



KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Companies Act, 1956) CIN: U40100KL2011SGC027424

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Abstract

Kakkad HEP-Replacement/repair and Re-insulation of Stator coil of 25MW Unit # 1 Generator at Kakkad Power Station, Seethathode- Newly emerged works for revival of unit due to damages on account of major fire outbreak- waiver of tender and execution of work through M/s Shree Abirami Engineering Works, Chennai - ratified - Orders issued.

Corporate Office (SBU-G/E)

B.O (FTD) No. 277/2021 (DGE/G1/Kakkad/Unit #1/2021-22) Thiruvananthapuram. Dated: 30-04-2021

- Read:
- 1.Estimate Sanction vide order no. CEG/ AE2/Kakkad/ Replacement of Stator Coil U#1/ 2020- 21/654 dated 24.07.2020.
 - 2.Work Order no. EE-GDS/WO.62/2020-21 dated 12.08.2020 of the Executive Engineer, Generation Division Seethathode.
 - 3.Letter No.CEG/AE-II/Kakkad/Restoration of Unit #1/2021-22/58 dated 13-04-2021 of the Chief Engineer (Generation & PED).
 4. Note No.DGE/G1/Kakkad /Unit #1/2021-22 dated 15-4-2021 of the Director (GE&SCM) to the Full Time Directors (Agenda Item No. 48/4/21).

ORDER

The Chief Engineer (Generation & PED) as per letter read as 3rd paper above reported that the Unit#1 machine at Kakkad HEP had tripped on 13.07.2020 at 18.22 hrs with stator Earth Fault which resulted in development of major fire incident on the generator. The fire was completely extinguished by the fire & rescue team from Seethathode and Pathanamthitta necessitating pumping of water on generator unit for avoiding the situation of a major fire outbreak. During the preliminary inspection of the machine, four stator coils were seen faulty and the complete insulation of overhanging portion of the stator coils were damaged. The site inspection was carried out by the station authorities soon after the incident and in the restoration meeting convened by the Director (GE & SCM) on 14.07.2020, it was decided to initiate the restoration works immediately. The alarming water level and the unpredictable weather forecast also necessitated the urgent revival of the unit and it was decided to complete the work without lifting the rotor.

Accordingly an estimate amounting to Rs.39 lakhs was sanctioned by the Chief Engineer (Generation & PED) after collecting a budgetary offer from M/s Shree Abirami Engineering Works, Chennai for the urgent revival of the machine and the work was e-tendered on 24.07.2020. Two firms participated in the e- tender and the work was awarded to the lowest bidder M/s. Shree Abirami Engineering works at their lowest rate of Rs.36, 38,472/- including GST as per the Work Order read as 2nd above. The restoration works commenced on 13.08.2020 and upon completion of the dismantling of the end caps and debrazing of the top coils, and after isolation of the faulty identified coils, the Protection & Monitoring, Division, Moolamattom conducted the further testing of the stator coils. As per their test report, it was evident that the fault is of persistent nature and in order to locate the fault the PMD team advised to lift the rotor of the generator for further identification of fault locations of the stator coils. The PMD team also advised to conduct the ELCID Test with the assistance of M/s CPRI, Bangalore in order to identify whether any damages occurred to stator core. Based on the above recommendations, it was decided to conduct the ELCID test and to lift the rotor of the generator. The budgetary offers were collected from M/s Shree Abirami Engineering

Works, Chennai and M/s Rising Sun Enterprises for the work of lifting of rotor of the unit and the work was entrusted with M/s Shree Abirami Engineering Works, Chennai being the lowest offer for the work. The ELCID Test was conducted through M/s CPRI, Bangalore and reported that there are no damages to the stator core.

The detailed inspection was carried out while lifting of the rotor and as the work progressed, it was evident that the major fire outbreak has caused severe damages to the stator coil and water ferried from the hydrants of the fire and rescue team has considerably damaged the insulation levels of the stator coils. For reconditioning the damaged portions pulling out of all the coils from its slots were necessitated. This could be carried out only after debrazing of top and bottom coils. During the initial assessment, as the entire machine parts were wet due to the application of water for fire extinguishing, it was not possible to get a clear picture of the damages occurred to the machine parts/ windings. Also it was not possible to conduct any electrical tests for ascertaining the winding healthiness, since it was under wet condition. As the severity of the fault has been revealed upon, the following two options were available for the urgent restoration of the unit.

1. To short close the ongoing work and to go for re-tender incorporating all the arising works anticipated for the revival of the generator unit.
2. To obtain sanction from KSEBL, for the works necessitated for the total revival of the unit, to be carried out through the same contractor M/s Shree Abirami Engineering Works, Chennai at the negotiated rate.

Subsequently, it was decided to continue the work with the ongoing contractor M/s Shree Abirami Engineering Works, Chennai. The inevitable revival work includes debrazing, removal of burned insulation, cleaning, re-insulation, reassembly and brazing of stator coils. This revival works required the additional materials such as End Caps, Copper Ferrule, etc. for core and winding. As these materials were not available in the department store, a separate estimate was prepared for the procurement and made available for meeting the urgent replacement requirement.

The Chief Engineer (Generation & PED) reported that the estimate for stator coil repair/ replacement and re-insulation work of 25 MW generator of Unit #1 at Kakkad Power House amounts to Rs.38,75,120.00 (Rupees Thirty Eight Lakhs Seventy Five Thousand One Hundred and Twenty Only) including GST was prepared based on the negotiated offer of M/s Shree Abirami Engineering Works, Chennai.

The matter was placed before the Full Time Directors as per Note read above for ratification.

The Full Time Directors meeting held on 23-04-2021 noted that consequent to the fire accident on 13.7.2020 in Unit No.1 Generator of Kakkad Power House, the Chief Engineer (Generation & PED) invited e-tender for the urgent revival of the machine and awarded the work to M/s. Shree Abirami Engineering Works, Chennai at the lowest rate of Rs.36,38,472/-. Further it was decided to conduct the ELCID Test and to lift the rotor of the generator. The ELCID Test was done by M/s. CPRI and observed that there are no damages to the Stator Core. After lifting the rotor and on detailed inspection, it was noted that the damages to the coil were severe and Chief Engineer (Generation & PED) prepared an estimate of Rs.38,75,120/- for the revival of the Unit based on the negotiated offer of the existing contractor, M/s. Shree Abirami Engineering Works, Chennai. The Chief Engineer explained the necessity of continuing the work through the present contractor through limited quotation by waiver of tender calls and also decided to continue the work by the present contractor citing justification that :

1. The ongoing works being awarded to M/s. Shree Abirami Engineering Works, Chennai and the newly emerged works being necessary and unavoidable for the satisfactory running of the machine.
2. M/s. Shree Abirami Engineering Works, Chennai has mobilized the required machinery and man power for the execution of the work and short closing at an intermittent stage will result in undue delay in assessment and completing the work.
3. Retendering at this juncture shall be time consuming and involvement of multiple agencies (in case of another agency qualifying on tender for remaining works) for the execution of work shall further delay the completion of the work.

4. To avoid huge generation loss at Kakkad and consequent huge generation loss at Moozhiyar, it will be in best interest to carry out the works by M/s. Shree Abirami Engineering Works, Chennai.

The Full Time Directors also observed that the Chief Engineer (Generation & PED) should have taken the decision only after taking approval of the competent authority as per delegation of powers. The matter has been escalated to the Board only on April 2021 ie. after a gap of 9 months which is not justifiable. However the machine has been brought back to service on 25.02.2021. At this point of time the Board has no other option than to accept the proposal of the Chief Engineer (Generation & PED) by exercising the delegation of powers available to the Board. Therefore without going into the details of estimate and the reasonableness of rates and after considering all the above factors, the Board decided to ratify the action of Chief Engineer (Generation & PED) to arrange the work of replacement / repair and reinstallation of Stator Coil through limited quotation by waiver of tender calls subject to the following conditions :

- i) The reasonableness of rate shall be meticulously verified and certified by Director (Generation-Electrical) and Chief Engineer (Generation & PED).
- ii) The conditions for ensuring quality and warranty shall be incorporated in the Agreement.
- iii) The payment shall be released only after completion of all statutory tests as per agreement and CEA guidelines/standards in this regard.

Orders are issued accordingly.

By Order of the Full Time Directors,
Sd/-
Lekha G
Company Secretary (In charge)

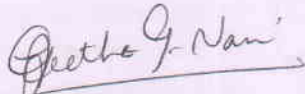
To

The Chief Engineer (Generation & PED), Moolamattom.
The Deputy Chief Engineer ,Generation Circle, Moozhiyar.

Copy to:

The Financial Advisor/ The Chief Internal Auditor/The Company Secretary.
The Deputy Chief Engineer (IT)/ The RCAO/The RAO.
The TA to {Chairman & MD/ Director (GE&SCM)/ Director(GC)/ Director (Trans.& SO)/ Director (D,IT&HRM) /Director (Planning, Safety & REES)}
The PA to Director (Finance).

Forwarded / By Order


Asst. Exe. Engineer

DESPATCHED

No. 39
Date 05.05.21