



KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Companies Act, 1956)

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Abstract

Pallivasal Extension Scheme (2X30MW) – Pallivasal HEP– Replacement / Rectification of old and deteriorated penstocks I & II –To Keep in abeyance – Sanctioned -Orders issued.

Corporate Office(SBU-G/C)

BO(FTD)No. 672/2019 (DGC/AEE V/PVL-Penstock/2019) Thiruvananthapuram

Dated: 5 .09.2019

- Read:
1. BO (FTD) No.1973/2018(DGE/G3/Pallivasal-Penstock/2018-19) dated 6.12.2018.
 2. Letter No. DB-6/Old Penstock/PES/DIVN II/19-20/65 dated 26.6.2019 of the Executive Engineer, PES(Surge, Penstock & Power House Division) addressed to the Deputy Chief Engineer, Generation Circle, Meencut .
 3. Minutes of meeting held at the chamber of Director(CP,GE,SCM & S) on 8.8.2019 regarding repair/replacement of penstock pipe I & II of Pallivasal HE Project.
 4. Note No. DGC/AEE V/PVL-Penstock/2019 dated 20.8.2019 of the Director (GC & HRM) to the Full Time Directors.(Agenda 1/9/19)

ORDER

The Pallivasal Power Station is the oldest Power station in operation in Kerala. The first stage installations were completed by 1940 and it become full fledged by 1952 with total installed capacity of 37.5MW. The machines of existing Pallivasal power house have been renovated as part of PPSHUP and renovation works completed during 2001-02 period. Renovation works were carried only for power house machineries and equipments and no civil and hydro mechanical parts replaced or renovated as part of renovation. There are four penstocks at Pallivasal HEP, first two supplies water to units #1 & #2 and the rest two penstocks are bifurcated to feed units #3 & #4 and #5 & #6 units respectively.

It is reported that the extent of corrosion corresponding to all the penstocks especially that of penstocks No. I & II, at some locations are very critical and necessitates urgent rectification works. As the condition is more severe for penstocks I & II, both the penstocks are kept closed and the feeding machines, units #1 & #2 are under shutdown w.e.f 16.11.2018.

KSEBL as per B.O read as 1st paper above has accorded sanction for the immediate rectification works /partial replacement of the old and deteriorated penstocks I & II of Pallivasal HEP and also authorized the PES Division No.II under Civil Circle, Meencut for arranging inspection of the penstock pipes by an experienced technical team and for

arranging the rectification / replacement works on the basis of the report of the inspection.

Accordingly the Deputy Chief Engineer, Generation Circle, Meencut has arranged the thickness survey and ultrasonic scanning of penstock pipe No.1 and 2 from Valve house to Power House. A detailed report was submitted by the Executive Engineer, PES, Division No. II, Meencut as per letter read as 2nd paper above. The minimum thickness required for penstock pipes with the existing penstock steel is 9 mm and during detailed ultrasonic scanning test it was found that most of these pipes are unsuitable for reuse.

As per the report the total number of pipes required for line I is 434, including short pipes, and only 32 are available for reuse. In addition to this the selected pipes are to be hauled to the initial reaches of the penstock line. The hauling distance varies from 1200m to 2100m which is also a time consuming and costly effort.

It is also reported that there is no advantage in using old pipes and has the following major disadvantages.

- Reduced C/S area available for water flow which affects the efficiency of the turbine.
- Not advisable on cost wise analysis and time requirements.
- Less life span compared to new penstock line.

Considering the above facts the Executive Engineer, PES suggested that it is beneficial to replace all the existing pipes with new steel penstocks than replacing them with the existing old pipes. It is also reported that the approximate financial commitment for replacing one line is Rs 15 crore excluding cost for anchor blocks.

The Director (CP,GE,SCM & S) conducted a meeting on 8.8.2019 regarding repair/replacement of penstock pipe I & II of Pallivasal HEP and in the meeting it was observed that total number of reusable penstock pipes is less than 10% and work is laborious and also time consuming and life span of the reused penstock pipes cannot be ensured. Even if KSEBL takes a decision to replace the old penstock pipes at a cost of Rs15 Crore for one line or Rs 30 crore for two lines it would take about two years for completion of the work and once the PES is completed, the replaced penstock would be of no use. Considering these aspects and that the Pallivasal Extension Scheme envisages replacement of entire water conductor system it was recommended that replacement of existing penstock pipes need not be carried out as this additional investment is not justifiable.

The matter was placed before the Full Time Directors in the meeting held on 3/9/2019 as per note read as 4th paper above.

Having considered the matter in detail, the Full Time Directors Resolved to accord sanction to keep in abeyance the rectification works/ partial replacement of the old and deteriorated Penstocks I & II of Pallivasal HEP as per BO (FTD) No. 1973/2018(DGE/G3/Pallivasal-Penstock/2018-19) dated 6.12.2018, for the time being, taking into account the fact that it would take nearly two years for completion of the replacement work of the old penstocks and the replaced penstock would be of no use

when Pallivasal Extension Scheme is completed as PES envisages replacement of entire water conductor system to the existing power house.

Further resolved that the above decision has to be communicated to the Government in Home and Power Departments and also to place the decision before the Board of Directors of KSEBL.

Orders are issued accordingly..

By Order of the Full Time Directors,

Sd/-

LEKHA G.

COMPANY SECRETARY IN CHARGE

To

The Deputy Chief Engineer & Project Manager (PES) with F/P of Chief Engineer .

Copy to:

The Chief Internal Auditor/ Financial Adviser

The Chief Engineer (IT)

The RCAO/The RAO

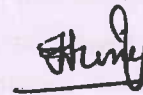
The TA to Chairman&MD/Director (GC)/ Director (D, IT & HRM),

Director (T, SO& S) /Director (GE & SCM)

The PA to Director (Finance) / Company Secretary

The Legal Liaison Officer, KSE Board Ltd., Kochi

Forwarded / By Order



Assistant Executive Engineer