

NATIONAL INSTITUTE OF HYDROLOGY  
(A Govt. of India Society under Ministry of Water Resources  
River Development & Ganga Rejuvenation)  
JALVIGYAN BHAWAN, ROORKEE

NO. 5(IX)/2018-Pur-3

DATED: 06.07.2018

**NOTICE INVITING TENDER**

Director, National Institute of Hydrology, Roorkee, India invites *Sealed Bid* in two bid form (Technical and Financial) from reputed firms /manufactures in India to carry out the contract work for river cross section survey work in reaches of Kali river and Kadra reservoir in Karwar District, Karnataka as follows:

Sl. NO.	Particulars of item	Qty.	EMD (Rs.)
1.	<b>River Cross Section Survey work in Kali River and Kadra Reservoir in Karwar District, Karnataka</b>	<b>Cross sections survey in portion of Kali River and Kadra reservoir, details for the reach of Kali River is given in Annexure-I</b>	<b>Rs.6,000/-</b>

1. The tender document containing specifications of work, terms and conditions, etc. can be obtained from the Purchase Section (Admn), National Institute of Hydrology, Roorkee on payment of Rs.590/- (Rs. Five hundred ninety only) (non-refundable) in the form of crossed Demand Draft/pay order in favour of National Institute of Hydrology, Roorkee, payable at Roorkee.
2. The tender document can also be downloaded from our Website [www.nihroorkee.gov.in](http://www.nihroorkee.gov.in). However, the demand draft towards the cost of tender document as prescribed above will have to be enclosed along with the tender document while submitting the same. In case the offer is not accompanied with the valid demand draft for the cost of the tender document as detailed above, the tender will be rejected.
3. In case the date of opening is declared holiday on any account the said date shall be substituted by the next working day.
4. The National Institute of Hydrology reserves the right to either cancel the tender or reject any or all the tenders without assigning any reason thereof.
5. Tenders complete in all respects should be deposited in the **Tender Box** kept in the Purchase Section (Administration), National Institute of Hydrology, Jal Vigyan Bhawan Roorkee 247 667.

<b>LAST DATE &amp; TIME FOR SUBMISSION OF BID WILL BE</b>	<b>03.08.2018 at 1500 Hours</b>
<b>DATE/TIME OF OPENING OF BIDS WILL BE</b>	<b>03.08.2018 at 1630 Hours</b>
<b>VENUE OF BID OPENING AT NIH, ROORKEE</b>	<b>OFFICE ROOM OF CHAIRMAN, TENDER OPENING COMMITTEE, NIH, ROORKEE</b>

**PLEASE NOTE: Please strictly adhere to the dates/times mentioned in this document.**

6. The Bids will be **opened** in the presence of representatives of tenderers, if any. Request for postponement will not be entertained. Fax/e-mail bids may not be accepted. Late/Delayed tenders shall not be opened.

PURCHASE OFFICER

# TENDER DOCUMENT

**NAME OF THE PROJECT: FLOOD STUDIES FOR KAIGA NPP SITE  
(STAGE 5 & 6) AT KAIGA**

**NAME OF THE WORK : RIVER CROSS SECTION SURVEY WORK IN  
KALI RIVER AS PER SITE.**



**NATIONAL INSTITUTE OF HYDROLOGY  
ROORKEE – 247 667  
UTTARAKHAND  
JULY, 2018**

## **TERMS OF REFERENCE AND INSTRUCTION TO BIDDERS**

### **1.0 INTRODUCTION**

The consultancy project “Studies for estimation of design basis flood and safe grade elevation for the inland nuclear power plant site at Kaiga in Karwar district of Karnataka state (near Kadra dam)”, has been awarded to NIH by NPCIL, Mumbai. This study requires the river cross sections of Kali river and Kadra reservoir in the study reach as given in Annexure-I. Thus, National Institute of Hydrology intend to undertake the work of river cross sections survey in Kali River and Kadra reservoir at selected locations in Karwar district of Karnataka.

### **DESCRIPTION OF WORK.**

#### **RIVER CROSS SECTION SURVEY WORK IN KALI RIVER AND KADRA RESERVOIR AS PER SITE DETAILS**

#### **SITE CONDITIONS**

River Cross-section survey in Kali river downstream of Supa dam and primarily below the Kodalali dam in the water spread area of Kadra reservoir. The mountainous river valley is in general V-shaped in study reach with series of reservoir. The details of river system is shown in Annexure I.

#### **General Information about Site**

The proposed location for river cross section survey work and for reaches of Kali River is given in Annexure –I. The width of river in valley portion is in general less than 1 km while in water spread area of Kadra reservoir is less than 4 km.

#### **Responsibilities of National Institute of Hydrology Roorkee.**

- To provided site plan of the proposed location of cross section for Kali River.
- Other drawings available with NIH.

### **INSTRUCTIONS TO BIDDERS**

1. The tender shall be submitted in two parts:

- Part – I: Technical Proposal
- Part – II: Financial Proposal

Each of the above mentioned two parts shall be sealed in separate envelopes duly super scribing Part – I (Technical Proposal) and Part – II (Financial Proposal) on the respective envelopes. The two envelopes shall be put under one sealed cover duly super scribing the name of the project and name of the work before submission.

2. The bidder shall submit the following information in the Technical Proposal:

- i. Organization Profile along with audited financial reports of last 3 years
  - ii. List of similar works undertaken (both completed and ongoing) along with the area/line km, cost and time schedule
  - iii. List of equipment available along with their specification and present deployment
  - iv. Detailed methodology, along with equipment (including their specification) proposed for these works project.
  - v. The bidder is required to submit the names and bio-data of all the technical personnel proposed to be deployed for the work together with the estimated man-month effort expected to be contributed by each person.
  - vi. An undertaking that financial proposal does not contain any condition (s).
  - vii. Deviations if any shall be mentioned in the technical proposal itself. Deviations (if any) with respect to items/facilities/financial etc. should be brought out clearly in form of BOQ. The bidder shall enclose a copy of this BOQ without rates and cost (including additional items if any) along with the technical proposal duly signed in token of having read the tender documents.
3. The bidder shall submit cost including all taxes as applicable in the financial bid. The cost for survey of each cross-section should also be quoted as the number of cross-section to be surveyed in the river portion and Kadra reservoir portion are limited to 8 and 20, respectively.
  4. The bidders are advised to undertake at their discretion a reconnaissance of The site at their cost, to familiarize themselves with the site conditions before Preparing the bid
  5. Your tender should reach us at our NIH office by 03.08.2018 **by 1500 hrs.** in the office of purchase officer, NIH shall not be responsible for any delay in receipt of the tender. Late tenders shall not be considered. NIH reserves the right to reject any or all the tenders, without assigning any reasons thereof. The technical bids shall be opened on the 03.08.2018 at 1630 hours.

## **GENERAL TERMS AND CONDITIONS**

1. The bidder shall make their own arrangement for boarding, lodging, travel, transportation of survey equipment, boat/launch, labourers, local transport etc. required for this work and shall include cost in their offer.
2. Time period for the work – Thirty days from the date of award of the work.
3. The successful bidder shall sign an agreement on non-judicial stamp paper of Rs. 100/- before commencement of the work.
4. **The bidder shall submit an EMD of Rs. 6,000/- in favour of National Institute of Hydrology, payable at Roorkee in the form of D.D. from a scheduled Bank along with the bid.**
5. Permission/authorization: It shall be the responsibility of the contractor to seek and obtain, well in time, necessary permission of authorization from concerned local or other offices and/or individual property owners etc. to approach, enter, measure, level, place instruments

and equipment etc. as may be required to carry out the survey work. However, necessary authorization and assistance in getting permission may be extended by NIH at its discretion.

6. Supervision: The contractor shall provide at all times access to and facilitate inspection and supervision of the works and records for the authorized personnel/scientist of NIH.
7. Responsibilities of the bidder: The bidders shall be solely responsible for following sound technical and other methods and practices of river cross section work, accuracy of the equipment, and field work. River cross-section survey work will be conducted as per the site plans and will have to perform as per directions of the scientist of NIH.
8. Incomplete tender or tender received after the last date shall not be considered under any circumstances.

### **Financial Conditions**

1. The bill of quantities is only indicative in order to arrive at the total contract value. The payment shall be made as per actual quantities at the rates accepted by NIH.
2. The Payment towards carrying out various items of works as detailed shall be made to the successful bidder in the following manner:
  - (a) 100% of contract value on completion of the field works in all respects and submission of report along with data, drawing etc. and acceptance by NIH.
3. In the event of any dispute, the decision of the DIRECTOR, NIH shall be final & binding. The venue of the arbitration shall be at local court, Roorkee.
4. NIH reserves the right to reject any one or all the tenders without assigning any reason thereof.
5. The bidder will have to quote the rates for aforesaid for river cross section work as per their respective sites inclusive of all taxes/service tax. No extra payment will be entertained by NIH in respect of any claim whatsoever in the same case.
6. The bidder shall comply with proper and legal orders and directions of the local or public authority or municipality and abide by their rules and regulations and pay all fees and charges, which may be liable. The bidder shall bear all incidental charges carriages, storage and safe custody of materials to be used for conducting the cross section works of respective rivers.

### **SPECIAL CONDITIONS OF CONTRACT**

1. The firm should carryout works of Land Survey/ Datum transfer using total station with accuracy of < 1 mm and within water survey using GPS/DGPS enables dual frequency echosounder with accuracy of 0-2.5 cm in depth range of 0-40 m.
2. The firm should have experience in carrying out the survey work in reservoir area of dam and rivers in hilly topography.
2. The survey details for reach of Kali river is attached as Annexure I.

3. The bidder shall nominate one person for liaisoning with NIH personnel in connection with the work.
4. NIH may, at its discretion, award total or part of the work depending upon their technical capabilities and financial offers and fund availability with NIH.
5. The bidder shall be solely responsible for the safety; loss, theft, and breakdown etc. of their equipment and safety of the manpower and shall get the same appropriately insured.
6. NIH shall deduct taxes at source, demand draft charges etc. as may be applicable and shall provide a certificate to this effect.
7. The survey details/data collected shall not be passed on to any other person or organization or used anywhere else by the contractor without the prior permission of NIH.

## **SCOPE OF WORK AND SPECIFICATIONS**

### **Work of river Cross-sections for Kali river.**

#### **Brief Scope of Work**

1. The scope of work has been described in Annexure I of survey details of the Kali river.
2. Preparation and supply of charts and survey reports in hard copies as well in digital form in excel spread sheet and Autocad drawings. The excel sheet would contain X (distance from left/right bank) and Z (bottom elevation MSL) and the geographical/ UTM-43N coordinates of both banks.
3. To provide any clarifications/justification required by client during the acceptance of report for the work carried out by the bidders.

#### **Technical Specifications**

##### **Establishment of Bench Mark**

The levels shall be on the basis of GTS benchmarks in the vicinity. The contractor shall transfer the benchmark to the site. All levels shall be related to MSL. New Benchmark on river bank shall be established as per site requirement for various river cross sections to be surveyed either on existing abutments, jetties or other monoliths, which shall meet the stability requirement for benchmarks specified by Survey of India. Alternatively new benchmark of suitable type shall be built to survey of India standards. Value of benchmarks shall be established to accuracy better than +/-5 millimeters.

##### **Establishment of Horizontal control and marking the selected points**

Horizontal control established shall be properly connected to nearby G.T.S. or other points approved by scientist.

##### **Establishment of Vertical Control**

The vertical control shall be established with suitable water level gauges and/or GTS Bench Marks within or near the survey area to reduce the soundings to a recoverable or approved Chart Datum (C.D.).

### **Carrying out Soundings**

The sounding data shall be recorded and reported at an interval of 10 m interval at the marked cross section site across the river. Soundings shall be carried out using suitable equipment, which yield accuracy of +0.025 m or better. Relevant environmental parameters, which effect accuracy of echo sounding, shall be measured regularly and appropriate correction shall be applied. 'Bar Checks' shall be carried out daily before commencement and after completion of days work. Bar Check equipment/tackle and its calibration shall be got approved from scientist.

### **Position Fixing**

The contractor would use the DGPS enabled sounding instrument to determine the position of points to be surveyed. While taking soundings vessel shall be moved at a slow speed (not greater than 3 knots).



**Derivable**

1. Survey report along with excel sheet containing geographical/ UTM-43N coordinate of permanent marks for river banks. The X, Z coordinates for river cross-sections.
2. The AutoCAD drawings for river cross sections.
3. Photographs and videos are to be made during the survey work and to be submitted in soft copy (DVD). Photographs of important locations in and around the project site are also to be included in the survey reports.

### Schedule - 'A'

**NAME OF WORK: Carrying out cross sectional survey works at about 28 section in Kali river in Karwar district of Karnataka state.**

Sl No.	Detail of Works	No of Cross-section	Rate		Total Amount Rs.
			In Figures	In words	
1.	<b>Annexure-I</b> (i) Cross-Section Survey for the reach of Kali River (ii) Cross-Section Survey in the Kadra reservoir	8 20			

We agree to execute the above work in accordance with the technical specifications and terms and conditions mentioned in this tender documents for a total contract price of Rs.....(Rupees.....) within the period specified in the invitation for tender.

Date

Name & Signature of the Authorized Signatory

## **Annexure - I**

### **Cross-section Survey Details for Kali River**

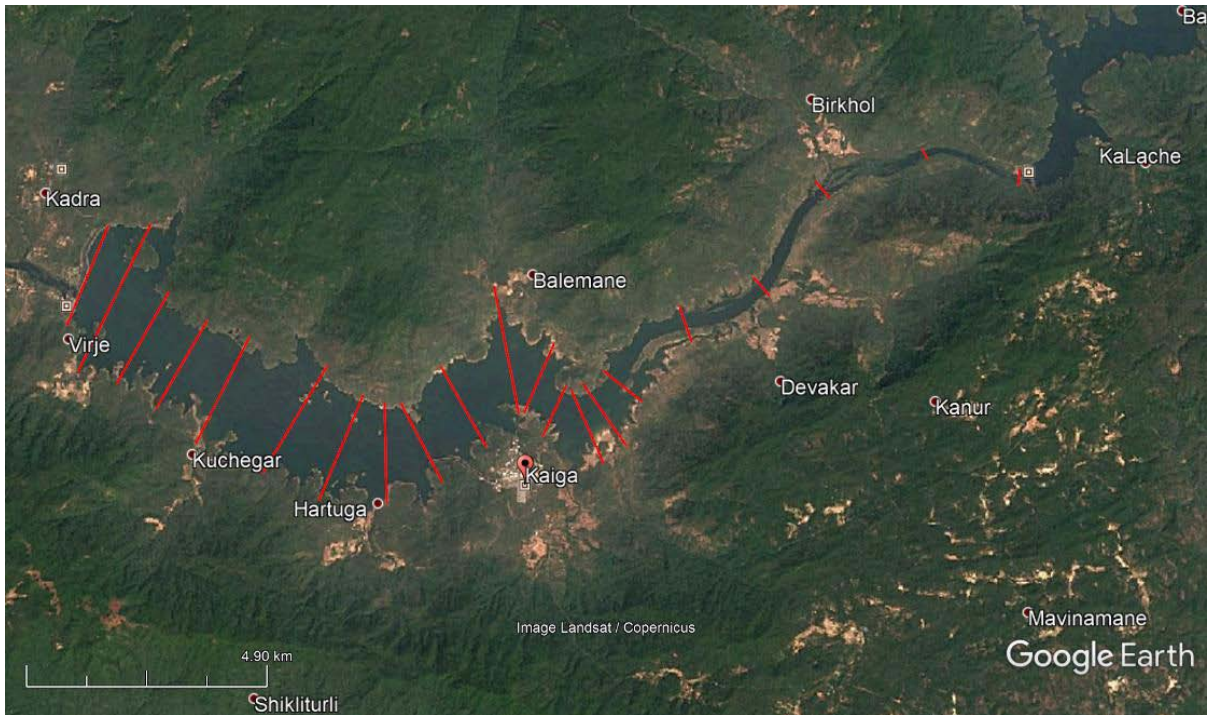
River Cross-section survey in Kali river downstream of Supa dam and primarily below the kodasali dam to water spread area of Kadra reservoir (aprox. 25 km) shown in Figure 1 (one time river cross section, extended beyond banks) at about 20 sections. The width of river is varying from 0.5 km to 1 km in general while the within reservoir spread area it varies from 2 km to 3.5 km. Further, few river cross sections are also needed in the upstream river reach. The tentative location of the section where survey would be needed is shown in Figure-2.

The elevation data of river bed along with the latitude and longitude (X-Y in UTM43N) of observation point would be required. The levels shall be on the basis of GTS benchmarks in the vicinity. The contractor shall transfer the benchmark (available at nearest dam site) to the site. All levels shall be related to MSL based on GTS benchmark. The spacing between two surveyed points along the river cross sections should not be more than 1/10 of waterway width and should be placed when there is change in slope.

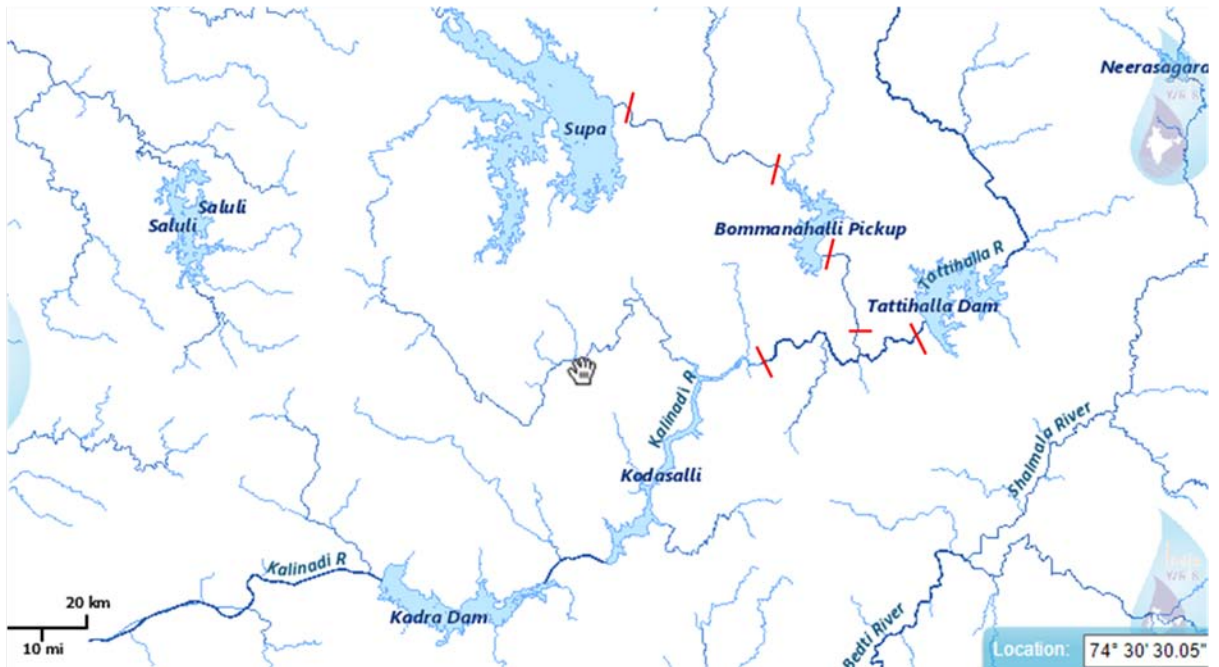
Along the river cross section, survey on land is to be carried out by Total Station/DGPS while the survey in waterway is to be carried out using echo-sounder. The horizontal coordinates of surveyed points should be in geographical/UTM coordinates while the vertical coordinate should be as above Mean Sea Level (MSL). The accuracy / least count of the instruments used in the survey should be clearly mentioned in the NIQ.

Survey report along with excel sheet containing geographical/ UTM-43N coordinate of permanent marks for river banks, The X, Z coordinates for river cross-sections and AutoCAD drawings for river cross sections are to be submitted after completion of work. Photographs and videos are to be made during the survey work and to be submitted in soft copy (DVD). The surveying agency is required to inform NIH regarding initiation of the work, so that officials from NIH may visit the surveying sites to monitor the survey work.

You are requested to quote your price for the above survey works including the applicable taxes. The number of cross-sections to be awarded for surveyed may vary from 15 to 20 depending on the availability of fund.



**Figure 1: The stretch of Kali river downstream of Kodalasi dam for detailed river cross sections survey (red lines shows the location for survey within Kadra reservoir).**



**Figure 2: The upper stretch of kali river with tentative cross section location (red lines shows the location for survey within Kali river).**