

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 265/MP/2015**

**Coram:**

**Shri A.K Singhal, Member**

**Shri A.S.Bakshi, Member**

**Dr. M.K.Iyer, Member**

**Date of Hearing: 26.11.2015**

**Date of Order : 03.05.2016**

**In the matter of**

Petition under Section 94(f) of the Act seeking review of the time period for implementing certain works pursuant to the Commission's order dated (i) 20.02.2014 in petition no. 146/MP/2013 with I.A. 36/2013 filed by SRLDC before Hon'ble CERC 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 CERC (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 ensuing security of the Southern Regional grid as well as the interconnected Indian Grid and (ii) 18.8.2015 in Petition Nos. 86/MP/2014 and 374/MP/2014.

**And**

**In the matter of**

Karnataka Power Corporation Limited  
No.82, Shakti Bhawan,  
Race Course Road,  
Bangaluru-560 001

..... **Petitioner**

**Following was present:**

Shri Vikas Mahendra, Advocate, KPTCL

**ORDER**

The petitioner, Karnataka Power Corporation Limited, has filed the present petition for seeking extension of time till 30.12.2016 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.”

3. Meanwhile, Karnataka Power Corporation Limited (KPCL) filed Petition No. 86/MP/2014 seeking extension of time for implementation of the Commission's order dated 20.2.2014 in Petition No. 146/MP/2013. In this petition, the petitioner, KPCL vide its affidavit dated 25.8.2014 requested for grant of additional time to comply with the directions in order dated 20.2.2014 in Petition No. 146/MP/2013. The Commission after consideration of the submission of the petitioner and SRLDC, vide order dated 18.8.2015 in Petition No. 86/MP/2014 granted time till 31.10.2015 and 31.12.2015 for completion of Phase-I and Phase-II of protection audit remarks respectively. Relevant portion of the said order dated 18.8.2015 is extracted as under:

“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.”

4. The petitioner has submitted that it came across several hurdles in the completion of Phase-I activities, including the following:

(a) The NIT was issued on 28.7.2014 for providing different make numerical relays for 220 kV lines of Gerusoppa, Kadra, Kudasalli and Varahi, due to legal hurdles

encountered during tendering process in respect of pre-qualification requirement, the tender was cancelled due to objection raised by the bidder and re-floated on 5.5.2015. Accordingly, LOA was issued on 8.10.2015.

(b) On 23/24.9.2013, NIT was issued for numerical relays for 220 kV lines of Sharavathy generating station. Due to constraints in e-portal of Karnataka Government to add the requirement of additional scope of work from project in the existing price schedules, the tender was cancelled and re-floated on 12.12.2013. Since, none of the bidders was satisfied with the PQR in Call-2, the tender was re-floated with modified PQR on 3.3 2014 and LOA was issued on 15.12.2014.

(c) On 15.9.2014, NIT was issued for procurement of Disturbance Recorder and GPS for Sharavathy generating station. Since, none of the bidders met the pre-qualification requirement, the tender was cancelled and re-floated on 4.2.2015 with modified PQR and LOA issued on 26.6.2015.

5. The petitioner has submitted that in respect of Phase II, NIT was issued on 20.2.2014 for procurement of hybrid type GIS CB for Bus Sectionalizer breaker at SGS. LOA issued on 12.12.2014. Since the work is retrofit in nature and due to space constraints for replacement of existing BOCB's, there was delay in the engineering stage at the firm's end to meet KPCL's technical requirement.

6. The petitioner has submitted that in view of the above hurdles, it could not complete certain works in Phase I and Phase II within the stipulated time period. The

petitioner has submitted the status of outstanding works of Phase-I and Phase-II and estimated time for their completion as under:

**Phase-I**

(a) Time synchronising of relays at 220 kV BTPS: The GPS has been received at the site. The erection work is under progress and is expected to be completed by 30.3.2016.

(b) Different type of Numerical Distance protection is to be provided as Main-II in place of static over current and E/F protection at Gerusoppa Dam Power House and replacing Main-1 Distance protection (SHPM101), which is not in service due to power supply module problem for Karwar 1 and 2 feeders at 220 kV Kadra (Gen): LOA was issued on 8.10.2015. As per the terms of supply contract, the supply has to be completed within 20 weeks from the date of the LOA. The erection and commissioning period is 2 weeks from the date of handing over of each line relay panel. There are 2 lines at Gerusoppa and 4 lines at Kadra. However, the erection works involve obtaining prior line clearance from the State Load Dispatch Centre and the work is expected to be completed by 30.12.2016.

(c) Replacing old electromagnetic relays with numerical relays at 220kV Raichur TPS: On 26.6.2015, work order was placed to Alstom T&D India Ltd., Chennai for retrofitting of relays for all 220 kV lines at Raichur TPS. However, the erection works involve obtaining prior line clearance from the State Load Dispatch Centre and the work is likely to be completed by 30.6.2016.

(d) Replacing feeders having same make and type relay as Mains I & II with different make and type relays and Replacing feeders having O/C and E/F relays as relays as Main-II with distance relays for good protection coordination on 220 kV Grid for 220kV Sharavathy SS (Gen): On 15.12.2014, LOA was issued to Alstom T&D India Ltd. Bengaluru. The materials have been received and erection work is in progress. However, the erection work involves obtaining prior lines clearance from the State Load Despatch Centre and the work is likely to be completed by 30.6.2016.

(e) Sub-station GPS to be connected to event logger and protection relays for correct recording of the sequence of events at 220 kV Sharavathy SS (Gen): NIT was issued on 15.9.2014. No bidders were found to be qualified. NIT was re-floated on 4.2.2015 and LOA was issued on 26.6.2015. The firm is preparing schematic drawings. As per the terms of the supply contract, the supply has to be completed within 20 weeks from date of LOA. Since erection and commissioning period is 8 weeks from the date of handing over of existing DR panels, work is expected to be completed by 30.12.2016.

(f) Replacing existing Electromechanical directional OCR & EFR relays with different type of, numerical distance relays, and time synchronisation of the distance relays with GPS, at 220 kV Varahi (VUGPH Hosangadi) (Gen): NIT was issued on 28.7.2014. However, due to objection raised by one of the bidders, the tender was cancelled and re-floated on 5.5.2015. LOA was issued on 8.10.2015. As per the terms of supply contract, the supply has to be

completed within 20 weeks from the date of the LOA. There are 5 lines at 220kV Varahi. Since, the erection work involves obtaining prior line clearance from the State Load Dispatch Centre which is likely to be completed by 30.12.2016.

(g) Keeping A/R Selection switch in-auto mode for all 400 kV line- at BTPS: The timers have been dispatched by the supplier. The software programming was completed during the previous shut down that was availed on the lines. One more shut down is required for uploading the settings and to modify wiring and enabling AIR function for 400kV lines. Since, the erection works involve obtaining prior line clearance from the State Load Dispatch Centre, the work is expected to be completed by 30.3.2016.

(h) Time synchronisation of all the relays and DR at 400 kV BTPS: GPS has been received at the site. The erection work is under progress and is expected to be completed by 30.3.2016.

(i) Keeping pole discrepancy relay setting at 0.1 sec for all the lines at 400kV BTPS: The timers have, been dispatched by the supplier and the work is expected to be completed by 30.03.2016.

(j) Extending DG set to 400 kV SS at RTPS: Dedicated panel erection has been completed. The laying of cable and commissioning work is in progress. The work is expected to be completed by 30.12.2015.

## Phase-II

(a) Commissioning of 220 kV bus coupler at 220 kV BTPS: KPCL has requested to BHEL to carry out the work at the earliest which was accepted by BHEL. Therefore, the work is expected to be completed by 30.6.2016.

(b) Providing CVTs at 220 kV Gerusoppa Dam Power House, Kadra, Kodasalli sub-station (Gen), Varahi (VUGPH Hosangadi) (Gen), Sharavathy sub-station (Gen) and Nagjhari Power House : NIT was issued on 19.7.2014. On 27.4.2015, the purchase orders were given to M/s Siemens Ltd, Chennai. The dispatch clearance has been issued for 51 units on 29.9.2015. The remaining 45 units are at the manufacturing stage. There are 36 line bays in total and the erection work shall take two weeks after handing over of a line bay. Since, the erection work involves obtaining prior line clearance from the State Load Dispatch Centre, it is likely to be completed by 30.12.2016.

(c) Replacing of 3 Core CTs with 5 Core CTs and separating the CT cores for Mains I and II at 220 kV Sharavathy sub-station (Gen), and for fixing the bus coupler and transfer bus at 220 kV Kadra (Gen) and 220 kV Kodasalli sub-station (Gen): NIT was issued on 23.7.2014. The purchase orders were placed on 27.4.2015 on M/s Alstom T&D India Ltd. Bengaluru for procurement of CTs. The drawings have been approved and the manufacturing clearance has been issued. Since, the erection work involves obtaining prior line clearance from the Load Dispatch Centre, the work is expected to be completed by 30.12.2016.



(d) Providing double earthing of all the supporting structures/elements and providing exclusive earthing for neutral of Generating Transformers and LAs at 220 kV Kodasalli sub-station (Gen): Since Kodasalli is a dam based project, double earthing of ODY structures in the existing concrete area of switchyard could not be assessed. The work order previously issued had to be cancelled and the NIT has been re-floated. The entire work is expected to be completed by 30.6.2016.

(e) New SF6 type circuit breakers to be replaced with outdoor type CTs on either side of the breaker in place of existing old BOCBs for Bus Sectionalizer Breaker at 220 kV Sharavathy sub-station (Gen): LOA was issued on 12.12.2014 to ABB India Ltd. Since, the work is retrofit in nature and due to space constraints for replacement of existing BOCB's, there was delay in the engineering stage at the firm's end to meet KPCL's technical requirement. Therefore, the manufacture clearance was eventually issued on 25.8.2015. There are two bays and the erection work may take 8 weeks after handing over of each bay. Since, the erection work involves obtaining prior line clearance from the State Load Dispatch Centre, the work is expected to be completed by 30.12.2016.

7. The petitioner has submitted that a revised Detailed Project Report (DPR) for Rs.26.93 crore for Modernisation and Upgradation of Control and Protection System of 110/220/400 kV KPCL generating stations was submitted for appraisal on

11.12.2014 to the National Load Despatch Centre (NLDC). On 15.12.2014, NLDC informed the petitioner that out of the proposed estimate of Rs. 26.93 crore, the appraisal committee had recommended only Rs.19.84 crore. The petitioner has submitted that Government of India, Ministry of Power, vide its letter dated 11.5.2015 informed the petitioner that the amount of Rs. 17.85 crore (90% of the sanctioned cost estimate) of has been sanctioned from PSDF subject to the condition that the works be completed within 24 months from the date of the sanction letter.

8. The petitioner has submitted that National Power Committee (NPC) in its second meeting held on 16.7.2013 decided that the States would immediately take up renovation and up-gradation of protection systems including switchgears at their sub-stations as mentioned in their respective DPRs without waiting for funds from the Central Government. As a consequence, the petitioner took early action to implement the recommendations of the Protection Audit, as detailed in the DPR submitted to NLDC for availing funds from PSDF. The petitioner has submitted that NLDC, vide its letter dated 29.7.2015 informed the petitioner that LOAs placed before approval of the scheme by the Monitoring Committee covered under DPR are not considered for funding under PSDF. Therefore, KPCL incurred an extra investment to the extent of Rs. 4.55 crore in taking early action for placing LOAs to comply with the recommendations of the Protection Audit, included in the DPR as per the directions of SRPC and NPC.

9. The petitioner has submitted that remaining activities in Phase-I and II are expected to be completed before 30.12.2016. However, it is seeking time for

completion of Phase-I and II activities up to 30.12.2016 due to unforeseen obstacles which may be encountered during project execution stages since the works are retrofit in nature and involve line clearance from the State Load Dispatch Centre.

10. Southern Regional Power Committee (SRPC), vide its letter dated 2.3.2016, has submitted the bi-annual report of the protection audit remarks of SR constituents. The status of protection audit remarks of the petitioner for the period from September, 2015 to February, 2016 is as under:

<b>S.No.</b>	<b>Name of Substation</b>	<b>Status of Implementation of Protection Audit Recommendations</b>
<b>Phase I</b>		
1	220 kV BTPS	Complied
2	220 kV Kadra(Gen)	Complied
3	220 kV Kodasalli sub-station (Gen)	Complied
4	220 kV Nagjhari Power House	Complied
5	220 kV Raichur TPS	Complied
6	220 kV Sharavathi sub-station (Gen)	<b>Out of 6 Remarks 3 are completed and 3 pending</b>
7	400 kV BTPS	<b>Out of 4 Remarks 3 are completed and 1 is pending</b>
8	400 kV Raichur TPS sub-station (IS)	<b>Out of 6 Remarks 5 are completed and 1 is pending</b>
<b>Phase-II</b>		
1	220 kV Kadra (Gen)	<b>Pending</b>
2	220 kV Kodasalli (Gen)	<b>Pending</b>
3	220 kV Nagjhari power House	<b>Out of 3 Remarks 1 is completed and 2 are pending</b>
4	220 kV Sharavathi sub-station (Gen)	<b>Out of 7 Remarks 3 are completed and 4 are pending</b>
5	220 kV BTPS	<b>Pending</b>
6	220 kV Gerusoppa Dam Power House	<b>Pending</b>
7	220 kV kadra (Gen)	<b>Out of 3 Remarks 2 are completed and 1 is pending</b>
8	220 kV Raichur TPS	<b>Pending</b>

9	400 kV Raichur TPS	Complied
10	220 kV Varahi (VUGPH Hosangadi ) (Gen)	<b>Pending</b>

**Analysis and decision:**

11. The petitioner has submitted that out of 33 observations of Third Party Protection Audit in Phase-I activities, 20 observation have been complied with and out of 20 observation for Phase-II activities, 6 observation have been complied with. The petitioner has submitted that due to unforeseen and unavoidable delays and hurdles in some of the works i.e. cancellation and re-floating of tenders, obtaining the required approvals from SLDC, etc., it could not complete the remaining activities. Perusal of SRPC Bi-Annual status report for the period September 2015 to February, 2016 reveals that out of 25 observations of Third Party Protection Audit in Phase-I activities, 20 observations have been complied with by the petitioner and 5 observations are still pending and out of 30 observations of Third Party Protection Audit in Phase-II activities, 11 observations have been complied with and 19 observations are pending.

12. The petitioner, vide order dated 18.8.2015 in Petition No. 86/MP/2014, was granted time up to 31.10.2015 and 31.12.2015 for completion of Phase-I and Phase-II of protection audit remarks. However, the petitioner did not complete the Phase-I and Phase-II despite enough time. We express our displeasure to the conduct of the petitioner for not taking appropriate steps to complete the entire work of Phase-I and Phase-II. The implementation of protection audit remarks is essential, not only to protect the equipment/isolate the faulty elements from the grid and avoid any major

grid incidents and but also to keep them in healthy condition for safe and secure operation of the grid.

13. The petitioner has submitted that due to unforeseen and unavoidable delays and hurdles in some of the works i.e. cancellation and re-floating of tenders, obtaining the required approvals from SLDC, etc., it could not complete the remaining activities. Taking note of difficulty projected by the petitioner, we allow time to the petitioner till 31.12.2016 as a last opportunity for completion of Phase-I and Phase-II of protection audit remarks. If the petitioner fails to comply with the order, it shall be liable for action under Section 142 of the Electricity Act, 2003 as already observed in our order dated 20.2.2014 in Petition No. 146/MP/2013.

14. We direct SRPC to submit status of protection audit remarks and monitor the status of completion of remarks of protection audit in respect of the petitioner in Protection Coordination Sub-Committee (PCSC) meetings. The petitioner is directed to file the 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 and Phase-II of protection audit remarks of the petitioner.

15. Petition No. 265/MP/2016 is disposed of in terms of the above.

**Sd/-**  
**(Dr. M.K.Iyer)**  
**Member**

**sd/-**  
**(A.S.Bakshi)**  
**Member**

**sd/-**  
**(A. K. Singhal)**  
**Member**