




संख्या 5/04/2018- प्रशिक्षण/५४२-६०३

दिनांक ३१ जनवरी, 2018

विषय: Workshop on "Abrasive Erosion in Hydro plants Modern" at IIT Roorkee during 23-24 Feb, 2018 reg.

कृपया उपरोक्त विषय से संबंधित पत्र/विवरणिका की प्रति संलग्न पायें। अनुरोध है कि यदि कोई नामांकन हो तो दिनांक **07/02/2018** तक निश्चित रूप से सदस्य/मुख्य अभियन्ता, मा.सं. प्र.(मा. सं. प्र. से संबंधित.)/ मुख्य अभियन्ता रा. ज. अ. (रा. ज. अ. से संबंधित) अनुमोदन के पश्चात भेजने की कृपा करें। साथ में नामित अधिकारियों के जीवन वृत्त भी संलग्न करें, जिसमें उनके द्वारा अब तक के सेवा काल के दौरान भाग लिए गए विभिन्न कार्यक्रमों का ब्यौरा दर्शाया गया हो।

यह भी सूचित किया जाता है कि नामित अधिकारी के नामांकन दर्शाई गई तिथि के उपरान्त प्राप्त होने पर विचार नहीं किया जाएगा साथ ही अध्यक्ष की स्वीकृत होने के पश्चात नाम वापस लेने की अनुमति नहीं दी जाएगी।


31.01.2018
(रमेश कुमार)
निदेशक (प्रशिक्षण)

1. अध्यक्ष केन्द्रीय जल आयोग के निजी सचिव, नई दिल्ली।
2. सदस्य जल आयोजन एवं परियोजन / अभिकल्प एवं अनुसंधान / नदी प्रबंध के निजी सचिव, केन्द्रीय जल आयोग, नई दिल्ली
3. सभी मुख्य अभियन्ता केन्द्रीय जल आयोग
4. निदेशक समन्वय, आयोजन एवं परियोजन / अभिकल्प एवं अनुसंधान / नदी प्रबंध, के निजी सचिव केन्द्रीय जल आयोग, नई दिल्ली
5. सचिव/निदेशक (तकनीकी समन्वय) केन्द्रीय जल आयोग, नई दिल्ली
6. सभी निदेशक/ अधीक्षण अभियन्ता, केन्द्रीय जल आयोग, नई दिल्ली
7. कनिष्ठ अभियन्ता, प्रशिक्षण निदेशालय, कृपया परिपत्र को केन्द्रीय जल आयोग के वेब साइट पर अपलोड करें



भारत सरकार
Government of India
केन्द्रीय जल आयोग
CENTRAL WATER COMMISSION
प्रशिक्षण निदेशालय
Training Directorate

No. 5/04/2018-Trg/558-603


Dt. 31.01.2018

Subject: Workshop on "Abrasive Erosion in Hydro plants Modern" at IIT Roorkee During 23-24 Feb,2018 reg.

Please find enclosed herewith a copy of the letter/ brochure on the above subject. It is requested that nominations if any, may be forwarded to this office with the approval of the Concerned Member/ Chief Engineer (HRM) in respect of HRM Unit/ Chief Engineer, NWA, CWC, Pune in respect of NWA Unit positively by **07.02.2018**. A copy of the Bio data of the nominated officers may also be enclosed along with the nominations indicating the number of events so far attended by them.

It is for information that nominations received after the stipulated date will not be considered and also nominations once approved by Chairman, CWC, will not be allowed to be withdrawn.

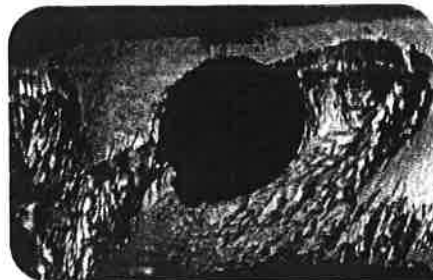
Encl: As above


(RAMESH KUMAR)
Director (Training)

1. PPS to Chairman, CWC, New Delhi.
2. PPS to Member D&R/RM/WP&P, CWC, New Delhi.
3. All Chief Engineers, Central Water Commission.
4. Director, D&RC, RMCD, WP&PC CWC, New Delhi.
5. Secretary/ Director (TC), CWC, New Delhi.
6. All Directors/ Superintending Engineers, Central Water Commission.
7. J.E.(Trg), CWC, New Delhi to upload this circular on CWC website www.cwc.nic.in/intranet portal.

Workshop on
ABRASIVE EROSION
IN
HYDRO PLANTS

Feb 23 – 24, 2018
at IIT Roorkee



Alternate Hydro Energy Centre
Indian Institute of Technology Roorkee
Roorkee – 247667 (Uttarakhand) INDIA

BACKGROUND

Himalayas being the young mountain has substantial soil erosion resulting in high sediment concentration in rivers. Due to the high suspended sediment, the hydropower development encounters two major challenges (a) loss of storage capacity of reservoirs due to settling of suspended sediments and (b) hydro-abrasive erosion of turbine parts and hydraulic structures. The second challenge of hydro-abrasive erosion is the focus of the workshop.

The complications associated with hydro-abrasive erosion are not new, but the issue is increasingly emphasized because of the worldwide growing energy demand and hydropower development in Himalayan region. Hydro-abrasive erosion has a detrimental effect on generation efficiency, leading to significant maintenance costs and causing higher downtime of turbines with corresponding generation losses. Sometimes even replacement of turbine runner and other components are required. The abrasion also has been observed at the civil structures made of concrete, steel and masonry.

Although the relevant parameters for hydro-abrasive erosion, such as suspended sediment concentration, size, hardness and shape of particles, relative velocity between the flow and structure as well as turbine geometry and material, have been identified, the effect of these parameters on the hydro-abrasive erosion is not fully understood. To take adequate measures in design, construction, manufacturing and operation and maintenance of hydropower plants (HPPs), the knowledge on sediment, hydro-abrasive erosion as well as efficiency reduction needs to be improved and relevant parameters have to be quantified correctly/accurately.

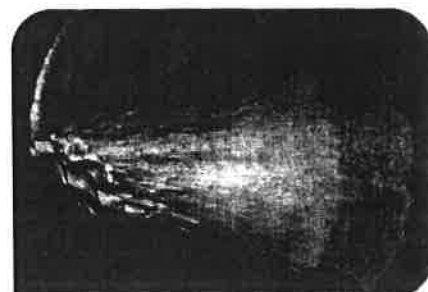
The monitoring of incoming sediment throughout the year and measurement of hydro-abrasive erosion with reduction inefficiency is not common due to lack of awareness and practically proven measurement techniques / instruments. For optimization of a hydropower plant, systematic erosion studies with advanced instruments and methodologies are required with simultaneous measurement of hydro-abrasive erosion in turbines, suspended sediment and efficiency reduction to decrease the losses in electricity generation.

Even though various research groups from academia, government, plant owners, individuals and equipment manufacturers are working on hydro-abrasive erosion issues in hydro power plants, a need is felt to organize a common platform for sharing experiences, discussions, deliberations and providing focused efforts.

To study and mitigate the hydro-abrasive issues in Himalayan region, a laboratory with state of the art instrumentation is established at AHEC, IIT Roorkee recently with support from the Ministry of New and Renewable Energy, Govt. of India. Both laboratory as well as online instruments like LISST-Infinite, AquaScat, Solitax, Camsizer, Analysette 3 Pro etc. are available for sediment measurement along with high end 3D-scanners like Comet L3D, HandyScan, Comet Rotary for erosion measurement.

OBJECTIVE

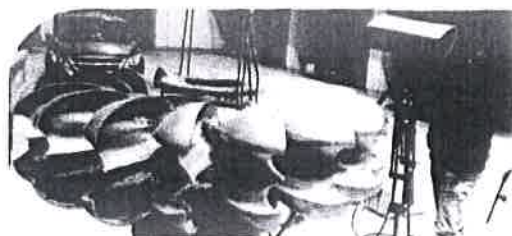
To create general awareness on technical, measurement and financial aspects of hydro abrasive erosion among the hydropower developers, policy makers, manufacturers and academia, a workshop is planned on Feb 23 – 24, 2018 at IIT Roorkee.



TOPICS FOR WORKSHOP

The workshop is expected to meet following objectives:

1. Hydro abrasive erosion – experience and mitigation.
2. Measurements in hydro plants for hydro-abrasive erosion studies.
3. Instruments/methods of measurements for suspended sediment and hydro-abrasive erosion.
4. What to be done by hydropower plant operators?
5. Steps involved in optimization studies for hydro-abrasive erosion.
6. Financial and economic analysis of hydro-abrasive erosion.



How to Register : Participation is only by invitation. Confirmation for participation may be sent to organizer by email or fax or post latest by Feb 18, 2018.

Accommodation : May be arranged on request in the institute guest houses and nearby hotels

Workshop Venue : AHEC, IIT Roorkee, Roorkee – 247667 India

PROGRAMME SCHEDULE

Feb 23, 2018 (Friday)

Time	Particulars
10:00-10:30	Registration
10:30-11:00	Welcome and opening remarks
11:00-11:30	Coffee/Tea Break
11:30-13:30	First Session: Hydro abrasive erosion – experience and mitigation
13:30-14:30	Lunch
14:30-16:00	Second Session: Instruments for measurements of sediment and hydro-abrasive erosion
16:00-16:30	Tea Break
16:30-18:00	Third Session: What need to be done by hydropower plants operators

Feb 24, 2018 (Saturday)

Time	Particulars
9:30-11:00	Fourth Session: Steps involved in optimization studies for hydro-abrasive erosion
11:00-11:30	Coffee/Tea Break
11:30-12:30	Fifth Session: Financial and economic analysis of hydro-abrasive erosion
12:30-13:30	Closing session – Workshop Findings, recommendations and action plan
13:30-14:30	Lunch
14:30-16:00	Visit the facilities available at AHEC IITR for sediment and hydro-abrasive erosion measurement

FEE : There is no fee for participation.

INVITEES PARTICIPANTS

Government	: CEA, UJVNL, JKPDC, HPSEBL, HPPCL, SJVN, NHPC, BBMB, NEEPCO, MeSEBL, DOHP, SIKKIMDOP
Private Developers	: JSW, Greenco, TEESTA
Foreign Developers	: NEA, DRUK, StateKraft
Turbine Manufacturers	: Voith, Andritz, GE, BHEL, Toshiba, HPP, Flovel
Sediment Monitoring Equipment Manufacturers	: Sequoia, Aquatek, Hydrovision, Hach, Xylem, Rittmeyer, Endress + Hauser
Academics	: IIT Roorkee, IIT Madras, IIT Mandi, NIT Hamirpur
Foreign Universities	: HSLU, ETH, NTNU, KU

CONTACT PERSON :

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WORKSHOP ON
ABRASIVE EROSION IN HYDRO PLANTS

ON
Feb 23 – 24, 2018 AT IIT Roorkee

Registration form

Name : _____
(In Capital Letters)

Designation : _____

Organization : _____

Address (Office) : _____

Telephone No. : (O) _____ (R) _____

Mobile : _____

Fax No. : _____

Email : _____

Specialisation : _____

Dated:

(Signature of participant)

Nomination form may be sent to:

Prof. Arun Kumar

Professor and MNRE Chair Professor

Alternate Hydro Energy Centre

Indian Institute of Technology Roorkee,

Roorkee - 247667

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