

By Registered Post

सं० 102/06/NIQ/2011/3336-64

भारत सरकार  
केन्द्रीय जल आयोग  
योजना एवं अन्वेषण मंडल  
एन० एच० -4 फरीदाबाद

दिनांक :- 24 / 09 / 2011

fufonk vke#.k l ipuk

अधिषासी अभियन्ता, योजना एवं अन्वेषण मंडल, केन्द्रीय जल आयोग, फरीदाबाद द्वारा भारत के राष्ट्रपति की ओर से दिनांक 05-10-2011 को अपरान्ह 15.00 बजे तक **Fabrication & Installation of Table mounted Pancheshwar Multipurpose Project Model** कार्य के लिये निविदा आमन्त्रित की जाती है। निविदायें अधिषासी अभियन्ता, योजना एवं अन्वेषण मंडल, केन्द्रीय जल आयोग, एन० एच० -4, फरीदाबाद में ही जमा की जायेंगी तथा इसी कार्यालय में दिनांक 05-10-2011 अपरान्ह 15:30 बजे खोली जायेगी। निविदाकर्त्ता अथवा उनके अधिकृत कार्यकर्त्ता निविदा खोलने के समय उपस्थित रह सकते हैं। निविदा प्रपत्र दिनांक 26-09-2011 (10.00 hrs.) से दिनांक 3-10-2011 (16.00 hrs.) तक अधिषासी अभियन्ता, योजना एवं अन्वेषण मंडल, केन्द्रीय जल आयोग, फरीदाबाद के कार्यालय से रूपये 500 नकद/मांग-पत्र "अधिषासी अभियन्ता, योजना एवं अन्वेषण मंडल, केन्द्रीय जल आयोग, फरीदाबाद" के पक्ष में देने पर प्राप्त की जा सकती हैं (डाक द्वारा 100 रु० अतिरिक्त)। कार्य अनुरुचि व निविदा इत्यादि प्रपत्र केन्द्रीय जल आयोग की **web site www.cwc.nic.in** पर उपलब्ध हैं।

अधोहस्ताक्षरी को पूर्ण अधिकार है कि वह बिना किसी कारण के कोई भी अथवा सभी निविदायें रद्द कर सकते हैं।

-Sd-

अधिषासी अभियन्ता

प्रतिलिपि:-

1. निदेशक, एस० एम० डी०, केन्द्रीय जल आयोग, नई दिल्ली, सी.डी. के साथ । केन्द्रीय जल आयोग के **web site** पर दर्शाने के लिये ।
2. अधीक्षण अभियन्ता, योजना परिमंडल, केन्द्रीय जल आयोग ।
3. सहायक अभियन्ता, केन्द्रीय भण्डार उप-मण्डल, नई दिल्ली ।
4. सहायक अभियन्ता, योजना एवं अन्वेषण उप-मण्डल, केन्द्रीय जल आयोग, फरीदाबाद ।
5. सहायक अभियन्ता, संग्रहालय एवं प्रदर्शनी उप-मण्डल, केन्द्रीय जल आयोग, कालिन्दी भवन, कटवारिया सराय, नई दिल्ली ।
6. लेखा शाखा, योजना एवं अन्वेषण मण्डल, केन्द्रीय जल आयोग, फरीदाबाद ।
7. सूचना पट्ट, योजना परिमण्डल/योजना एवं अन्वेषण मण्डल ।  
(सलंगन सूची अनुसार)
8. मेसर्स .....



**GOVERNMENT OF INDIA  
Ministry Of Water Resources  
Central Water Commission**

Tender Document  
for  
**Fabrication & Installation of Table mounted  
Pancheshwar Multipurpose Project Model**

Planning and Investigation Division  
Central Water Commission  
Faridabad

**Issued to :**

**Date of Issue :**

**Signature of the issuing authority:**

**This Tender Document Contains 25 pages**

Name of Work	<b>Fabrication &amp; Installation of Table mounted Pancheshwar Multipurpose Project Model</b> Size: 21 feet x 10 feet and height- 4 feet
Name of Contact Person	The Executive Engineer, P&I Division, Central Water Commission, Quarter no: 1061-1064, Type V, NH-IV, NIT, Faridabad-121001
Address of Department	P&I Division, Central Water Commission, Quarter no: 1061-1064, Type V, NH-IV, NIT, Faridabad-121001 Haryana Phone No: 0129-2412576
Language of the Tender	English / Hindi
Validity of Tender	90 days from the date of opening of bids
Number of copies of Tender Documents to be submitted	Single copy
Date & Place for tender submission	<b>up to 15:00 hrs on 05/10/2011</b> in the chamber of Executive Engineer, P&I Division, Central Water Commission, Quarter no: 1061-1064, Type V, NH-IV, NIT, Faridabad-121001 Haryana <b>Phone No: 0129-2412576</b>
Opening of tenders	<b>05/10/2011 at 15:30 hrs</b> in the chamber of Executive Engineer, P&I Division, Central Water Commission, Quarter no: 1061-1064, Type V, NH-IV, NIT, Faridabad-121001 Haryana <b>Phone No: 0129-2412576</b>

## Contents

<b>Sl. No.</b>	<b>Subject</b>	<b>Page No.</b>
1	Tender Notice	4-5
2	Special terms and conditions	6-15
3	Tender Form	16
4	Financial bid format	17
5	Index Map of the Project	18
6	Layout Plan at Pancheshwar Site	19
7	Layout Plan at Rupaligad Site	20
8	Salient Features of Pancheshwar Project	21-24
9	Salient Features of Rupaligad Project	25

**Government of India  
Office of the Executive Engineer  
P&I Division, Central Water Commission  
Quarter No. 1061-1064, Type V, NH-IV  
FARIDABAD-121001(Haryana)**

**TENDER NOTICE**

Executive Engineer, P&I Division, CWC, Faridabad for and on behalf of President of India invites tenders in sealed envelopes from eligible bidders for **Fabrication & Installation of Table mounted Pancheshwar Multipurpose Project Model.**

The work is estimated to cost 10, 00,000.00/- (Rupees Ten Lakh only).

1. Interested eligible bidders may obtain further information/clarification, if required, from the above office during working hours.
2. A complete set of tender document containing complete specifications and terms and conditions may be seen in the office of the Executive Engineer, P&I Division, Central Water Commission, Quarter no: 1061-1064, Type V, NH-IV, Faridabad -121001 during the office hours (10:00 hrs to 17:00 hrs) on working days (Monday to Saturday).
3. The interested eligible bidders may obtain the tender document on submission of written application along with cost of the tender document (Rs. Five Hundred in cash / DD in favour of "Executive Engineer, P&I Division, CWC, Faridabad". If required by Speed Post, Rs. 100.00 shall be charged extra) from the office of the Executive Engineer, P&I Division, Central Water Commission, Quarter no: 1061-1064, Type V, NH-IV, Faridabad-121001.
4. Tender documents can also be downloaded from Website [www.cwc.gov.in](http://www.cwc.gov.in). In this case bidder will have to submit the cost of tender (Rs. Five Hundred only) through demand draft in favour of "Executive Engineer, P&I Division, CWC, Faridabad" in separate envelope along with the bid. If the cost of tender document is not accompanied with the bid, the tender will be summarily rejected.
5. The bidder shall be required to submit Rs 20,000/- as bid security (EMD) at the time of submission of bid as Demand Draft drawn on

a Scheduled Bank in favour of “Executive Engineer, P&I Division, CWC, Faridabad” payable at Faridabad. If the bid of the tender is not accompanied with specified earnest money, the tender shall be treated as non responsive.

6. Date of obtaining the Tender document: w.e.f. 26-09-2011 (10.00 hrs).
7. Last date & time for sale of Tender document: 03-10-2011 (16:00 hrs).
8. Last date & time for receipt of tender: 15.00 hours on 05-10-2011.
9. Date & time of opening of bids : 15.30 hours on 05-10-2011
10. Place of submission and opening of bids and Address for Correspondence:

Office of the Executive Engineer,  
P&I Division, Central Water Commission,  
Quarter no: 1061-1064, Type V  
NH-IV, Faridabad-121001

11. Bids received late on account of any reason shall be considered as non responsive and shall be rejected.
12. In the event of the date/dates mentioned above under Sl. No. 6 to 9 declared as closed holiday for Department’s office, the due date/dates will be the next working day at the appointed time.
13. The Executive Engineer, P&I Division, Central Water Commission, Faridabad, reserves the right to accept or reject any or all tenders without assigning any reasons thereof.

## SPECIAL TERMS AND CONDITIONS

### 1. Scope of Work

- 1.1 **Fabrication & Installation of Table mounted Pancheshwar Multipurpose Project Model** of size 21 feet (L) x 10 feet (W) x 4 feet (H).
- 1.2 The index map of the project is shown at Annex- I. The topography of the site location may be seen at Google Map ( $29^{\circ} 25' 52''$  N  $80^{\circ} 14' 40''$ E). However, during the fabrication of the model, topographical features shall be made available.
- 1.3 The model shall be fabricated in three parts, each of size 7 ft x 10 ft approx. First part will depict Mahakali River System, Pancheshwar Multipurpose Project (including Intake, penstock, power house, spillway, hill abutments, tailrace channel, Turbine and Switch Yard etc) and Upstream reservoir; the middle part will contain the area Downstream of Pancheshwar Multipurpose Project up to Rupaligad Dam site and the river system in between and Rupaligad Dam(including Intake, penstock, power house, spillway, hill abutments, tailrace channel, Turbine and Switch Yard etc) and third Part will contain the area downstream of Rupaligad Dam upto Banbasa Barrage and the river system in between, Banbasa Barrage and the Canal System coming out from Banbasa Barrage. The layout plan of Pancheshwar and Rupaligad sites are placed as Annexure II & III. The Salient Features of the Pancheshwar and Rupaligad Projects are placed at Annex-IV & V respectively.
- 1.4 The model shall be working type with arrangement for depletion and refilling of water in upstream reservoirs. The water should flow in conveyance system and it should fall on the turbine model and turbine should rotate with this head of water. Except electricity generation, the entire model should be of real type. The electricity generation may be depicted from external power source.
- 1.5 The water conveyance system, the power house and its component conveying water shall be made of transparent material so that the water flow and the movement of turbine can be viewed from top and sides of the model.

- 1.6 The model shall be made in such a manner, which represents a variety of different textures of field like rock, sand, boulders, forest, rivers, valley, roads etc.
- 1.7 Standard switches, wires etc. of popular rating (BIS mark) available in the market are to be used. Suitable and decorative indicators must be used to show in detail in working condition of the model so as to attract a layman and also help him to understand.
- 1.8 The fabricated model shall be portable and prepared from fiber glass and acrylic sheet. The model should be designed and fabricated in such a manner that it can be separated for the convenience of transportation of the model from one place to another.
- 1.9 For the purpose of installation, the wooden frame with sunmica top or any other finishing as suggested by the Engineer shall be prepared by the successful bidder. For convenient and easy transportation of the model, it shall have plastic cover in suitable sizes, with locking arrangements. The suitable dust proof transparent covers of 5 to 6mm thick acrylic have to be provided for the models which should be designed in such a manner which can also be easily dismantled and transported with the model.
- 1.10 The model shall be transported and installed in Hall no. 7-E, Pragati Maidan, New Delhi during the IITF-2011 being held from 14<sup>th</sup> November 2011 to 27<sup>th</sup> November 2011.
- 1.11 After the IITF-2011, the model has to be dismantled and re installed at Kalindi Bhawan, Qutab Institutional Area, New Delhi.
- 1.12 Inspection shall be done by Engineer-in-charge on regular interval during fabrication.

## **2. Eligible Bidders**

- 2.1 The bidder should have completed at least one working model of Water Resources Project of approximate size not less than 15 ft. x 10ft. x 3ft. depicting all features of a hydro electric power plant and river system.
- 2.2 Such experience should be supported with documented credentials, photographs, testimonials and certificates. The firm

shall enclose the photographs and the work orders of the models prepared as a proof of fulfillment of eligibility criteria

- 2.3 Bidder should not be under a declaration of ineligibility for corrupt and fraudulent practices issued by any Court or Government Department.
- 2.4 Bidder should not have been blacklisted for non-compliance of any contract by any Government Department

### **3. Amendment of tender documents**

At any time prior to the deadline for submission of tenders, the Department, for any reason may modify the tender documents by amendment.

All the prospective Bidders that have received the tender documents will be notified of the amendment in writing or by Fax and it will be binding on them.

In order to allow prospective Bidders reasonable time to take the amendments into account in preparing their tenders, the Department, at its discretion, may extend the deadline for the submission of tenders.

### **4. Language of Tenders**

The Tender prepared by the Bidder, as well as all correspondence and documents relating to the tender exchanged by the Bidder and the Department shall be in English or Hindi.

### **5. Documents comprising the bid**

- 5.1 Tenders are invited in a single bid system: The bids to be submitted by the Bidder shall comprise the following components:
- 5.2 The bid shall be accompanied by Earnest Money Deposit of Rs. 20000/- (Rupees Twenty thousand only) as Demand Draft drawn on a Scheduled Bank in favour of "Executive Engineer, P&I Division, CWC, Faridabad" payable at Faridabad.
- 5.3 The bid shall include all the relevant documents evidencing bidder's qualifications & eligibility, documents establishing the conformity and eligibility of the services offered with supporting data/literature etc as mentioned in Para 2.2.

- 5.4 The bid shall be sealed in a cover titled **Bid for “Fabrication & Installation of Table mounted Pancheshwar Multipurpose Project Model”** with due date of opening 05-10-2011 at 15:30 Hrs.

5.5 **Period of Validity of Tenders**

Validity of tenders shall be 90 days after the date of tender opening. A tender valid for a shorter period shall be rejected by the Department as non-responsive.

In exceptional circumstances, the Department may solicit the bidders' consent to an extension of the period of validity. The request and the responses thereto shall be made in writing or by Fax. A Bidder granting the request will not be permitted to modify its tender.

6. **Deadline for submission of tenders**

- 6.1 Tenders must be delivered by 15.00 hour on 05-10-2011 at the office of the Executive Engineer, Planning & Investigation Division, Central Water Commission, N.H.-IV, Faridabad-121001, in a sealed cover super scribed **Fabrication & Installation of Table mounted Pancheshwar Multipurpose Project Model** with the due date of opening also mentioned on the top right hand corner of the sealed cover.
- 6.2 All pages of the bid document should be invariably signed by the Bidder in token of acceptance of conditions laid therein.
- 6.3 **The bidder shall be required to submit 20,000/- (Rupees Twenty Thousand only) as bid security (EMD)** at the time of submission of bid as Demand Draft drawn on a Scheduled Bank in favour of Executive Engineer, P&I Division, CWC, Faridabad payable at Faridabad. If the tender is not accompanied with specified earnest money, the tender shall be treated as non responsive.
- 6.4 **The successful bidder shall be required to submit 5% of the contract value as performance guarantee** within seven days from the date of issue of letter of acceptance in the form of Demand Draft drawn on a Scheduled Bank in favour of “Executive Engineer, P&I Division, CWC, Faridabad” payable at Faridabad. Bank Guarantee from a Scheduled Bank would also be acceptable.

## **7. Late Tenders**

Any tender received by the Department after the deadline for submission of tenders will be rejected and returned unopened to the Bidder.

## **8. Opening of Tenders by the Department**

The Department will open all the bids at 15:30 hours on 05/10/2011 in the presence of Bidders or their authorised representatives who choose to be present at the time of opening of the bids in the chamber of The Executive Engineer, Planning & Investigation Division, Central Water Commission, N.H.-IV Faridabad-121001

The Bidders/ authorised representatives who will be present shall sign a register evidencing their attendance.

In case the due date of opening happens to be a closed holiday, the tenders will be accepted and opened as per the time schedule on the next working day.

No tender shall be rejected at time of tender opening, except for late tenders, which shall be returned unopened to the Bidder.

## **9. Clarification of Tenders and contacting the Department for clarification of Tenders**

During evaluation of the tenders, the Department may at its discretion, ask the Bidder for clarification of its tender. The request for clarification and the response shall be in writing and no change in the prices or substance of the tender shall be sought, offered or permitted.

No Bidder shall contact the Department on any matter relating to its tender from the time of the tender opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Department, it should do so in writing.

Any effort by the Bidder to influence the Department in the Department's tender evaluation, tender comparison or contract award decisions may result in the rejection of the Bidder's offer.

## **10. Preliminary Examination**

The Department will examine the tenders to determine whether any computational errors have been made, whether required sureties

have been furnished, whether the documents have been properly signed, and whether the tenders are generally in order.

Arithmetical errors will be rectified on the following basis.

- (a) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected.
- (b) If the Bidder does not accept the correction of errors, its tender will be rejected, and its earnest Money will be forfeited.
- (c) If there is a discrepancy between words and figures, the amount in words will prevail.

The Department may waive any minor infirmity, non conformity, or irregularity in a tender, which does not constitute a material deviation, provided it does not prejudice or affect the relative ranking of any Bidder.

Prior to the detailed evaluation, the Department will determine the substantial responsiveness of each tender with reference to the Tender Documents without material deviations.

If the tender is not substantially responsive, it will be rejected by the Department and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

Tenders qualifying by such vague and indefinite expression such as "Subject to immediate acceptance", "subject to prior sale" and conditional tender will not be considered.

## **11. Prices and Evaluation of Tenders**

The prices quoted shall be F.O.R. Destination and inclusive of all duties and taxes including Custom Duty, Octroi, VAT, Service Tax, Entry and other taxes etc and no additional amount on the quoted prices shall be paid on account of such duties, taxes and octroi etc.

## **12. Award Criteria**

The work will be awarded to the lowest bidder among the eligible participating firms.

## **13. Department's Right to vary Quantities at the time of award**

The Department reserves the right at the time of award of contract to increase or decrease, the quantity of items originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions.

**14. Department's Right to accept any Tender and to reject any or all tenders**

The Department reserves the right to accept or reject any tender, and to annul tender process and reject all tenders at any time prior to contract award, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Department's action.

- **Notification of award**

Prior to the expiration of the period of tender validity, the Department will notify the successful Bidder in writing by registered letter or by fax, to be confirmed in writing that its tender has been accepted.

The notification of award will constitute the formation of the contract.

**15. Traveling/Transportation**

The traveling/transportation costs of men, material and equipments etc. under this contract shall be borne by the successful Bidder.

**16. Conditions**

The successful bidder will have to comply with the following conditions

16.1 The requirement is **Fabrication & Installation of Table mounted Pancheshwar Multipurpose Project Model** of size 21 feet x 10 feet x 4 feet.

16.2 The Agency should deploy the services of only qualified and highly talented professionals in areas of fabrication and designing of the said model.

16.3 The model strictly as per specification and size should be prepared within 25 days from the date of issue of work order.

16.4 **Time is the essence of work and strict time schedule has to be adhered to by the bidder and work has to be completed**

**within 25 days. In case the work is not completed within the due date, penalty @ the rate of Rs. 3000/- per day shall be imposed. If the model could not be prepared and installed in the Hall 7-E, Pragati Maidan, New Delhi by 12<sup>th</sup> November 2011 an additional penalty of Rs. 50,000 shall be imposed.**

- 16.5 Latest income tax clearance certificate along with PAN in the name of Firm and not in the individual name should be submitted along with tender
- 16.6 Request for enhancement of rates during the contract period or request for advance payment shall not be considered under any circumstances.
- 16.7 Service tax if any should be inclusive in the rates to be quoted.
- 16.8 The Department is not bound to accept the lowest tender and reserves the right to accept or reject any or all the tenders without assigning any reason thereof.
- 16.9 The selected bidder shall have to carry out flawless execution and professional handling of the work.
- 16.10 Transportation of all men, material and equipments required for completing the work will be the responsibility of the selected bidder.

## **17 Payment**

- 17.1 No advance payment shall be made.
- 17.2 The 75% payment shall be made after successful completion & installation of the model at the MoWR Pavillon, Hall 7E, IITF-2011, Pragati Maidan, New Delhi. The 25% payment shall be made after dismantling and successful reinstallation of model at Kalindi Bhawn, Qutab Institutional Area, New Delhi or any other place in NCR as decided by the Department.
- 17.3 Taxes such as income tax, VAT etc shall be deducted as per government rules.

## **18 Termination for Default**

- 18.1 The Department, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Bidder, may terminate this contract in whole or in part.

- (a) If the Bidder fails to deliver any or all of the services/systems within the period (s) specified in the contract, or within any extension thereof granted by the Department; or
  - (b) If the Bidder, in the judgment of the Department has engaged in corrupt or fraudulent practices in competing for or in executing the contract.
- 18.1 In the event of termination of contract, in whole or in part, Department may engage upon another Agency and the defaulting agency shall be liable to pay to Department for any excess cost incurred for such similar services.

## **19 Termination for Insolvency**

The Department at any time may terminate the contract by giving written notice to the Bidder if the Bidder becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Bidder, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Department.

## **20 Termination for Convenience**

The Department, by written notice sent to the Bidder, may terminate the contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Department's convenience, the extent to which performance of the Bidder under the contract is terminated, and the date upon which such termination becomes effective.

## **21 Resolution of Disputes**

- 21.1 The Department and the bidder shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the contract.
- 21.2 For resolution of disputes, appropriate legal action shall be initiated in consultation with the Department of Legal Affairs, Government of India. Relevant sections of Indian laws as amended from time to time shall be applicable and binding on the bidder.
- 21.3 In case of any dispute, the matter shall be referred to courts having their jurisdiction at Faridabad only.

## **22 Taxes and Duties**

- 22.1 The Bidder shall be entirely responsible for all taxes, duties, license fees etc. incurred until completion of the contract. However, any exemption certificate, if required shall be provided by the consignee at the request of Bidder.

# TENDER FORM

Date...../2011

To

The Executive Engineer,  
P&I Division, Central Water Commission,  
Quarter no: 1061-1064, Type V,  
NH-IV, Faridabad-121001

Sir,

Having examined the Tender Documents, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to provide services in conformity with the said Tender Document for the sum of Rs. ----- (Rupees-----) (Total Tender amount in words and figures) or such other sums as may be ascertained in accordance with the schedule of prices attached herewith and made part of this Tender.

We undertake, if our tender is accepted, to provide services in accordance with the specification and schedule specified in the schedule of requirements.

We agree to adhere by this tender for a period of -----(Number) days from the date fixed for Tender opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal contract is prepared and executed, this Tender, together with your written acceptance thereof and your notification of award, shall constitute a binding contract between us.

We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this -----day of -----2011.

Signature -----

(in the capacity of)

Duly authorised to sign tender for and on behalf of

## FINANCIAL PROPOSAL

To

Executive Engineer, P&I Division,  
Central Water Commission,  
1062-64, Type-V, NH-IV,  
NIT, Faridabad

Sub: Financial quotation for **“Fabrication & Installation of Table mounted Pancheshwar Multipurpose Project Model”**

Sir,

The undersigned having read and examined in detail all the terms and conditions of tender document for **“Fabrication & Installation of Table mounted Pancheshwar Multipurpose Project Model”** do hereby quote the following Amount, inclusive of all taxes:

Name of the Project/works	Unit	Amount (In Indian Rupees) inclusive of all taxes	
		In figures	In words
Fabrication & Installation of Table mounted Pancheshwar Multipurpose Project Model including as per the scope of work	1 no. Size 21 ft x10 ft x 4 ft		
<b>Total Cost of Tender</b>			

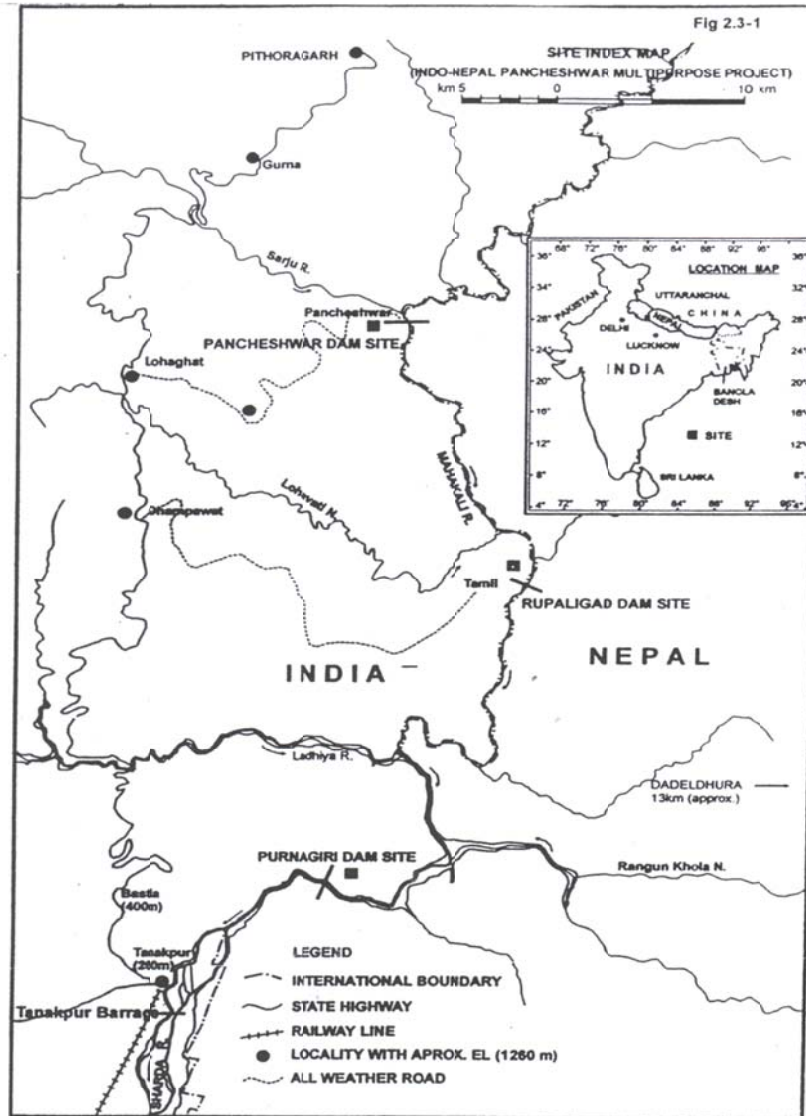
*Note: Rates quoted above are inclusive all taxes including service tax.*

Place \_\_\_\_\_  
Date \_\_\_\_\_

(Signature)  
Name:

Official Seal of the agency

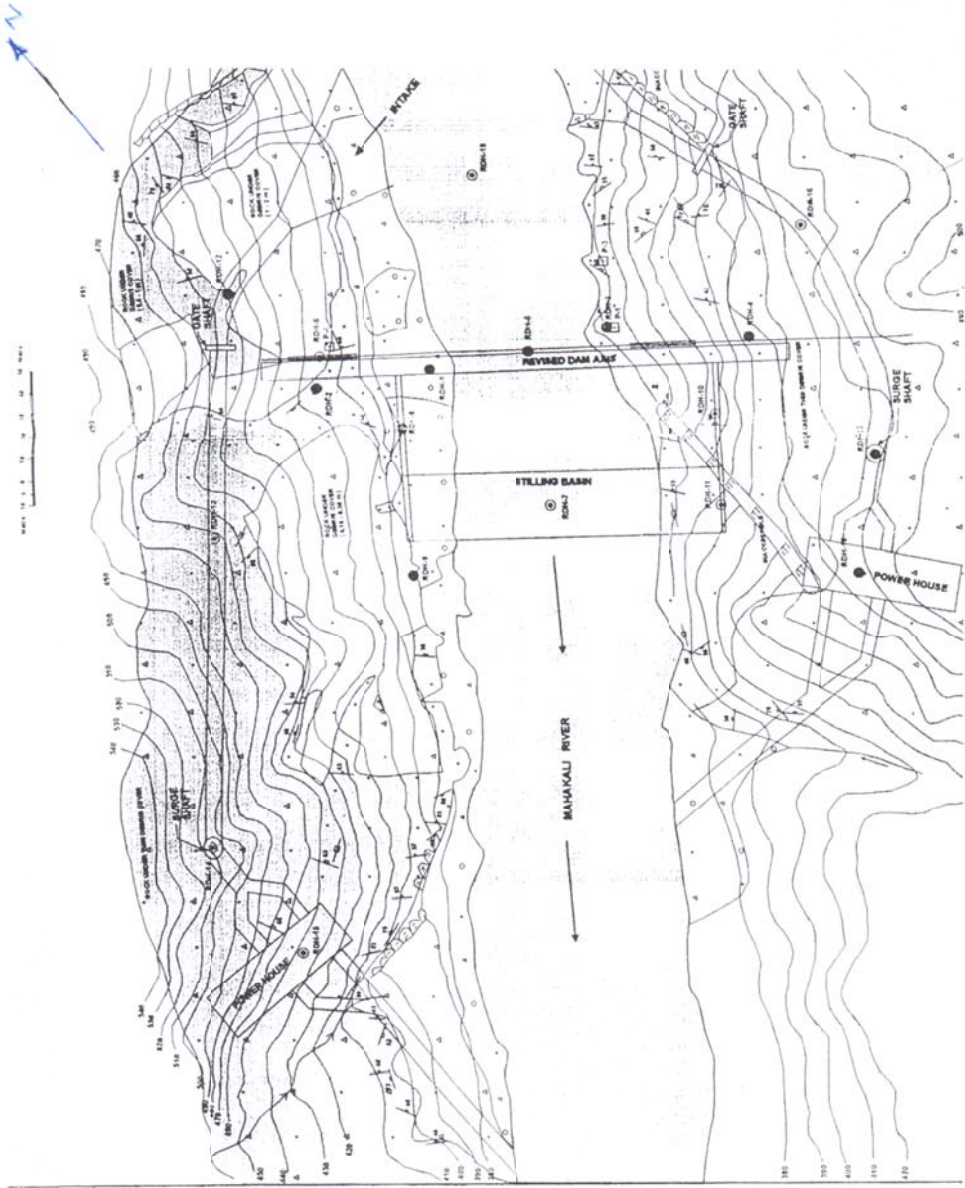
Index Map of Pancheshwar Multipurpose Project



Layout Plan at Pancheshwar Site



Layout Plan at Rupaligad Site



**SALIENT FEATURE OF PANCHESHWAR MULTIPURPOSE PROJECT**

**A. LOCATION**

1. Country	India and Nepal Champawat/Uttranchal/India Baitadi/Nepal
2. River	Mahakali
3. Main Pancheshwar Dam	Near Pancheshwar Temple
Longitude	L/B, Nepal 80° 15'4.61" R/B, India 80° 14'40.91"
Latitude	L/B, Nepal 29° 25'40.09" R/B, India 29° 25' 52.66"
4. Pancheshwar Power House	Left Bank Nepal Side Right Bank India Side

**B. HYDROLOGY**

1. Drainage area of the river	
Pancheshwar Main dam site	12100 Sq.km (Total) 9720 Sq.km (India) 2380 Sq.km (Nepal)
Purnagiri Dam site	14922 Sq.km (Total)

**C. PANCHESHWAR DAM COMPLEX**

1. Main Dam	
i) Type	<b>Rock fill with clay core</b>
ii) River Bed level	410.00 m
iii) Deepest Foundation Level	380.00 m
iv) Top of dam	695.00 m
v) Height of dam	315.00 m

vi)	Length at top	869.00 m
vii)	Upstream slope	2.75 H:IV
viii)	Downstream slope	2H:IV
ix)	Top width	20.00 m
x)	Volume of Damfill	53.44 Mcum
<b>2.</b>	<b>Spillway</b>	
i)	Type	<b>Ungated Chute</b>
ii)	Width	175.00 m
iii)	Water way	3 Bays of 21 m
iv)	Invert Level	655.00 m
v)	Crest level	680.00 m
vi)	Maximum head over crest	15.50 m
vii)	Length of stilling basin	310.00 m
viii)	Length of Approach Channel	259.00 m
ix)	Invert level of Plunge Pool	380.00 m
<b>3.</b>	<b>Diversion Tunnel</b>	
i)	Number	4 (2 on each side)
ii)	Diameter	13.00 m (Horse Shoe Shaped)
iii)	Length	No.1 – 1590 m India side No. 2 – 1740 m No. 1 – 1940 m Nepal side No. 2 – 1800 m
iv)	Inlet level	410.00 m
v)	Outlet Level	401.00 m
<b>4.</b>	<b>Depletion arrangement (Intermediate)</b>	
i)	No. of depletion tunnel	2 (1 no. each side)
ii)	Diameter	4.70 m
iii)	Length	1530 m (India) 900 m (Nepal)
iv)	Inlet level	544.00 m

v)	Outlet Level	520.00 m
vi)	Discharge	580 Cumecs
<b>5.</b>	<b>Low Level Outlet Facility</b>	
i)	Upstream Gate	2 nos. of 2.5 m x 3.5 m
ii)	Downstream Gate	2 Nos. of 2.15 m x 3.20 m
iii)	Discharge	200 Cumecs to 550 Cumecs
<b>6.</b>	<b>Reservoir</b>	
i)	Minimum Draw Down Level	615.00 m
ii)	Full Reservoir Level	680.00 m
iii)	Maximum Water Level	692.90 m
iv)	New Zero Elevation after 100 year	484.24 m
v)	Submergence	
	Village	60 (In Pithoragarh), Almora & Champawat District of India)
		14 VDCs in Dharchula & Baitadi District in Nepal
	Population	19700 (India) 11466 (Nepal)
vi)	Reservoir stretch	80 km.
<b>7.</b>	<b>Intake</b>	
i)	No. of gates	16
ii)	Size	6 m x 10.75 m
iii)	Invert level	587.0 m
iv)	Vertical shaft	8 nos. of 18 m x 4 m
v)	Intake Deck Level	617.00 m
<b>8.</b>	<b>Head Race Tunnel</b>	
i)	Number	8 (4 nos. on each side)
ii)	Finished Diameter	10.75 m
iii)	Length	820 m to 1100 m (India side) 620 m to 840 m (Nepal side)

iv)	Invert level at inlet	594.60 m
	Invert level at outlet	592.10 m
<b>9.</b>	<b>Power House</b>	
i)	Number	Two (One on each side)
ii)	Orientation	N 37 <sup>0</sup> E (R/B) and N 22 <sup>0</sup> E (L/B)
iii)	Type	Underground
iv)	Size	23 m x 54.8 m x 278 m each
v)	Installed capacity	2x(8x350 MW) i.e. 5600 MW
vi)	Transformer cavern	20m x 31.5 m x 227 m each
vii)	No. of access tunnel	2 (1 no. each side)
	Size	8.00 M x 10 M (D-Shaped)
	Length	980 M (India)
		840 M (Nepal)
viii)	No. of Vertical drop shaft	8 (4 nos. on each side)
	Diameter	8.40 m
	Height	194.50 m each
<b>10.</b>	<b>Tail Race Tunnel</b>	
i)	Type	Circular
ii)	No.	4 (2 on each side)
iii)	Diameter	16.40 m

**SALIENT FEATURES OF RUPALIGAD DAM**

<b>River Basin</b>		<b>Mahakali, Tributary of Ganga</b>
Located in	(i) District	Champawat (India), Dadeldhura (Nepal)
	(ii) State	(Uttaranchal (India), Far Western Region (Nepal))
	(iii) Countries (If International River)	India and Nepal
	Longitude/ latitude	80 <sup>o</sup> 18' 07" East/ 29 <sup>o</sup> 14' 46"North
Irrigation/Multipurpose		Multipurpose
Power Installed Capacity		240 MW
Reservoir		
Full Reservoir Level		420 m
Maximum Water Level		425.50 m
Minimum draw down Level (MDDL)		403 m
Gross storage at FRL		6814 HAM
Re-regulating storage required		55 MCM
Maximum Tail Water Level		388.84 m
Catchment Area (Intermediate)		1184.0 sq.km.
<b>Dam</b>		
Type of dam		Concrete dam
Top of Dam		426 m
Top Width		29 m
Deepest Foundation Level		332 m (tentative)
Length of the dam at top (m)		227 m
Maximum height above G.L.(m)		41 m
<b>Spillway</b>		
Type		Solid roller bucket spillway
Length		192 m
Crest level		383 m
Size of sluices		9 x 13 m
No. of sluices		12 nos.
<b>Power House</b>		
Type		Underground
Invert of Power Intake		388 m
Centre Level of Power Intake		395 m
Foundation level of power dam blocks		385 m (tentative)
Dia of individual penstock ( 4 nos. on either side)		5 m
Design head on turbines		43 m
<b>Head Race Tunnel</b>		
No.		2 (1 no. on each side)
Diameter		9.5 m
Type		Underground
Length		380 M (India side), 280 M (Nepal side)
<b>Surge Shaft</b>		
No.		2
Diameter		14.00 m
Length		125 m