
Terms of reference for recruitment of consultant to carry out the feasibility study for desilting of Nyabarongo DAM reservoir

1. Background

Nyabarongo Power Station is a hydropower plant in Rwanda, completed in October 2014, with a commissioning date in November 2014. The installed capacity is 28 MW with two Francis turbine 14MW each. The project involves a dam, with run of river design, across Nyabarongo River and the plant is in Mushishiro, Muhanga district in Rwanda's Southern Province. The project, undertaken by Angelique International Limited & "Bharat Heavy Electricals Limited" of India, is the largest hydropower installation in Rwanda, to date. Part of the engineering work was also subcontracted to the Australian company Snowy Mountains Engineering Corporation (SMEC). Both the units were synchronized to the Rwandan grid on 27 October 2014 and 30 October 2014.

A look at the dam indicates that sediments were progressively accumulated in the reservoir. These sediments come along with water and it is expected that they will keep coming in the dam.

2. Objectives

The Contractor will be engaged in providing expert advisory services for Nyabarongo HPP reservoir sedimentation handling and management.

3. Scope of the assignment, duties and responsibilities

The Contractor will engage qualified professionals in the above process and he is expected to:

- a. Make bed level profile of the river along the reservoir in the current year
- b. With the help of data found along the river, the available documents and the collected information, make the bed level profile of the river along the reservoir right after the construction of the dam,
- c. Estimate the current volume of sediments in the Nyabarongo dam
- d. Determine the source, type, chemistry and the speed of the sediments accumulation

- e. Evaluate the impact of sediments on the dam body in terms of strength as well as on the power plant machinery.
- f. Make a removal and disposal plan
- g. Make the safety plan of the Dam against sediments
- h. Elaborate a tender document for removal and disposal of sediments from the dam.

4. The duration of the assignment

It is expected that the work described in the above scope will be completed within 2 months.

5. Methodology to be used to carry out the assignment

The bidder will describe in his proposal the methodology that he intend to use in order to carry out and complete the work.

6. Detail outputs

1. Inception report

This includes the methodology and techniques to be used and work timeframe. The inception report is provided within two weeks from the date of contract signature.

2. The progress report indicating the following will be submitted:

- Source, type, chemistry and the speed of the sediment's accumulation
- The quantity of sediment already in accumulated in the Dam
- Impact of sediments on the dam
- Removal and disposal plan of sediments
- Safety plan of the Dam against sediments

3. Tender document for removal and disposal of sediments from the dam.

7. General experience of the firm and important aspects of the project to be focused

It is suggested that this assignment be undertaken by a firm rather than an individual. The assigned team should ideally be comprised of established individuals within their field of specialization.

The firm should have a proven experience with at least three good completion certificates in similar assignment.



8. Competencies and qualification of the key staff to be provided for each area of expertise identified

The team leader should have:

- University degree in hydrology, water engineering or in any related field and having good experience of working in this sector.
- Minimum 10 years of experience out of which 5 are directly related to the field of assignment
- Fluency in English both oral and written
- Competence in relevant report writing

The team should at least be composed of:

- Two hydrologist or water engineers/marine or submarine engineer or in any related field engineer with more than 5 years
- One civil/structure engineer with more than 10 years of experience
- Environmentalist specialist with at least five years

The team members should have at least Bachelor's degree in the field of specialization and have good experience

9. List any services and surveys necessary to carry out the assignments

All the materials, equipment and tools that are required for entire assignment will be arranged by the contractor.

10. Services, facilities and counterpart staff to be provided by EUCL

The client will provide available documentation and this will be solely used for the purpose of the works as described in these terms of reference.

EUCL will give the contractor access to the infrastructure that need to be visited for good completion of assignment

11. Reporting arrangement and overall coordination

The contractor is required to consult existing sources of information, reports, assessments and where necessary clarify or update these pre-existing documents.

The contractor will be reporting to the managing director of EUCL. The contractor will work under direct supervision of the director of generation. The supervisor will have frequent interactions with the contractor at various stages to brief the contractor on the situation/assignment; agree on the



process and clarify the deliverables; provide feedback and comments on intermediary products; and track the progress made by the contractor. The supervisor will evaluate the contractor's work and certify delivery of work.