



KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Companies Act, 1956)

CIN:U40100KL2011SGC027424

Reg. Office:Vydyuthi Bhavanam, Pattom, Thiruvananthapuram – 695004, Kerala

Tel:+914712448720 Email: dgkseb@kseb.in

Web site: www.kseb.in

ABSTRACT

Desiltation of Kallarkutty Reservoir – Estimation of quantity of the components in the sediments deposited in Kallarkutty reservoir after collecting, analyzing & classifying representative samples from reservoir bed– proposal from NIT Calicut –sanctioned -orders issued .

CORPORATE OFFICE (SBU-G/C)

BO(FTD)No.597/2021(DGC/AEE-II/Desiltation/2015)Thiruvananthapuram, dtd 11 .08.2021

Read

1. G.O.(Ms) No. 79/2017/WRD dated 26.09.2017
2. GO (Ms) No. 14/2019/WRD dated 14.05.2019
3. Minutes of the meeting convened by the Secretary (Power), Government of Kerala on 31.05.2021.
4. BO (FTD)No. 449/2021 (DGC/AEE II/Desiltation/2015) dated 17.06.2021
5. Letter No. CE (C-DS)81/Desiltation/2020-21 dated 19.06.2021
6. Letter No. CED/CONS/HoD/2021/07/01 of NIT dated 13.07.2021
7. Letter No. CED/CONS/HoD/2021/07/02 of NIT dated 14.07.2021
8. Letter No. CE (C-DS)81/Desiltation/2020-21 dated 14.07.2021
9. Note No.DGC/AEE-II/Desiltation/2015 dated 22.07.2021 of the Director(Generation-Civil)(Agenda Item No.45/8/2021)

ORDER

Majority of the dams of KSEBL had been constructed 4-5 decades ago. Ageing, naturally affect the safety and operational performance of dam projects, due to various reasons including the deposition of sediments in the reservoirs. The Sedimentation in the reservoirs lead to reduction in their storage capacity and impairs the smooth flow through lower level outlets. Sediment deposited in the reservoirs is to be assessed and desiltation shall be carried out based on the requirements, at desired intervals to restore the original capacity.

In the meeting convened by the Secretary (Power), Government of Kerala, held on 31.05.2021, to review the status of readiness of Dam Safety Wing for the smooth and effective operation of reservoirs of KSEBL for 2021, as per the Minutes of the Meeting read as 3rd above, the necessity and importance of carrying out the desiltation of reservoirs of KSEBL was stressed to restore their original capacity within a definite time frame.

The storage capacity of some of the selected reservoirs of KSEBL were assessed recently. The assessment revealed that the Annual Storage Loss (ASL) of Kallarkutty reservoir was 0.7%, which is the highest among all. According to the categorization of sediment induced problems based on ASL, as per the 'Handbook for Assessing and Managing Reservoir

Sedimentation' published by the Central Water Commission, Kallarkutty reservoir falls under the category 'HIGH'. Considering this, it was decided to initiate the desiltation process of Kallarkutty reservoir as per the B. O. read as 4th above.

The pre-activities for inviting bid for the desiltation of reservoirs as per the Standard Operating Procedure (SOP) published by the Government of Kerala, as per order read as 1st and 2nd above include; estimation of quantity of deposited sediment in a reservoir, estimation of quantity of components in the deposited sediments, preparation of Environment Management Plan (EMP) by a nationally accredited agency, preparation of detailed project report (DPR) etc.

For Kallarkutty reservoir, estimation of quantity of deposited sediment is already completed and the next activity to be carried out is estimation of quantity of components in the deposited sediments after collecting core samples, analyzing & classifying it as per standard procedures.

The revised SOP published by the Government of Kerala for desiltation of reservoirs, read as 2nd above, list out the agencies through which the above task shall be carried out. This list includes Government Engineering Colleges, KHRI etc. In the draft SOP prepared for desiltation of KSEBL reservoirs, as per clause 2.2, Govt. Engineering Colleges, NCESS, KHRI, KERI, IIT Palakkad, NIT Kozhikode etc. are included as agencies for sampling, analysis and classification of deposited sediments and estimation of quantity of each component of deposited sediments.

Accordingly, a proposal was requested as per letter read as 5th above. for collecting, analyzing & classifying the sediment deposits in the bed of Kallarkutty reservoir and to arrive at the volume of each component from NIT Kozhikode, a premier Academic & Research Institution under Government of India. Further, NIT is also an institution identified by the CWC for taking specific consultancy assignments under Dam Rehabilitation and Improvement Project (DRIP).

NIT Calicut has submitted a detailed proposal as per the letter read as 6th above. In their proposal, two options were included. In the first option, it is proposed to collect sediment samples from the reservoir bed on a 50m x 50m grid. As per this option, estimation of the various size fractions in the sediment deposited on the reservoir bed would be performed using the point data obtained from analysis of the core sediment samples collected on a 50m x 50m grid. The estimated amount for Option 1 is Rs 1,08,56,000/- (One Crore Eight Lakh and Fifty-Six Thousand only) plus GST.

In the second option, it is proposed to collect sediment samples from the reservoir bed on a 100m x 100m grid and perform sub-bottom profiling on a 50m x 50m grid. Estimation of various size fractions in the sediment deposited on the reservoir bed will be performed using the data obtained from the particle size analysis and sub-bottom profiling.

In the original SOP published by the Government of Kerala, read as 1st above, it is stated that core samples shall be collected one each at the center of grid of size 50m x 50m. The revised SOP published by the Government of Kerala, read as 2nd above, specifies that the grid size for estimation of quantity and composition of sediment shall be from 50m x 50m

to 200m x 200m. NIT, in their proposal, states that grid of 100m x 100m is in conformity with the Guidelines under the Mineral Conservation and Development Rules (MCDR) for the United Nations Framework Classification (UNFC) of Mineral Reserves/ Resources for tabular and strata bound deposits. Hence it is recommended to accept Option 2 of the proposal from NIT in accordance of the terms and condition specified in their proposal.

The estimated amount for Option 2 is Rs 67,84,000/- (Rupees Sixty-Seven Lakh and Eighty-Four Thousand only) plus GST.

NIT Calicut has been requested to submit their rock bottom rate for the above work and NIT Calicut has submitted their revised proposal as per the letter read as 7th above . As per the revised proposal, they offered an amount of Rs 66,84,000/- (Rupees Sixty-Six Lakh and Eighty-Four Thousand only) plus GST for option 2. Accordingly, the Chief Engineer(Civil-DS&DRIP) has requested sanction to award the contract to NIT,Calicut for an amount of Rs 66,84,000/- (Rupees Sixty Six Lakh and Eighty Four Thousand only) plus GST in accordance with the terms and conditions specified in their proposal.

The matter was placed before the Full Time Directors as per note read as 9th above. Having considered the matter in detail, the Full Time Directors in the meeting held on 04.08.2021 resolved to accord sanction to award the work of 'Estimation of quantity of the components in the sediments deposited in Kallarkutty reservoir after collecting, analyzing & classifying representative samples from reservoir bed' to National Institute of Technology, Calicut at their reduced offer amounting to Rs 66,84,000/- (Rupees Sixty-Six Lakh and Eighty-Four Thousand only) plus GST as per the terms and conditions specified in their proposal.

Orders are issued accordingly.

By Order of the Full Time Directors

Sd/-

Lekha.G

Company Secretary i/c

To

The Chief Engineer(Civil- Dam Safety & DRIP)

Copy to:

1. The Financial Adviser
2. The Chief Internal Auditor
3. The Deputy Chief Engineer (Research & Dam Safety Organisation), Pallom
4. The RCAO/RAO
5. The Deputy Chief Engineer(IT)
6. TA to CMD /TA to [Dir(GC) /Dir(GE&SCM) /Dir(T&SO) / Dir(D&HRM)/Dir(Plg&S)]
7. PA to [Dir (F) / Company Secretary i/c/Secretary(Administration)]
8. FC Supt/ Librarian
9. Stock file / File

Forwarded / By Order



Assistant Executive Engineer