Pothencode sub-station date of completion of phase-I works by 31.3.2015.

(b) Time extension may kindly be granted for Phase-II works till 31.5.2016.”

6. The matter was heard on 15.7.2014. During the course of the hearing, the representative of KSEBL submitted that Phase-I requires minor works to be completed such as revision of settings, replacement of numerical relays, implementation of bus bar protection in critical 220 kV sub-stations, etc. and phase-II involves activities such as procurement of circuit breakers and current transformers. The representative of KSEBL further submitted that certain sub-stations of KSEBL are very old and require different equipment. At certain sub-stations, there are space constraints. The representative of KSEBL submitted that considering all these limitations, KSEBL is seeking time for implementation of works in Phase-I and Phase-II of the Protection Audit till 31.12.2014 and 31.5.2016 respectively and for completion of Phase-I works of 220 kV Pothencode sub-station till 31.3.2015.

7. The Commission directed Southern Regional Load Despatch Centre (SRLDC) to file (i) reasonableness of time sought by KSEBL for Phase-II, (ii) position of other constituents in regard to implementation of the Commission`s order dated 20.2.2014 in Petition No. 146/MP/2013 and (iii) status report regarding visibility of protection system of Southern Region constituents in the SCADA system of SLDC.

8. SRLDC, vide its affidavit dated 1.9.2014, has submitted as under:

(a) As far as time scale for attending protection audit remarks is concerned, the maximum time required for any item which requires procurement action would be about 10 months as under:

Activity	Months
Finalization of Specification	0.5
Estimate preparation	0.5
Initiating proposal	0.5
Approval of Proposal	1
Calling tender	0.5
Processing Tenders	2
Discussion & Issue of LoA	1
Supply of Materials	3
Erection, Testing & Commissioning	1
Total Period	10

(b) For CT/CVT circuit breakers, the supply and erection period may be 8 to 10 months in place of 3 to 4 months shown in table above. Thus, maximum time schedule for any item even if it is commenced only now, shall be 15 to 16 months. During the special meeting on 19.8.2014, SRPC also opined that time scale computed above is practical and reasonable.

(c) The rational time schedule of individual milestone for implementation of all the recommendations could be as under:

S.No	Major Milestone Description	Practically possible time schedule
1	Technical and Administrative approval including finalization, finance concurrence, start-up of tendering process.	2 to 3 months for all the items as multiple proposals are to be processed
2	Tendering process including calling of tenders, pre/post bid	3 to 4 months for all the items as multiple proposals are to be

	discussion, placement of LOA	processed
3	Supply of materials including FAT etc.	8 to 10 months for items like CT,CVT, Breaker etc., while about 3 months for other items
4	Installation , testing and commissioning including SAT, etc.	3 to 4 months for all the items as the construction activities like foundation, structural erection etc., could be done as a parallel activity during supply period.
5	Total implementation period	3 months for items that involves relays/meter and minor procurement. 12 months for items that involve major procurement, design changes with major site modification/civil activities.

(d) According to KSEBL, works such as arrangement for earth resistance measurement, etc. mentioned at Iddukki HEP would be done as a part of Renovation and Modernization (R & M). In the 220/230 kV sub-stations, major changes and multiple works are required for implementation of the recommendations of protection audit due to space constraints in the very hilly terrain old sub-station. Iddukki HEP is critical generating station of KSEBL and number of times partial grid disturbances had occurred in the generating station. The works at Iddukki HEP requires special attention of KSEBL and shall not be treated as regular R&M works. Considering the same, KSEBL is required to make all possible efforts to complete the entire work recommended at Iddukki HEP by December 2015/March 2016.

(e) During deliberation at SRPC on 19.8.2014, KSEBL confirmed that 'it would be completing all the Phase-I items by December 2014, Bus-bar protection works identified for Kanaiyampetta sub-station by March 2015 and all other items of the

Phase-II activities by December 2015 except at Iddukki HEP, which is clubbed with R&M proposal,. This appears practically reasonable considering the fact that actions were effectively commenced by KSEBL in the recent past. However, the R&M proposals need to be expedited'.

9. Neyveli Lignite Corporate Limited (NLC), which is not a party in the present petition, vide its affidavit dated 11.9.2014 has filed status of implementation of protection audit remarks. NLC has further submitted that during the hearing of the petition, the Commission, vide RoP dated 15.7.2014, directed SRLDC to file the status of the constituents of Southern Region in regard to the implementation of the Commission's order dated 20.2.2014. Accordingly, SRPC requested the constituents of Southern Region to submit affidavit directly to the Commission as per the decision of the Protection Coordination Sub-Committee (PCSC) meeting held on 31.7.2014. NLC has submitted that based on the direction of SRPC, it has filed the present affidavit containing the status of compliance of the recommendations of protection audit with respect to NLC generating stations. NLC has submitted that SRPC has issued 25 guidelines for NLC generating stations. Out of these, 7 guidelines are to be completed in Phase-I and the remaining 18 are to be completed in Phase-II. NLC has stated that 22 guidelines are complied with and only 3 guidelines, namely replacement of existing micro mho distant protection (main-I) relays in TPS-I expansion with numerical relay (Phase-I), providing 2nd bank of 48 V battery for PLCC in TPS-I Expansion and TPS-II Expansion (Phase-II) are to be complied with by NLC which would be completed by 31.12.2014 and 31.3.2015 respectively.

Petition No. 374/MP/2014 filed by Tamil Nadu Transmission Corporation Limited (TANTRANSCO)

10. Tamil Nadu Transmission Corporation Limited has filed this petition for seeking extension of time for implementation of remarks of protection audit. TANTRANSCO has submitted as under:

(a) Protection Audit for the 33 nos. of sub-stations of TANTRANSCO has been completed. Minor issues recommended by the Audit Team under Phase- I and Phase-II activities have been resolved and in this regard, report and pending activities with regard to Phase-I and Phase-II works have already been submitted to SRPC. Procurement action for materials is being carried out in phased manner which involves a minimum time frame of 6 months for processing the tender.

(b) All possible steps are being taken by TANTRANSCO, namely purchase orders have been placed for supply of distance relays for feeder protection, differential relays for auto transformer protection and carrier sets with coupler for providing carrier inter-trip and redundant channels to comply with the directions of the Commission. However, despite sincere efforts made by TANTRANSCO, the works of Phase- I and Phase- II activities could not be completed within the prescribed time specified in the order dated 20.2.2014 in 146/MP/2013.

(c) As per the recommendations of SRPC, different make of relays for Main 1 and Main 2 protection as well as separate DC source for different protection schemes are being adopted in the new sub-stations to ensure grid security. The new stations are equipped with sub-station Automation System which involves GPS, Disturbance Recorder and Event Logger.

(d) In the existing generating stations, for synchronization of all relays with GPS could be enabled only after replacing the static relays with numerical relays. This process involves procurement of new relays and replacing them in place of old ones.

(e) Provision of bus section breaker for sectionalizing the bus to avert total sub-station outage involves procurement of breaker, erection and modification of bus bar Protection Scheme and the requirement is covered in DPR. This process involves space constraints in some places, bay shifting works and procurement through tender which requires considerable time.

(f) The existing protection scheme in TANTRANSCO ensures stable operation. TANTRANSCO is taking all steps to prevent/minimize system outage. During July 2014 to February 2015, total 583 trippings have occurred in Southern Region. Out of this, 28 trippings occurred in TANTRANSCO which is 4.80% of total trippings in Southern Region. From this, it is evident that the trippings are not due to failure of protection schemes. Trippings are always reviewed by SRLDC and SRPC. The recommendations of Protection Co-

ordination Sub-Committee of SRPC are being complied with by TANTRANSCO.

11. In view of the above, TANTRANSCO has made the following prayers:

“(a) Time extension upto 31.3.2015 for completing the Phase-I activities of providing numerical relays for feeder protection and auto transformer protection;

(b) Time extension upto 30.6.2016 for other Phase-I activities such as provision of line VT, 5 core CT, Time synchronizing with GPS, DR and EL and Phase-II activities;

(c) Time extension upto 30.6.2017 for Renovation & Modernization of Singarpet, Singaperumalkoil and Tondiarpoet 230 KV Substations; and

(d) Such other order or orders as this Hon`ble Commission may deem fit and proper in the facts and circumstances of the case.”

12. The matter was heard on 15.1.2015. During the course of hearing, learned counsel for TANTRANSCO submitted that due to financial and time constraints, TANTRANSCO could not implement the recommendations of protection audit. Learned counsel further submitted that there are 6 to 7, 230 kV sub-stations which are very old and require additional land and entire civil work has to be done for installation of new equipment. The representative of SRPC and SRLDC submitted that SRPC and SRLDC convened a meeting of all the constituents of Southern Region wherein detailed inputs were given to each constituent regarding improvement of the State system. The representative of SRLDC submitted that SRPC and SRLDC have made efforts on their own to take feedback on the status of implementation from the individual constituents of the Southern Region. The Commission directed the other constituents of the Southern Region to submit the status of implementation of protection system in their respective States.

13. TANTRANSCO, vide its affidavit dated 28.3.2015, has submitted that in compliance with the Commission`s directions, purchase orders have already been placed for supply of distance relays for feeder protection, differential relays for auto transformer protection and carriers sets with coupler for providing carrier inter-trip and redundant channels. TANTRANSCO has further submitted that availing 'Line Clear' is one of the major difficulties due to operational constraints. TANTRANSCO has submitted the details of remedial measures for the trippings in its affidavit dated 28.3.2015.

14. Karnataka Power Transmission Corporation Limited (KPTCL) vide its affidavit dated 31.3.2015 has submitted that all the constituents of Southern Region were directed vide order dated 20.2.2014 to complete the implementation of activities covered under Phase-I and Phase-II of protection audit observations by 1.5.2014 and 1.9.2014 respectively. Since implementation of Phase-I and Phase-II works involve tendering, procurement and execution of works based on availability of shutdowns, the Commission`s directions dated 20.2.2014 could not be timely complied with. Accordingly, KPTCL vide its affidavit dated 27.8.2014 (filed on 1.9.2014) requested the Commission to grant time upto 15.1.2016 for completion of protection audit remarks. KPTCL has submitted that tender was floated for the subject work, however, considering the different variety of works involved at various sub-stations spread across vast geographical area, the bidders requested time extension for preparing their offers and up-loading their bid documents. The technical bid was opened on 20.2.2015. Since the amount put to tender is ₹ 77.46 crore, the same was required to

be placed before the Board of Director`s meeting. KPTCL has submitted that after resolution in the Board, LOI would be issued. However, successful bidder would be given a month`s time to accept LOI and entered into an agreement with KPTCL. KPTCL has requested to grant extension of time by 15.1.2016 for completion of Phase-I and Phase-II activities.

15. Karnataka Power Corporation Limited (KPCL) in its affidavit dated 28.3.2015 has submitted that KPCL, vide its affidavit dated 25.8.2014 had requested for grant of additional time to comply with the directions in order dated 20.2.2014 in Petition No. 146/MP/2013. KPCL has filed the status of implementation of recommendations of Third Party Protection Audit Committee pursuant to the Commission`s direction dated 15.1.2015. KPCL has stated that out of 33 observations of Third Party Protection Audit in Phase-I activities, 13 observations have been complied with and out of 21 observations for Phase-2 activities, 6 observations have been complied with. However, the remaining activities could not be complied with till date due to (a) delay in obtaining approvals from technical committee before issuing tender notification, (b) clarifying the bid queries from the bidders, (c) evaluation of technical bid, (d) obtaining approvals from Contract Management Group of KPCL, (e) opening of price bid, the process of evaluation and (f) obtaining financial opinion from the Finance Department of Govt. of Karnataka. KPCL has submitted that though the erection works involve obtaining prior line clearance from the Load Despatch Centre, dismantling of existing equipment, laying new foundation, curing time of 25 days, erection of new equipment and commissioning, KPCL is insisting on the contractors to take up the erection works simultaneously at different project locations and to complete the same at the earliest.

KPCL has requested to extend the date of completion of Phase-I and Phase-II works till 31.10.2015 and 31.12.2015 respectively.

Analysis and Decision:

(A) Case of KSEBL:

16. KSEBL has initiated action to implement the suggestions of protection audit. However, KSEBL has sought extension of time for completion of Phase-I activities till 31.12.2014, 220 kV Pothencode sub-station till 31.3.2015 and Phase-II till 31.5.2016. The Commission vide Record of Proceedings dated 1.8.2014 had allowed time to KSEBL till 31.12.2014 for completion of works in Phase-I of the protection audit.

17. SRLDC, vide its affidavit dated 25.8.2014, has submitted that action like administrative approval, finalization of specification, tendering process, etc. has already commenced in case of KSEBL and with consistent effort, it would be possible to complete all Phase-II items by 12 months. i.e by September,2015. KSEBL has further submitted that KSEBL's request for time till December, 2015 on account of such reasons as design changes in old sub-stations, modification of bus arrangement, simultaneous execution of multiple works, etc. appear to be reasonable. According to SRLDC, works at Iddukki HEP should not be treated as regular R&M works as the sub-station is very important and critical and the entire works recommended for the sub-station should be completed by December, 2015/March, 2016. It is noted that the KSEBL has already initiated actions to attend the protection audit remarks covered under Phase-I and Phase-II. KSEBL has also submitted detailed time-line for implementation of the audit remarks. It is pertinent to mention that time for completion

of Phase-I of protection audit remarks and for 220 kV Pothencode sub-station of KSEBL is already over.

18. Noting the submission of KSEBL, SRLDC and SRPC and considering the actions already initiated by KSEBL for implementation of remarks of protection audit, we allow time till 31.12.2015 and 31.3.2016 for implementation of Phase-II works and R&M works at Idduki HEP respectively.

(B) Case of TANTRANSCO:

19. TANTRANSCO has sought time (a) upto 31.5.2015 for completion of Phase-I activities of providing numerical relays for feeder protection and auto transformer protection; (b) up to 30.6.2016 for other Phase-I activities such as provision of line VT, 5 core CT, Time synchronizing with GPS, Disturbance Recorder, Event Logger and Phase II activities; and (c) up to 30.6.2017 for Renovation and Modernization of Singarpet, Singaperumalkoil and Tondiarpet 230 kV sub-stations under Phase-III activities.

20. TANTRANSCO has submitted that due to financial and time constraints, it could not implement the recommendations of Protection Audit. TANTRANSCO has further submitted that 6 to 7 Nos. of 230 kV sub-stations are very old and require additional land and entire civil work has to be done for installation of new equipment. It is noted that TANTRANSCO has already initiated action for attending the issues brought in Phase-I and Phase-II of protection audit and due to certain difficulties projected by TANTRANSCO, it could not implement the remarks of protection audit.

21. After considering the submissions of TANTRANSCO, SRLDC and SRPC, it is noted that TANTRANSCO's request for time till 31.5.2015 for implementation of Phase-I activities of providing numerical relays for feeder protection and Auto transformer protection is already over. We allow time till 30.6.2016 for other Phase-I activities such as provision of line VT, 5 core CT, Time synchronizing with GPS, Disturbance recorder & event logger and Phase-II activities. According to SRLDC, total implementation period is 15 to 16 months for items which involve major procurement, design changes with major site modification/civil activities. Accordingly, we allow 16 months time i.e up to 30.11.2016, for Renovation and Modernization of Singarpet, Singaperumalkoil, Salem and Tondiarpet 230 kV sub-stations from the issue of the order.

(C) Case of NLC:

22. NLC has sought time upto 31.12.2014 and 31.3.2015 for completion of Phase-I work of Numerical Relay Retrofitting and for Phase-II works of providing second battery bank of PLCC respectively. It is noted that the completion dates for Phase-I and Phase-II of protection audit remarks as requested by NLC are already over. Therefore, no direction is required in this regard. However, we direct NLC to file a confirmation report regarding completion of protection audit works for Phase-I and Phase-II.

(D) Case of KPTCL

23. SRLDC has stated that KPTCL has already completed protection audit recommendations where there are no additional financial implications. SRLDC has

further submitted that on 16.9.2014, KPTCL invited tenders for the completion of works and LOA is under process. As per the time line given in the tender documents, the schedule for completion of entire works of Phase-I and Phase-II is January 2016. SRLDC has stated that to facilitate timely completion, the tender has been processed by making four geographical packages such that different agencies may simultaneously work at different areas of the distribution companies of Karnataka. Considering the submission of KPTCL and SRLDC, we allow time to KPTCL time till 15.1.2016 for completion of Phase-I and Phase-II of protection audit remarks. No further extension shall be granted in this regard.

(E) Case of KPCL

24. SRLDC has submitted that KPCL is yet to implement number of items of the Phase-I which do not involve procurement action. However, KPCL vide its affidavit dated 6.4.2015 has submitted that it has obtained administrative approval for procurement of material required for protection audit remarks. KPCL has further stated that it has already completed certain Phase-I as well as Phase-II works. KPCL has prayed to extend the date of completion for Phase-I and Phase-II works upto 31.10.2015 and 31.12.2015 respectively. Considering the submission of KPCL and SRLDC, we allow time to KPCL till 31.10.2015 and 31.12.2015 for completion of Phase-I for Phase-II of protection audit remarks respectively. No further extension shall be granted in this regard.

25. SRLDC has submitted list of items discussed in special meeting of PCSC wherein it was proposed that PCSC forum would send the proposal for dropping

certain items under protection audit recommendations. In this regard, we are of the view that the items to be included/excluded while monitoring implementation of protection audit should be finalized at RPC level in the interest of grid security.

26. We direct SRPC to (a) submit status of protection audit remarks in respect of APGENCO, NTPC (SR), Talcher, Puducherry, PGCIL (SRTS I & II), MAPS and TANGEDCO, (b) monitor the status of completion of remarks of protection audit in respect of all constituents of Southern Region in Protection Coordination Sub-Committee (PCSC) meetings, and (c) to coordinate periodic protection audit to be carried out in Southern Region after deliberation in SRPC. All the constituents of Southern Region are directed to file their status with SRPC on regular basis to facilitate proper monitoring in PCSC meetings. SRPC is directed to submit bi-annually status report to the Commission confirming the completion of Phase-I, Phase-II and R&M works of protection audit remarks of the constituents of Southern Region.

27. The Petition Nos. 86/MP/2014 and 374/MP/2014 are disposed of in terms of the above.

Sd/-
(A.S.Bakshi)
Member

sd/-
(A. K. Singhal)
Member

sd/-
(Gireesh B. Pradhan)
Chairperson