

Training Program on Analysis and Design of Dams

Introduction and Objective

Increasing demands on existing water resources due to increase in population, rapid urbanization and more pronounced spatial and temporal variations of late has resulted in water scarcity condition. This calls for effective management of the limited water available through collection/storage of water during wet periods for gainful utilization during the dry periods. Dams and reservoirs world over have been playing the dual role of harnessing the river waters for accelerating socio-economic development and mitigating the suffering from floods and droughts. Now projects being multi-purpose, these dams and reservoirs have become even more effective tools to fulfill the societal need of water for drinking and industrial use, more wide spread irrigation network for increasing the food productivity, flood control, hydropower generation, inland navigation, recreation etc.

In such a scenario when water-stress condition is looming large on not-so-distant horizon, more and more dams and reservoirs need to be planned and created. Looking at the sheer number of such structures needed in the present context, a large pool of knowledge needs to be created in the area of analysis and design of dams. Imparting training to the concerned officials is the most effective way of enhancing the existing capacity.

Accordingly, this training program has been planned at NWA to develop/harness/build capability in designing various types and components of dam.

Program Content

The program will comprise of technical sessions, case studies, hands-on sessions and field visit. It is intended to cover important design aspects of both concrete and embankment (earth and rockfill) dams.

Main topics for technical sessions are:

- ❖ Overview of dams and various loading conditions
- ❖ Model Studies for design of dams
- ❖ Selection of Seismic Design Parameters for dams
- ❖ Geo-technical Investigation and Foundation Treatment
- ❖ Stability Analysis of Concrete Dams
- ❖ Stability Analysis of Embankment Dams
- ❖ Dynamic Analysis of Concrete Gravity Dam
- ❖ Hydraulic Design of Spillway
- ❖ Planning of Hydro-mechanical equipment for dam structures
- ❖ Dynamic properties of soil-sampling and testing
- ❖ Dynamic Analysis and Tri-axial Tests for Embankment Dams
- ❖ Seepage Control measures in embankment dams
- ❖ Design of Core and Filter
- ❖ Selection of material for construction of embankment dams
- ❖ Instrumentation in Dams
- ❖ Roller compacted concrete (RCC) dams

Resource Persons

The resource persons for the program would be subject experts from:

- ❖ Ministry of Water Resources
- ❖ Central Water commission
- ❖ Central Soil and Material Research Station
- ❖ Central Water and Power research Station
- ❖ Dam Project Authorities

Duration

31 January – 11 February 2011.

The participants should reach NWA by the evening of 30th January and should plan to leave only after 1800 Hrs. on 11th of February.

Medium of Instruction

The medium of instruction for all events at NWA is **English**.

Target Group

Graduates in relevant discipline(s) of engineering with some years of work experience in the field of design or construction of water resources structures.

Venue

National Water Academy, Khadakwasla, Sinhagad Road, Pune-411 024.

Program Fee

The Program Fee for various categories of participants is given below:

Category	Participants from	Fee in Indian Rupees (per participant)
A.	Central/State Government/Departments including their autonomous bodies	Nil
B.	Recognized academic institutions, NGOs	₹ 3,600/-
C.	Central and State Public Sector Undertakings	₹ 24,000/-
D.	Private Companies, individuals, foreign nationals	₹ 36,000/-

The program fee **covers** training material, training kit, transport for any local field visit, and tea/coffee and working lunch during the program. It **does not cover** expenditure towards travel to NWA and return, airport/railway station pickup and drop, travel cost for any field visit that involves air/rail journey, and lodging & boarding, which are to be borne by the participants themselves.

For modalities in respect of payment of fee, please refer to our website or contact the Program Director. In case of participants from any country other than India, the program fee of ₹ 36000/- (Indian rupees thirty six thousand only) will be accepted in Indian rupees only.

How to Participate

The **nomination** may be sent in the prescribed '**Registration Form**' to the Program Director latest **by 20th December 2010**.

The nominated officers are requested to start for the program only after confirmation of their nomination. The accepted nominations will be displayed on NWA's website on 27th December.

Local Hospitality

NWA has a self-contained residential campus with comfortable lodging and boarding facilities and other amenities. Details in this regard are available at our web site on the 'campus' page. Participants are accommodated one-in-a-room (no sharing, single occupancy) basis. Out-station participants may like to avail this facility which is provided on first-come-first basis as per the availability. The lodging and boarding charges amount to approximately Rs. 250/- per person per day (Indian rupee two hundred fifty only per person per day) will have to be borne by the participants. Alternatively, the participants may make their own lodging and boarding arrangements.

Airport/Railway station pickup/drop and local transport will have to be arranged by the participants themselves.

Weather

During late January and February the average temperature of Pune may be around 20°C varying from around 15°C to around 30°C, with occasional nominal rain.

Nearest International Airport

The nearest international airport is Chhatrapati Shivaji International Airport at Mumbai which is approximately 250 kms from Pune. Mumbai-Pune is connected by air as well as by an expressway, and rail. Air-conditioned taxis, buses and trains ply at regular intervals.

After your travel to a port of arrival in India is confirmed, you may contact NWA helpdesk <nwa.mah@nic.in> for further guidance.

Program Director

For sending nominations or for any information with regard to this Program, please contact :

Sushil Kumar

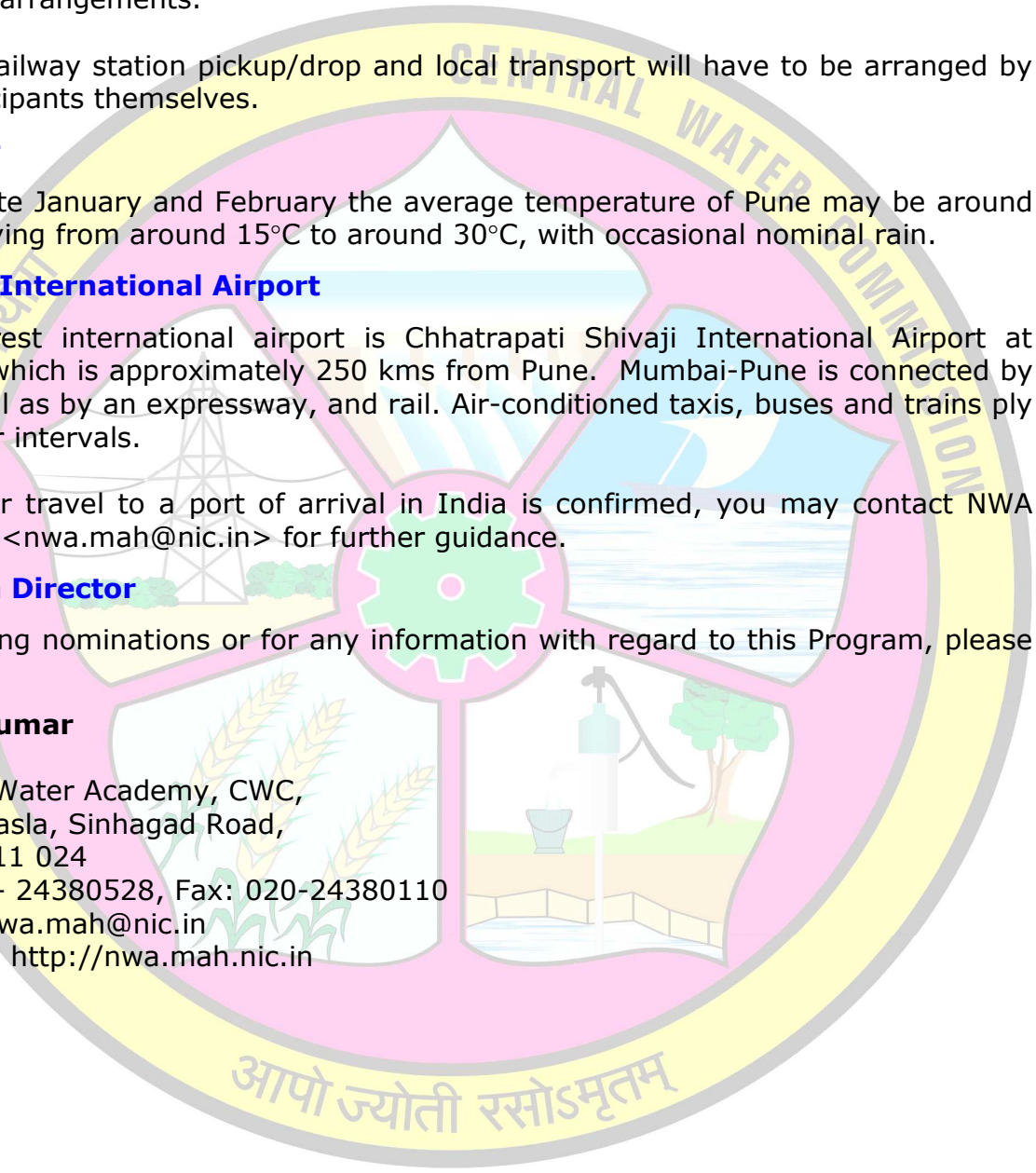
Director

National Water Academy, CWC,
Khadakwasla, Sinhagad Road,
Pune – 411 024

Tel: 020 - 24380528, Fax: 020-24380110

E-mail: nwa.mah@nic.in

Website: <http://nwa.mah.nic.in>



NATIONAL WATER ACADEMY, PUNE

Registration Form for Foreign Nationals

For office use only :
Registration_____

Affix Photo

1. I wish to enroll in the training program on **“Analysis and Design of Dams”** scheduled during 31 Jan – 11 Feb 2011 at NWA, Pune, India.

2. Personal Details

Name : (Mr./Dr./Mrs./Ms.).....

(Write in block letters as in your passport)

Date, place and country of birth:.....

Age..... Gender: Female/Male

Country of Origin:..... Citizenship of :.....

Profession :.....

3. Passport Details

Passport No.:..... Place of issue:.....

Date of Issue:..... Date of Expiry:.....

The name of the Indian Mission abroad where visa will be applied

4. Present Professional Employment

Job Title:.....

Company/organization :.....

Department/Division:.....

Type of Organisation : Government/Semi-government/Private:

Duties and responsibilities :.....

Mailing Address:.....

Phone (with country and area code) : Office

Phone (with country and area code) : Residence
Fax (with country and area code) :.....
E-mail :.....

5. **Brief Professional Experience (on separate sheet):**.....

6. **Education Background:**

Degree/Diploma	Year	Institution	Field of Study

7. **English language proficiency:** (fair F; good G; excellent E)

Read F G E write F G E speak F G E understand F G E

8. **What is the source of finance for your stay and other expenses in India during the course of stay?**

9. **Accommodation required in the Academy guest house: Yes / No.**

10. **Payment Information : Demand Draft No. : _____ dated : _____**

(Payment to be made in Indian Rupee Only. Demand Draft to be drawn on favour of "Deputy Director (A&C), National Water Academy, Pune" payable at Pune, India,)

11. **Likely plan of Arrival and Departure :**

12. **Name and address, Tel Number, Mobile Number, E-mail ID of a person who is to be contacted in case of an emergency:**.....
.....

Date:

Signature of the participant

Declaration

I hereby declare that the information furnished in the Registration Form is complete and accurate. I also agree that the Academy has the right to cancel my candidature, if it finds that any information provided therein is incorrect, incomplete, misleading, or ineligibility being noticed before or after the admission in the program (s)

I will abide by all rules and regulations as applicable in India to an International Trainee and not indulge in any activity other than the mandate of training.

A letter from sponsoring agency of my participation in the above program as required for nomination and support of travel cost will be furnished.

Date:

Signature of the participant

Sponsoring Authority
(if applicable)

Mr/Ms of
(agency/organization) is hereby sponsored for attending the training program on Analysis and Design of Dams at National Water Academy, Central Water Commission, Khadakwasla, Sinhagad Road, Pune - 411 024

Full Postal Address: _____

Tel Nos.(with are and country code) : _____

Fax No: _____ Mobile : _____
(with are and country code)

E-mail: _____

Date

(Signature and Seal)