

I/153961/2023(2)



भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
केन्द्रीय जल आयोग
राष्ट्रीय जल अकादमी



Government of India
Ministry of Jal Shakti
Dept of Water Resources,
River Development & GR
Central Water Commission
National Water Academy

दिनांक: .11.2023

सेवा में,

1. The Member (D&R)/Member (WP&P)/Member (RM), CWC, New Delhi
2. The Chief Engineer, CWC (HQ)/The Chief Engineer, Field Offices, CWC
3. All the organisations under DoWR, RD & GR, Ministry of Jal Shakti, New Delhi
4. The Principal Secretary, State Water Resources Department / Irrigation Departments/Stat PSUs
5. Engineer-in-Chief, State Water Resources Department / Irrigation Departments/Stat PSUs
6. The Heads of PSUs/Private Companies

विषय: राष्ट्रीय जल अकादमी, केन्द्रीय जल आयोग, पुणे में “**Pumped Storage Hydroelectric Projects**” विषयों पर प्रशिक्षण कार्यक्रम का आयोजन - नामांकन - के संबंध में।

महोदय/ महोदया,

राष्ट्रीय जल अकादमी में “**Pumped Storage Hydroelectric Project**” विषय पर प्रशिक्षण कार्यक्रम का आयोजन किया जा रहा है। इस कार्यक्रम संबंधी प्रमुख बिन्दुएँ पृष्ठांकित (*overleaf*) हैं। विस्तृत ब्योरा सहित कार्यक्रम विवरणिका (*Program Brochure*) भी संलग्न है। उपर्युक्त कार्यक्रम में निम्नलिखित स है।

Name of Program	Duration & Days	Last date of receipt of nomination/s	Acceptance of Nomination/s	Participants' Profile
Pumped Storage Hydroelectric Project	8-12 Jan 2024 (5 days)	28 th Dec 23	29 th Dec 23	Graduate Engineers (B E/B Tech) with some years of work experience in the field of Planning / design/ implementation /maintenance of water resources structures, of the levels of Superintending Engineer/ Executive Engineer, Assistant Executive Engineer and Assistant Engineer.

अनुरोध है कि संलग्नक में दिए गए स्तर के अधिकारियों को इस कार्यक्रम से लाभ उठाने हेतु यथाशीघ्र नामित करने का कष्ट करें। केन्द्रीय एवं राज्य सरकारों के विभागों के अधिकारियों के लिए इस प्रशिक्षण कार्यक्रम में भाग लेने हेतु कोई भी प्रोग्राम शुल्क नहीं है। अन्य एजेन्सियों / वर्गों के अधिकारियों के लिए प्रोग्राम शुल्क की जानकारी संलग्न विवरणिका (*Program Brochure*, also available at our website) में दी गई है।

भवदीय

Encl. : As above

एस के दास
निदेशक (अभिकल्प)
एवं कार्यक्रम निदेशक
9818707541

खडकवासला, पुणे -सिंहगढ़ रोड, पुणे -411 024
टेलीफोन: 020-24380392 Extn 103/112
मोबाईल : #9818707541
ई-मेल: nwa.mah@nic.in, cenwa.mah@nic.in

♣ जल संरक्षण सुरक्षित भविष्य ♣



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♣ Conserve Water- Save Life ♣

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Government of India
Ministry of Jal Shakti
Dept of Water Resources,
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National Water Academy

Dated : .11.2023

To

1. The Member (D&R)/Member (WP&P)/Member (RM), CWC, New Delhi
2. The Chief Engineer, CWC (HQ)/The Chief Engineer, Field Offices, CWC
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Sub: Training Program on “**Pumped Storage Hydroelectric Projects**” at NWA, Pune - Call of nominations - reg

Sir/Madam,

A Training Program on “**Pumped Storage Hydroelectric Projects**” at NWA, Pune during **08-12 January 2024** is planned. Brochure of the program is enclosed. Salient details for this training program are as given below :

Name of Program	Duration & Days	Last date of receipt of nomination/s	Acceptance of Nomination/s	Participants' Profile
Pumped Storage Hydroelectric Project	8-12 Jan 2024 (5 days)	28 th Dec 23	29 th Dec 23	Graduate Engineers (B E/B Tech) with some years of work experience in the field of Planning / design/ implementation /maintenance of water resources structures, of the levels of Superintending Engineer/ Executive Engineer, Assistant Executive Engineer and Assistant Engineer.

It is requested that **nominations** of the officers of the profile indicated above may please be sent so as to reach NWA by the **last dates as given above**. Complete details (address, email, telephone, mobile, fax) of the nominated officer(s) and the controlling officer(s), name/s of modules may please be provided while sending the nomination/s. There is **no program fee** for participants from **Central and State Govt. departments**. Details of charges for participants from other agencies are given in the website of NWA (<http://nwa.mah.nic.in>) and are also given in the enclosed Program Brochures. Confirmation on acceptance of nomination/s will be sent by fax / published on our web site (<http://nwa.mah.nic.in>) as indicated above respectively.

The nominated officers are requested to start for the program only after getting confirmation/ acceptance of their nomination from NWA.

Yours faithfully,

Encl : As above

Sd/-

S K Das
Program Director
9818707541



I/153961/2023(2)

NATIONAL WATER ACADEMY, PUNE
Training Program on
"Pumped Storage Hydroelectric Projects"
08-12 January 2024

REGISTRATION FORM

Name (in capitals): _____

Designation: _____

Organization: _____

Responsibilities (in brief): _____

Full Postal Address: _____

Tel Nos.(with STD Code) : _____

Fax No: _____ Mobile : _____

E-mail: _____

Whether require accommodation at NWA complex ? YES / NO

Date (Signature of the participant)

SPONSORING AUTHORITY

Full Postal Address: _____

Tel Nos.(with STD Code) : _____

Fax No: _____ Mobile : _____

E-mail: _____

Date (Signature and Seal)



Government of India
Ministry of Jal Shakti,
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Water Commission



Training Program on
Pumped Storage Hydroelectric Projects
08-12 January 2024

Organized by
National Water Academy, Pune



Completed Registration Form may be sent by nwa.mah@nic.in;
nwa.pune@gmail.com; sudistakdas@gmail.com

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INTRODUCTION AND OBJECTIVES

With India's energy scenario evolving toward more renewable energy sources such as solar and wind, the need for energy storage has emerged. With rising renewable energy capacity additions in India to fulfill the 500 GW target by 2030, grid dependability and stability are critical. Pumped storage power plants have already proven to be the most sustainable method of energy storage, contributing significantly to a sustainable energy future. Pumped storage technology, in particular, will play an essential role in fulfilling future energy demand in India. India plans to reach net-zero emissions by 2070, starting with a 50% renewable energy target by 2030. Hydro Pumped Storage Projects are required to assist India in meeting its commitment to achieve 500 GW of installed capacity from non-fossil fuel sources by 2030 and Net Zero carbon emissions by 2070. Hydro Pumped Storage Projects (HPSPs) will aid in the integration of intermittent renewable energy into the grid. It will enable the supply of dispatchable RE power while also assisting the Grid in meeting peaking requirements. Given the project's significance, 39 HPSPs totaling 47 GW are being pursued for completion by 2029-30. India is currently constructing numerous huge pumped storage power plants. The Ministry of Power, Government of India, has issued guidelines for the introduction of pumped storage power plants in 2023, as they could be a key technology for India's renewable energy future. India has estimated that it will require at least 18.8 GW of pumped storage hydropower capacity to support the planned integration of wind and solar into the Indian grid by 2032, and possibly more if other energy storage systems are not financially viable. The Indian government recently increased its estimate of pumped storage hydropower potential from 96 GW to 106 GW. The new guidelines establish a much-needed framework for the development of new pumped storage facilities across the country, bringing the government's efforts in line with those of India's states. It is envisaged that in future the focus will change on the type of hydropower, a shift will occur from run-of-river to pumped storage combined with 'other alternative renewable energy resources' to ensure energy security.

Building the organization and individual capacities to achieve this gigantic task of planning and development of Pumped Storage Hydroelectric Projects is very much essential. Also, there is a need for a structured capacity building approach for building the capacity building of personnels involved in this endeavor. One Week Training Program on "**Pumped Storage Hydroelectric Projects**" has been conceptualized by NWA to provide an insight into the various issues involved in planning and development of Pumped Storage Hydroelectric Projects

PROGRAM CONTENTS

- . Main topics for technical sessions are:
 - o Pumped Storage Hydroelectric Projects in India – an overview
 - o Power Potential Studies and fixation of installed capacity for PSHEPs.
 - o Hydrology and Planning of PSHEPs
 - o Geotechnical Investigation for PSHEPs
 - o Design Aspects of PSEPS – Dam & Storage, Water Conductor system, transient phenomenon and Powerhouse
 - o Plant Layout of PSHEPs
 - o Design aspects of electromechanical & Hydromechanical equipment of PSHEPs
 - o Financial viability including tariffs of PSHEPs
 - o Model Studies
 - o New Technologies in PSHEPs
 - o Challenges in preparing and evaluation of DPR for PSHEPs
 - o Case Studies & Project Visits
 - o Dam safety Aspect of PSHEPs

PROGRAM FEE

There is no program **fee for participants from Central and State Govt. departments.** Charges for participants from various categories are as below:

Category	Description	Fee in ₹ (per participant)
A.	Central/State/Local Government Depts. including their autonomous bodies:	Nil
B.	'Not for Profit' Central and State PSUs	Nil
C.	Recognized academic institutions, NGOs	1,500/-
D.	Central and State Public Sector Undertakings	10,000/-
E.	Private Companies, individuals	15,000/-

- Discounts applicable: (a) 50% for PSUs of MoJS i.e. WAPCOS & NPCC (no group discount); (b) For others – 20% discount for 3-4 participants; 30% discount for 5 or more participants from the same organization.

For modalities in respect of payment of fee, please refer to our website or contact the Program Coordinator.

RESOURCE PERSONS

The resource persons for the program would be subject experts from CEA, CWC, CWPRS, State Government Organization, Retired/Private Experts etc.

DURATION

08 January – 12th January 2024 (five days)

VENUE

National Water Academy, Khadakwasla, Sinhagad Road, Pune-411 024.
(for more info on NWA, visit <http://nwa.mah.nic.in>)

TARGET GROUP

Graduate Engineers (B E/B Tech) with some years of work experience in the field of Planning/design/implementation/maintenance of water resources structures, of the levels of Superintending Engineer/Executive Engineer, Assistant Executive Engineer and Assistant Engineer.

PARTICIPATION

The nomination of the officers fitting the target profile may be sent to the Program Coordinator/NWA (nwa.mah@nic.in) at the latest by 28th December 2023. Confirmation on acceptance of nominations will be sent by email by 29th December 2023. Nominated/Sponsoring officers may please indicate their Fax No./Mobile No. and E-mail address for timely information on this account. All participants may report the training on 8th January 2024 @ 0930 Hrs and plan their return journey on 12th January after 1900 Hrs. All participants will have to reach the venue of training and plan their return journey on their own.

LOCAL HOSPITALITY

NWA has a self-contained residential campus, and out-station participants would be provided with accommodation in the NWA Hostel as per the availability. Lodging & boarding charges as per government rates (about Rs.275/- per person per day) will have to be borne by the participants. Participants may also make their own stay arrangements if they wish. Airport/Railway station pickup/drop will also have to be arranged by the participants themselves.

WEATHER

During the month of January 2024, the average temperature of Pune may be around 22°C.

CONTACT

S K Das, Program Director
National Water Academy, CWC, Khadakwasla R S, Pune – 411 024
Tel: 020 – 24380528; Mob :9818707541, Email: nwa.mah@nic.in; nwa.pune@gmail.com;
sudistakdas@gmail.com