

# JALANSH



#### The Monthly Newsletter of Central Water Commission

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#### S. Masood Husain, Chairman, CWC Message

This year's April month was welcomed with the celebration of "74th Foundation Day" on 5th April. On this day in 1945, the Central Waterways, Irrigation and Navigation Commission (CWINC) was established which is precursor to the present day Central Water Commission (CWC). One of the objectives of the Commission was to develop and secure planned utilization of water resources of the country. Since its inception, the Commission has played a pivotal role by rendering its technical knowledge and expertise in the development of various important major projects in the country like Hirakud Dam, Bhakra Dam, Sardar Sarovar Dam, Tehri, etc.

meetings were organized during the month. On 10.04.2019, the first discussed the constraints in meeting of the Monitoring Committee for the Shahpur Kandi Dam Project was held under the chairmanship of Sh. S. K. Haldar,

Member (WP&P), CWC, Durina the meetina decisions reaardina actions to be taken by both the States viz. Punjab and J&K were finalized so as to complete the Project in timebound manner. Sh. S. K. Haldar also chaired the 19th meeting of Technical Evaluation Committee (TEC) for the North Koel Project on 12.04.2019 wherein various issues /bottlenecks in implemention of the project were discussed.

A National Workshop on Impact Assessment of 10 Projects completed under Accelerated Irrigation Benefits Program (AIBP) was organised by CWC at New Delhi on 23.4.2019. During the workshop, the findings of studies of impact assessments of these projects were presented and deliberated. The views expressed by various stakeholders attending the workshop were incorporated in the report and the final report of the studies have been submitted by the consultants.

A Seminar on "Use of Technical Textiles in Water Resources Works" was organised by the Ministry of Water Resources, River Development and Ganga Rejuvenation at New Delhi on Various seminars/ workshops and 29.04.2019. During the Seminar speakers from various fields usage of Technical Textiles in water resources works and way forward for increasing the same were outlined.

During the month, CWC Officers also actively participated in various other conferences / workshops organised and shared their knowledge and expertise. These include participation of Sh. T. K. Shivarajan, Chief Engineer at Inter-Ministerial Conference organized by National Institute of Rock Mechanics and Sh. Goverdhan Prasad, Director, CWC at National Workshop on "Developing Comprehensive and Scientific Mechanism/Model for Forecasting of Hydrology for Hydro Electric Project" organized by CBIP.

With increased emphasis on social media to showcase all works and activities of Central Water Commission, CWC is nowadays actively sharing water sector knowledge, expertise and domain activities through social media platforms like Facebook, Twitter, Instagram, etc. I take this opportunity to thank all officers of the organization who have shown interest in the use of this medium and request all others to make use of these accounts to highlight their activities on regular basis.

On 5th April 2020, CWC will be celebrating its 75th anniversary of its foundation. So, I appeal to all officers of CWC to contribute and put forth their ideas to make 75th year of CWC a very special and memorable.

# **Upcoming Events**

#### National Conference on Flood Early Warning for Disaster Risk Reduction

30-31 May 2019, Hotel GreenPark, Hyderabad, India Jointly Organized by :National Remote Sensing Centre (NRSC), ISRO & Central Water Commission, MoWR

Under the aegis of National Hydrology Project (NHP) Ministry of Water Resources, River Development & Ganga Rejuvenation Government of India



Ganga Rejuvenation, Government of India

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Last Date For Submission of synopsis – June 30, 2019

SEMINARS - 15

SPECIAL SESSIONS - 4

PANEL DISCUSSIONS - 11 BRAINSTROMING SESSIONS - 4

LARGEST WATER RESOURCES EVENT

# **CWC Foundation Day- 5th April**



Dr. B. R. Ambedkar Member(Labour) Viceroy's Executive Council (1942-46)



Dr. A. N. Khosla Founding Chairman (1945-53)

Central Water Commission (erstwhile Central Waterways, Irrigation and Navigation Commission - CWINC) was established on April 5, 1945 with an objective to develop and secure planned utilization of water resources in the country.

The 74th Foundation Day was celebrated at CWC, Head Quarter, New Delhi on 5th April 2019. CWC has now entered in its 75th year and to celebrate the same several seminars, workshops & other activities have been planned throughout the year.

The credit for the establishment of CWINC is attributed to Dr. B. R. Ambedkar, under whose able guidance the then Labour Department constituted the Commission. He not only raised the concept and argued for the necessity of having such a technical body at the Centre but also laid down its objectives, organisational structure and programme. The final proposal for establishment of CWINC was prepared by the Department with the help of Rai Bahadur A.N. Khosla, the Consulting Engineer for Irrigation. Dr. Khosla was subsequently appointed as founder Chairman of the CWINC.

Since its establishment in 1945, the organization has expanded significantly in various directions. Being the apex organisation in the field of water resources development and management for nearly seven and half decades, the Commission has been closely associated with planning, investigation, design, construction and management of various projects for water resource development including irrigation, hydro-power generation, flood control and water supply.

The important projects in the country wherein, Central Water Commission has played a pivotal role by rendering its technical knowledge and expertise include Hirakud Dam, Bhakra Dam, Sardar Sarovar Dam, Tehri, Naptha Jhakri, Srisailam, Farakka Barrage, Polavaram Multipurpose Project, etc. Important projects in neighbouring countries which have been designed by Central Water Commission include Punatsangchu Stage-l&II HEP, Tala HEP, Chukha HEP (Bhutan), Arun-III HEP (Nepal) and Salma Dam (Afghan-India Friendship dam). It is worthwhile to point out that the Interlinking of Rivers (ILR) programme as adopted by Gol envisaging inter-basin transfer of water from surplus basins to deficit basins was originally conceived by CWC in 1980 as National Perspective Plan (NPP) for Water Resources Development.









The CWC has also played a significant role in resolving interstate issues among various States regarding use of water of interstate rivers. Many agreement have been formed among States though consultation facilitated by the CWC. The data collected by CWC has given an unbiased basis for reaching agreement among the States on water allocation.

At present, Central Water Commission comprises of a Chairman and 3 Members heading three wings namely, Designs and Research (D&R) Wing, Water Planning and Projects (WP&P) Wing and River Management (RM) Wing. Most of the posts including that of Chairman in CWC are manned by officers of Central Water Engineering Service (CWES) Group 'A' Cadre.

The CWES Group A Cadre, which is only organised Service in water sector, was formally constituted in 1965 comprising of officers having Civil Engineering and Mechanical Engineering backgrounds. CWES officers also hold many important posts in the Ministry of Water Resources, River Development & Ganga Rejuvenation and its other organisations namely Ganga Flood Control Commission (GFCC), Farakka Barrage Project (FBP), Krishna River Management Board (KRMB), Godavari River Management Board (GRMB), Cauvery Water Management Authority (CWMA), National Water Development Agency, National Water Mission, National Mission for Clean Ganga, etc.

The activities of the Commission include providing consultancy services to all State Governments as well as to other Central Departments in the fields of irrigation, water supply, flood control and hydropower generation; appraisal of major and medium projects, monitoring the progress of selected major projects throughout the country; collecting, compiling, Storing and disseminating hydrological data throughout the country; and flood forecasting on all inter-State flood prone rivers.

"I visualise that the growth of this body in course of time, into very big organisation with its activities spread over entire length and breadth of India, and its assistance and advice eagerly sought by all provinces and states, to the end that the natural resources of any region may be exploited for maximum benefit and unified development."

Dr. B. R. Ambedkar's Vision for CWINC

### Seminar on Use of Technical Textiles in Water Resources Works

A Technical Seminar on "Use of Technical Textiles in Water Resources Works" was organized by Ministry of Water Resources, River Development and Ganga Rejuvenation at CWC, HQ, New Delhi on 29.4.19.

Technical Textiles are being used globally for last several decades. These materials have provided innovative engineering solutions for several issues related to civil and geotechnical aspect during construction & operation of various infrastructures in water resources projects. Even though Technical Textiles have been extensively used in developed and many developing countries, India has yet to capitalise its technical, economical and environmental benefits on large scale. Various parts of India are subjected to floods and environmental degradation. In some of the terrains, the flood management interventions can rely on Technical Textiles tubes, containers and bags. Technical Textiles have been found to perform better than concrete as water protection component because of its permeability, flexibility and ease of underwater placement. The Seminar highlighted various application areas, best practices and mechanisms for encouraging larger usage of Technical Textile in Water Resources Sector. It provided a platform to all the concerned stakeholders for brain-storming for creating a roadmap to take the Technical Textiles uses to the next level.

The experts from various Central and State Government Departments working in Water Resources, Institutions, Colleges, Universities, Manufacturers Associations, Trade Associations, Consultants and Contractors participated in the Seminar. The topics discussed during the Seminar include Issues of Standards, Benchmarking & Testing of Technical Textiles, Use of Technical Textiles in projects for Water Resources Conservation, Advanced methods of Using Technical Textiles in various application, Contractual Matters related to Technical Textiles etc.

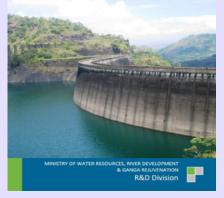


Member D&R, CWC and Sh. S.L. Gupta, Director CSMRS during the Seminar (L to R)

The Inaugural Session of the Seminar was chaired by Shri S. Masood Hussain, Chairman, CWC. Smt. T. Rajeshwari, Addl. Secretary, MoWR, RD and GR, Shri N.K. Mathur, Member D&R, CWC, Shri S.L. Gupta, Director CSMRS and Shri Anuj Kanwal, Director, R&D Division, MoWR, RD and GR also shared the dais during the Inaugural Session of the Seminar.

Chairman, CWC released the "Practice Manual on use of Technical Textile in Water Resources Works" on the occasion. This can be accessed from following URL:

http://mowr.gov.in/sites/default/files/ Technical\_Textile\_Practice\_Manual.pdf Practice Manual for Use of Technical Textiles in Water Resources Works



# Dam Rehabilitation and Improvement Project (DRIP)

During the month of April, a team of Central Water Commission officials visited and inspected various dams / barrages namely, Maithon and Panchet Dams in Jharkhand; Rengali and Samal Barrage in Odisha; and Manimukthanadhi, Willingdon, Servelar, Sholayar and Aliyar Dams in Tamil Nadu to monitor the progress of implementation of rehabilitation works under DRIP. Further, a workshop for finalization of Emergency Action Plan (EAP) of 9 dams of Tamil Nadu under DRIP was also conducted at Coimbatore during April 22-26, 2019.

# **Review Meeting at Lucknow**

Sh. U. P. Singh, Secretary, MoWR, RD & GR chaired a meeting on 29.4.19 at Lucknow to review the projects under implementation in Uttar Pradesh. Various Officers from CWC, Irrigation & Water Resources Department, Uttar Pradesh and Command Area Department, Uttar Pradesh attended the meeting. During the meeting, Secretary laid emphasis on several aspects related to efficient and optimal management of water resources. The important observations / decisions of the meeting were:

- Measures need to be taken to improve the water use efficiency.
- There is need for reforms in the management of water resources and irrigation system.
- The conjunctive use of surface and ground water needs to be promoted
- We need to document best practices in management of projects. Audio visual media can be used for showcasing the works to people
- A small media unit can be formed in the State to publish a small magazine/ newsletter showing the monthly activities of the department.
- Govt. of UP was requested to organise a workshop on the Water Governance, Regulatory Authority etc.



Sh. U.P. Singh, Secretary, MoWR, RD&GR chairing the Review Meeting at Lucknow on 29.4.19

Impact Assessment of Accelerated Irrigation Benefits Program (AIBP) on 10 Completed Projects

A National Workshop on Impact Assessment of Completed Projects under Accelerated Irrigation Benefits Program (AIBP) was organised by M/s Academy of Management Studies (AMS), Lucknow in technical association with Central Water Commission at CWC HQ New Delhi on 23.4.2019. During the workshop, the representative of the AMS made presentation on the study conducted by them. The workshop was inaugurated by Sh. S. Masood Husain, Chairman, CWC.

Under Accelerated Irrigation Benefit Programme (AIBP), the Central Government is providing financial assistance in the form of grants to the State Governments for expediting the completion of ongoing Major/Medium Irrigation (MMI) Projects that are in their advanced stage of completion or under Extension, Renovation and Modernization (ERM). Considering the large volume of capital invested in these irrigation projects, a need was realized to assess the impact created by these AIBP aided projects against the benefits envisaged at the time of their approval. For the purpose, Central Government engaged AMS, Lucknow to conduct a study for evaluation of impact of 10 completed AIBP projects. These projects were selected from 5 different zones across the country.

The objectives of the study were categorised under 3 broad heads as follows:

Project Analysis mainly involves reviewing the performance of the project vis-à-vis envisaged targets and evaluating the impact and outcomes of AIBP on irrigation projects.

Implementation and O&M mainly involves the assessment of (i) extent of utilization of irrigation potential created; (ii) strength and weakness of projects; (iii) nature & effectiveness of procedures/ modalities being used for equitable and effective distribution of water; and (iv) the nature & extent of activities taken up for promoting participation of grass root level stakeholder/local community in planning, implementation and



maintenance of assets created under the project.

Impact Evaluation mainly involves evaluation of the nature & effectiveness of On-Farm Development (OFD) works; nature & extent of socio-economic development; changes in environment/ecology; extent of acceptability of project; purpose for which the acquired land is used; seek the perception, views and opinions of projects beneficiaries; and assess the nature & extent of rehabilitation of displaced families.

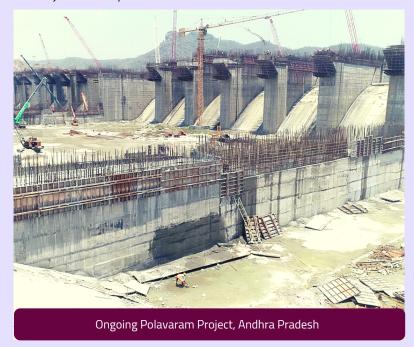
The projects selected for the study are (i) Shah Nahar Project, Himachal Pradesh; (ii) Hindon Krishni, Uttar Pradesh; (iii) Hawaipur LIS, Assam; (iv) Upper Kolab Project, Odisha; (v) Jhuj Project, Gujarat; (vi) Mahi Bajaj Sagar, Rajasthan; (vii) Priyadarshani Jurala, Telangana; (viii) Muskinalla Medium Project, Karnataka; (ix) Purna Medium Project, Maharashtra; and (x) Sindh Phase-I Project, Madhya Pradesh. The workshop was organised to discuss the draft report prepared by the consultant with the stakeholder with a view to obtain their views for improvement of the same.

After completion of the workshop, the consultant has revised the draft report based on the views expressed by the stakeholders. The final report has been submitted by the consultant.

# Progress of Polavaram Project, Andhra Pradesh

Progress of Polavaram Project as on 21.04.2019 as reported by Polavaram Project Authority.

S. No.	Description	% Total Progress till 21.4.19
1	Overall Project	69.40
2	Head Works	61.52
3	Main Dam Package	61.51
4	<b>Excavation</b> (Spillway, Spill Channel, Approach Channel, Pilot Channel & Left Flank)	84.90
5	Concrete (Spillway, Stilling Basin &Spill Channel including Crevices filling)	73.30
6	Radial Gates Fabrication	67.20
7	Diaphragm Wall	100
8	<b>Jet Grouting</b> cut off for Coffer Dams	100
9	U/s Coffer Dam	44.35
10	D/s Coffer Dam	26.12



#### 19th meetings of North Koel Reservoir Project

The MoWR,RD&GR constituted a Technical Evaluation Committee (TEC) in May, 2017 under the chairmanship of Member (WP&P), CWC for completing the balance works of North Koel Project. The Committee was also entrusted to monitor the physical and financial progress and performance of the work and recommend release of fund for the project. The 19th meeting of Committee was held on 12.4.19 at New Delhi under the Chairmanship of Shri S K Haldar, Member(WP&P), CWC. During this meeting, the issues regarding Tender of Right Main Canal work for Jharkhand portion up to Bihar border, Revised Cost Estimate of the Project, Forest Clearance - Stage-II, Land acquisition, Concurrent evaluation study of the Project in Jharkhand and Bihar through an independent agency, release of payment to WAPCOS and proposal for reimbursement of central share for expenditure incurred by WRD, Govt. of Jharkhand were discussed.



# First meeting of Monitoring Committee of Shahpur Kandi Dam, Punjab

Shahpur Kandi Dam Project is being implemented by Govt. of Punjab as National Project. The estimated cost of the project is Rs. 2715.70 crore. In 2018, the Central Govt. has agreed to provide financial assistance for implementation of the irrigation component of the project to the tune of Rs. 485.35 crore. A Monitoring Committee under the chairmanship of Member(WP&P), CWC has also been constituted by central Govt. to oversee/monitor the implementation of the project.

The first meeting of the Committee was held on 10.04.2019. The important decisions taken during the meeting are:

- Both States were advised to have regular meetings for better coordination
- Punjab to ensure timely availability of funds for power component.
- Status of progress of the project to be shared regularly.





Physical Status of Shahpur Kandi Dam, Punjab			
Description	Total Qty (cum)	Executed upto 31.03.19	
Main Dam Earthwork	1840000	1247939	
Main Dam Concreting	1105000	92024	
Hydel Channel Head Regulator Earthwork	105500	87320	
Hydel Channel Head Regulator Concreting	23595	14923	
Ravi Canal Head Regulator Earthwork	36000	Nil	
Ravi Canal Head Regulator Concreting	6700	Nil	
Hydel Channel Earthwork	3900000	2771040	
Hydel Channel Concreting (lining)	42864	32445	
Bridges on Hydel Channel excavation	24000	21100	
Bridges on Hydel Channel Concerting	11400	701	
Bridges on Hydel Channel Filling	12000	Nil	
Power Houses and allied works Excavation	4518000	Nil	
Power Houses and allied works Concreting	366970	Nil	

Quantity executed during 2018-19: Main Dam Earthwork: 50,000 cum, Main Dam concreting: 8000 Cum

# National Workshop on Developing Comprehensive & Scientific Mechanism/Model



Sh. Goverdhan Prasad, Director presenting on Snow-melt runoff modelling critical to hydropower projects during National Workshop on Developing Comprehensive & Scientific Mechanism/Model for forecasting of hydrology for hydroelectric projects organized by CBIP at India Habitat Centre on 25 April 2019

#### MoU for Sedimentation Assessment Study of Reservoirs

CWC has engaged Maharashtra Engineering Research Institute (MERI), Nashik for conducting the Sedimentation Assessment Study of 40 reservoirs using remote sensing technique. A Memorandum of Understanding (MOU) regarding the above

mentioned work has been signed on 01st April 2019 between CWC and MERI, Nashik. In addition, CWC is also conducting the sedimentation Study of Matatila reservoir in Uttar Pradesh in-house through remote sensing technique.

# Indian National Committee on Surface Water (INCSW)

The 5th meeting of Indian National Committee on Surface Water (INCSW) was held under the chairmanship of Sh. S. Masood Husain, Chairman INCSW and CWC on 16th April 2019 at CWC HQ, New Delhi. INCSW is a Committee constituted by MoWR,RD&GR mainly to give advice to Central/State Governments and their agencies on matters related to Surface Water, to coordinate the R&D activities in Surface Water in general and under R&D Programme of Ministry in particular. INCSW is also representing India in International Commission on Irrigation and Drainage (ICID) as National Committee.

In the meeting, the Committee discussed the present status of R&D Schemes being funded by MoWR,RD&GR and the challenges faced by INCSW Secretariat in monitoring and coordinating their implementation. The members of the Committee also deliberated on matters related to nomination of non-permanent members of the Committee. Detailed discussions were also held on various



other issues namely, streamlining of R&D Guidelines, modification of the mechanism for processing new R&D schemes for funding by the Ministry and broad basing of Indian National Committee of ICID.

# **Reservoir Monitoring**

CWC is monitoring live storage status of 91 reservoirs around the country on a weekly basis and is issuing a bulletin every Thursday.

The total live storage capacity of these 91 reservoirs is 161.993 BCM, which is about 63% of the live storage capacity of 257.812 BCM which is estimated to have been created in the country.

As per the reservoir storage bulletin dated 25.4.19, the live storage available in these reservoirs is 42.526 BCM,, which is 26% of the total live storage capacity of these reservoirs. This is 114% of the live storage of the corresponding period during last year, and 104% of the average storage over the last ten years.

# 

# State Best Practices- Mukhyamantri Jal Swavlamban Abhiyan, Rajasthan

The Mukhyamantri Jal Swavlamban Abhiyan (MJSA) was initiated by the Government of Rajasthan in January 2016 with an objective of making villages self-sufficient in water by implementation of water conservation and water harvesting related activities in rural areas. For achieving the aim, various works for construction of water conservation structures were implemented through people's participation by motivating villagers & beneficiaries. This resulted in creation of additional storage capacities to harvest 128 Mcum (4516Mcft) water coupled with extensive and vigorous watershed development activities in an exhaustive and scientific manner. The interventions helped in intercepting additional 11170 Mcft monsoon water, which resulted in:

- Better availability of potable water during summer.
- Improvement in ground water table
- Revival of defunct handpumps, tubewells & open wells.
- Enhanced water availability for lean season irrigation resulting in increased area under lean season crop & orchard.
- Developing and sustaining flora & fauna.
- Mitigating drought abuses and reducing plight of masses.





# **Gallery**



Sh. N. K. Mathur, Member (D&R) chaired a meeting regarding development of DHARMA software and its training module on 3.4.19



Sh. P.M.Scott, Chief Engineer, B&BBO, CWC at Yarlung Tsangpo/ Brahmaputra entry point to India from China at Gelling and inspecting CWC Tuting GD site



Sh. N. K. Mathur, Member (D&R) chaired a meeting regarding development of Hydrological Design Aids (Surface Water)- HDA (SW) on 5.4.19



Sh. N.K. Mathur, Member (D&R) chaired the 3rd meeting of the Empanelment committee to empanel various experts as members of DSRP on 12.4.19



Sh. P.M.Scott, Chief Engineer, B&BBO, Shillong chaired the Coordination meeting for Flood Preparedness at Guwahati on 12.4.19



Sh. S Masood Husain, Chairman, CWC chaired a meeting to discuss and plan CWC's 75th anniversary celebrations and strategies for improvement in CWC's functions with Members and other senior officers on 16-4-19



Orientation Training Program for Newly Promoted Assistant Directors—II/Sub Divisional Engineers of CWC (Batch-II) being held from 22.4.19 to 3.5.19 at NWA Pune



Sh. N. K. Mathur, Member(D&R) chaired a meeting to discuss Concept Note on "Permissible velocity in concrete lined tunnel(HRT) conveying water for power Generation" was held on 23.4.19



Sh. T. K. Shivarajan, CE, Design (E&NE), CWC delivering speech on Rock Mechanics & Engineering Applications, with specific reference to NIRM, at the inter-ministerial conference, New Delhi on 26.4.19

"You have no idea on how much water we waste. Our reservoirs do."

#### Water Sector- News

- Aviral Ganga! 2 hydro projects dead in water for threat (Pioneer, 3 / 19)
- 'Sudden release of water from dams worsened Kerala floods' (The Hindu, 4.4.19)
- Leather industry hit by Clean Ganga plan (Business Standard, 5.4.19)
- (The Times of India, 6.4.19)
- Breach threat as mining mafia damages Yamuna embankment (Tribune, 10.4.19)
- Namami Gange gets global recognition at the world summit (Indian Express, 11.4.19)
- NGT forms monitoring panel to prepare national plan for polluted rivers (Statesman, 12.4.19)
- Worried over climate-induced losses, India seeks global plan (The Times of India, 17.4.19)
- Ganga has higher proportion of antibacterial agents: study (The Hindu, 20.4.19)
- O 'Doha Model' for irrigation (Millenium Post, 22.4.19)

# History- Tehri Dam, Uttarakhand, "The Highest Dam in India"





#### Salient Features

- 260.5 m high and 592 m long
- Part of Tehri Dam & Hydro Power Project commissioned in 2006-07.
- Project consist of an underground power house located on the left bank having 1000 MW capacity
- Construction & operation of dam & power house was entrusted to Tehri Hydro Development Corporation (THDC)
- It is earth & rockfill dam.
- Spillway system one chute spillway & four shaft spillways designed for PMF of 15540 cumec and a drop of 220m
- Reservoir has gross storage capacity of 3540 MCM and effective storage capacity of 2615 MCM

#### Benefits

- Project intended to provide additional irrigation to 2.70 lakh hectare in the command of Lower Ganga, Parallel Lower Ganga, Madhya Ganga Stage - I & Agra Canal systems
- Stabilises irrigation in 6.04 lakh hectare in the existing command
- Supplies drinking water to Delhi and UP

#### Role of CWC

- CWC provided design consultancy for the project at construction stage. The design for Chute & Shaft Spillways (Morning Glory) was the special features of the dam. The design of dual galleries provided in dam to ensure proper monitoring of its functioning is also unique
- Also rendering consultancy for remedial measures to various post-commissioning problems related to civil structures
- Member (D & R), CWC is a Member of the Board of Directors of THDC.
- CWC has been advising THDC and Ministry of Power on safety aspects of Tehri Dam .
- The National Committee on Seismic Design Parameters under the chairmanship of Member(D&R), CWC with its secretariat in CWC has provided seismic design parameters for ensuring earthquake resistant design of the project.



#### **Central Water Commission**

An attached office of Ministry of Water Resources, River Development and Ganga Rejuvenation, Govt. of India

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