



S. K. Haldar
Chairman

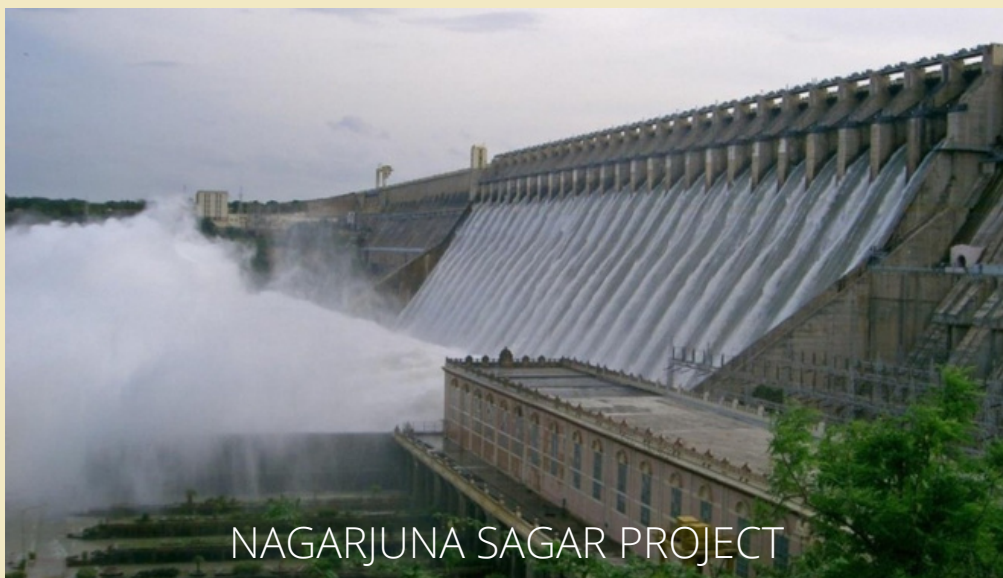
Message

In the recent cabinet reshuffle, two new Ministers of States were appointed for the Ministry of Jal Shakti. Shri Prahlad Singh Patel, Minister of State for Food Processing Industries and Jal Shakti and Shri Bishweswar Tudu, Minister of State for Jal Shakti and Tribal Affairs were briefed about the activities of CWC and the current status of progress of work after their charge assumption in the Ministry. Hon'ble MoS were informed about the Dam Rehabilitation and Improvement Project (DRIP) which is a State sector scheme formulated to bridge the funding gap and provide urgent finance to States for repair and maintenance of Dams. Key achievements under DRIP were highlighted which was closed on 31.03.2021. They were also informed about the Next phase of DRIP i.e. DRIP Phase – II & III approved by the Union Cabinet, which is at an advanced preparatory stage.

Increasing population and competing demands from the various sectors are putting immense pressure on finite natural resource of water. There are ever increasing number of disputes among riparian states of Inter-state Rivers. Andhra Pradesh Reorganization Act 2014 (APRA) contains provisions for the effective management of river waters in the states of Andhra Pradesh and Telangana. Constitution of the Godavari and Krishna River Management Boards and the constitution of an Apex Council for the supervision of the functioning of these Boards are laid down in this Act. As per provisions of Section 87 of APRA, 2014, Government of India issued two gazette notifications on 15.07.2021 for administration, regulation, maintenance and

operation of projects in Godavari and Krishna river basins in the States of Andhra Pradesh and Telangana. One was for the jurisdiction of Godavari River Management Board (GRMB) and another was for Krishna River Management Board (KRMB). This notification was brought out after detailed deliberations with stakeholders as well as by including inputs from CWC. Now respective boards have been given full control over scheduled projects in the Krishna and Godavari basins respectively. Notification is an important step to maintain an equitable flow of benefits from Projects amidst divergent and clashing views of both States.

गीतिका बाल



NAGARJUNA SAGAR PROJECT

CONTENTS

- Presentation before Hon'ble Minister, Jal Shakti and new Minister of States
- 92nd Executive Committee Meeting of Betwa River Board
- 7th meeting of Indian National Committee on Surface Water (INCSW)
- Joint meeting of CWC, NWDA and Govt. of Bihar to discuss intra-state links
- Meeting regarding Ujh Multipurpose Project
- Review of the Status and Issues related to proposed integration of PKS Link and ERC

- Address by Member (WP&P) to participants of training on "Flood forecasting, modelling and disaster management"
- Notification of GRMB/KRMB
- Progress of review of Construction of office in Patna
- 2nd meeting of the Committee for revision of 'General guidelines for Water Audit & Water Conservation'
- Flood Situation in the Country
- 31st meeting of Ghaggar Standing Committee
- Monitoring Group Meeting by Prime

- Minister's Office on North Koel Project
- Activities of CWC under NHP and Progress
- Financial Progress of Schemes
- DRIP
- Visit to proposed Saryu Barrage
- Data Corner
- 54th Governing Council & Annual General Body Meeting of Irrigation Management Training Institute (IMTI), Tamil Nadu
- History-Nagarjunasagar Project

Presentation before Hon'ble Minister, Jal Shakti and new Minister of States

A brief presentation was made on 14.07.2021 to newly joined Hon'ble MoS, Shri Prahlad Singh Patel, Minister of State for Food Processing Industries and Jal Shakti and Shri Bishweswar Tudu, Minister of State for Jal Shakti and Tribal Affairs. They were briefed about the issues handled by CWC including core activities of various wings & their current status. Key achievements made for Dam Rehabilitation and Improvement Project (DRIP) was presented along with the current status of DRIP Phase II and III. Chairman, CWC, Additional Secretary, DoWR, RD&GR, Member(D&R), Member(RM) and other officers from CWC and DoWR, RD&GR participated in the above meeting.



92nd Executive Committee Meeting of Betwa River Board

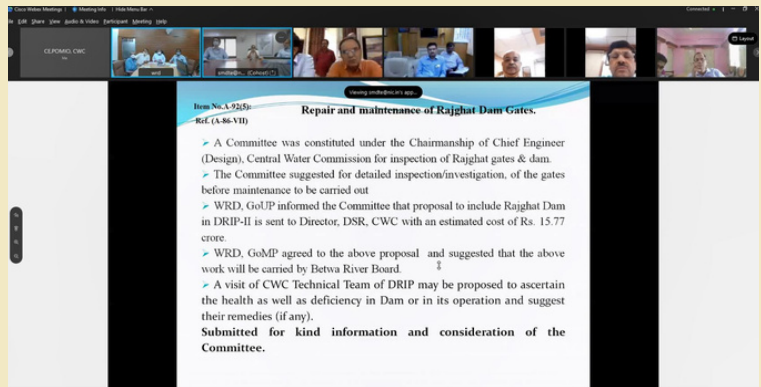
The 92nd Meeting of Executive Committee, Betwa River Board was held virtually under the Chairmanship of Shri S. K. Halder, Chairman, CWC & Executive Committee, Betwa River Board (BRB) on 23.7.2021. The Betwa River Board is a Joint Venture of UP and MP and all expenditure incurred by the Board is to be shared equally by both States. The benefits of the project are also equally shared by both States (UP & MP). The meeting was attended by Engineer-in-Chief, WRD, GoMP & GoUP; Member, WP&P, CWC; Commissioner (State Projects), DoWR, RD&GR; Chief Engineer, Betwa River Board; Secretary, BRB and other officers/officials from CWC, BRB, WRD, GoMP & GoUP and MPPGCL.

The issues related to the Rajghat Project were discussed by the Executive Committee of Betwa River Board and decisions were taken accordingly. Issue related to operation and maintenance (O&M) of Rajghat Dam, possibility of inclusion of Rajghat Dam under DRIP-II, possibility of inclusion of new Hydrological networks on the river and canal networks under NHP, etc. were discussed.

Betwa River is a tributary of river Yamuna and traverses a distance of 654 Km. from its source near Bhopal in MP

7th meeting of Indian National Committee on Surface Water (INCSW)

7th Meeting of the Indian National Committee on Surface Water (INCSW) was held on 28.07.2021 through Video Conferencing (VC) under the chairmanship of Chairman INCSW/CWC. The committee was informed about the status of the Research Schemes in the INCSW Sectt. The members of the committee discussed and recommended the nomination for new non-permanent members of INCSW to DoWR, RD & GR. Further, detailed discussions were also held on various issues like modalities for evaluation & acceptance of the final report of Research Schemes and finalising the topics for invited research. The meeting was attended by officers of CWC, CSMRS, CWPRS Pune, NIH Roorkee, DoWR, RD & GR, DST etc.



up to its confluence near Hamirpur in UP. The development of Irrigation in the Bundelkhand region due to harnessing of the water of Betwa had commenced before the advent of independence. On Betwa River, Parichha Weir was constructed in the year 1885 and laid the network of the Betwa Canal system. To supplement the capacity of Parichha Weir, Dhukwan Weir was constructed in 1909. After independence, the Government of UP undertook the multipurpose project on the river Betwa at Matatila in 1958. Rajghat Dam was constructed across river Betwa in the year 2005 upstream of Matatila Dam.



Joint meeting of CWC, NWDA and Govt. of Bihar to discuss intra-state links

A meeting was held on 06.07.2021 through video conferencing under the Chairmanship of Member (WP&P), Central Water Commission, DoWR, RD & GR, Ministry of Jal Shakti to discuss Intra-State Link Projects of Bihar State. Discussions were held on 10 project proposals of Bihar.

It was noted that investment clearance one link (Kosi-Mechi link) has already been granted. Further, after discussions, officials of Govt. of Bihar agreed to drop proposals of 2 no. links keeping in view of the other ongoing schemes in these areas/non-viability of proposals. Regarding Bagmati-Burhi Gandak through the

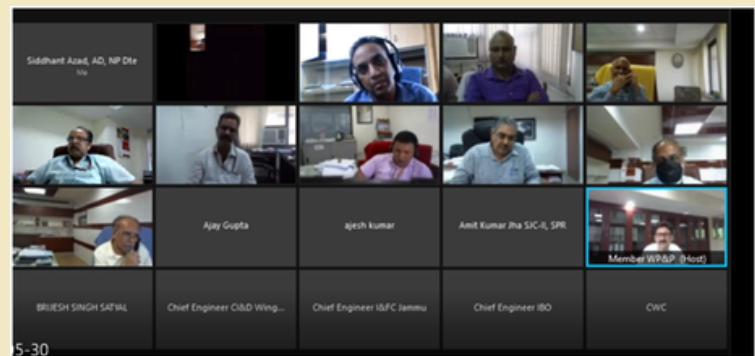
Belwadhar link proposal, officials of Govt. of Bihar informed that revised studies/proposals are under their consideration and would be submitted once finalized. Further, compliances in respect of Burhi Gandak-Noon-Baya-Ganga link and Kosi (Bagmati)-Ganga link shall be submitted by Govt. of Bihar at the earliest. Member(WP&P), CWC also suggested that GFCC, Patna, may also be consulted for Intra state link proposals of Ganga basin having flood components.

The meeting was attended by the representatives from GFCC, NWDA, and WRD, Govt. of Bihar besides CWC.

Meeting regarding Ujh Multipurpose Project

A meeting was held under the chairmanship of Shri Kushvinder Vohra, Member (WP&P), CWC through video conferencing on 07.07.2021 to explore the possibility of re-designing & enhancement of socio-economic scenario for assessment of Benefit-Cost (BC) ratio and to review the status of statutory clearances for the Ujh Multipurpose Project.

Officials from SPR & Indus Wing (DoWR, RD & GR) MoJS, Central Water Commission, Water Resources Department (WRD) and Govt. of J&K had attended the meeting. After detailed discussions, it was decided to request a representative from WAPCOS to attend the next meeting so that the EIA report may be discussed in detail and accordingly, e-flows can be finalized. Further, officers from J&K was directed to finalize the CCA of the project as well as cropping pattern, total irrigated area, the crop water requirement and success rate of the project in consultation with officials of the Central Water Commission.



In continuation, another meeting was held on 20.07.2021. During the meeting, the EIA report as prepared by WAPCOS was discussed in detail. After detailed discussions, it was decided that WAPCOS would submit a revised environmental flow (e-flow) at the earliest. Further, based on the e-flow finalization, future course of action regarding the revision of Power Potential Studies by CEA was also discussed in the meeting.

Review of the Status and Issues related to proposed integration of PKS Link and ERCP

Shri Kushvinder Vohra, Member (WP&P), CWC convened the third meeting of the Working group to review the status and issues related to the proposed integration of Parbati-Kuno-Sindh(PKS) Link and Eastern Rajasthan Canal Project (ERCP) i.e. Modified PKC Link (proposed) on 09.07.2021 through video conference. Officers from CWC, NWDA, Govt. of M.P., Govt. of Rajasthan and WAPCOS participated in the meeting. The design criteria and guidelines followed in the planning of the project were discussed in the meeting. Representatives of both the States i.e. M.P. and U.P. expressed their views. After discussions, it was found that there is some room in respect of exchange of the share of water between two States at some places. In view of the above, Member (WP&P) requested officials of Madhya Pradesh,



Rajasthan and NWDA to have a meeting in the next week to discuss the issue of utilisation of water by MP and Rajasthan including transfer of water. After this, a meeting of the working group can be convened, so that fruitful decision amicable to both the States can be taken.

Address by Member (WP&P) to participants of training on “Flood forecasting, modelling and disaster management”

Sh. Kushvinder Vohra, Member (WP&P), CWC addressed the participants in the inaugural session of the purpose oriented training through distance learning on “Flood forecasting, modelling and disaster management” organized by National Water Academy, Pune on 13.07.2021. The training was attended by participant from almost all organisations of Ministry of Jal Shakti alongwith various institutions, IITs, Engineering Colleges, Universities, State Water Resources, Irrigation and Flood Control Departments.

Member(WP&P), CWC in his address highlighted the importance of such trainings in the context of climate change resulting into temporal and spatial variations in availability of water resources and also floods and



droughts across various regions in the country. He emphasised that people need to learn not only disaster management, but also disaster risk reduction.

Speech Text

I want to share with you a good news as well as bad news. First let's cheer up with the good news that as per latest modelling done by various researchers, overall our monsoon is going to be more and more better till end of this century and we shall be able to produce the requisite food grains to meet the needs of our increasing populations. At the same time, bad news is that due to climate change, temporal and spacial variations in rainfall are going to be more severe resulting into floods and droughts in different areas, may be at the same time.

The above scenario reflects the importance of training course put together by the NWA. Not only do we need to learn disaster management, but also disaster risk reduction. Structural and non-structural measures in this regard would be discussed in detail. Our National Water Policies from time to time have emphasized the importance and preference for non structural measures.

You will not only have the benefit of various theoretical aspects from various scholars put together in course, but also the practical experience which CWC has amassed over the last more than 60 years. First flood forecast was issued for old Yamuna bridge site by CWC in 1958. From there, we have grown from strength to strength. First - Gauge to gauge flood forecast in terms of water level - generally after 24 hours. Today we have more than 1400 various observations site.

Then - To embrace the new technologies for transmission of data, such stations are being converted to telemetry gradually since long.

Then - To meet the expectations of disaster management authorities and people, inundation map service was introduced at 189 stations covering 2,40,000 square km of area around rivers in association with Google. Google is also helping in formulation and dissemination of flood warning in specific areas.

Then - To meet the expectations of people and disaster management authorities for sufficient advance warning time, CWC is currently using rainfall based mathematical modeling for flood forecasts five days in advance.

There is much more in store for learning in such a vast subject matter. It would be really challenging for NWA to cover all the aspects in such a short time of about two and a half weeks. As we have discovered during pandemic times, the video conferencing is now an equally effective tool as is the physical training programmes. All of you could learn new things from your own places without being away from your family. What could be more important during current times? I hope NWA would make the training programme as interesting as possible and as interactive as possible so as to maximise the learning of all the participants. One way could be to provide all the material to participants who come prepared for discussion, question/answer sessions and may be at the end of programme, if some presentation can be made by the participants, I think the purpose of the programme would be achieved.

*“Behtar say behtar ki talaash karo
Mil jaye nadi to samunder ki talash karo
Toot jate hai shishe pathoro se
Tor de pathar aise shishey talash karo”*

*I once again congratulate NWA for putting together such a useful course and my best wishes to all the participants for getting the best out of the learning.
Take care of covid protocols. Be safe.
Thanks a lot for your kind attention.*

Notification of GRMB/KRMB

The Andhra Pradesh Reorganization Act 2014 (APRA) contains provisions for the effective management of river waters in the states of Andhra Pradesh and Telangana. Constitution of the Godavari and Krishna River Management Boards and the constitution of an Apex Council for the supervision of the functioning of these Boards are laid down in this Act.

The Central Government in the exercise of the powers conferred under Section 85 of the APRA, 2014, constituted the two River Management Boards effective from 2nd June 2014 for the administration, regulation, maintenance and operation of such projects on Godavari and Krishna rivers, as may be notified by the Central Government.

The long-pending issue of notifying the Jurisdiction of the two Boards was addressed in the 2nd meeting of the Apex Council held in October 2020, under the Chairmanship of Union Minister, Jal Shakti, Shri Gajendra Singh Shekhawat. In this meeting, it was decided that

Progress of review of Construction of office in Patna

A meeting to review the progress of construction of office building of CWC/ GFCC at Patna under the chairmanship of Member (RM), CWC, was held on 07.07.2021 through VC with Chief Engineer, Central Public Works Department (CPWD) and Superintending Engineer (C), Lower Ganga Basin Organization (LGBO), CWC along with other officials of CPWD & LGBO. Chief Engineer, CPWD briefed about the progress of the construction work of the CWC/GFCC building and informed that all three floors including the ground floor and extension portion have been completed except for some minor peripheral works. Construction of boundary wall which was one of the critical works is also going on full swing and completed up to 70 %. In parallel, filling

2nd meeting of the Committee for revision of 'General guidelines for Water Audit & Water Conservation'

The 2nd meeting of the Committee for revision of 'General guidelines of Water Audit & Water Conservation-2005' was held under the Chairmanship of Shri P. Dorje Gyamba, Chief Engineer (POMIO), CWC on 23.07.2021 through virtual mode. Along with Members of the Committee, special invitees from NRSC, BIS, CEA and officers from Maharashtra attended the meeting. Shri G. L. Bansal, Director, EWU, Directorate, CWC is the Member Secretary of the Committee

Chief Auditor, Water & Irrigation, Govt. of Maharashtra made a presentation on State Specific Guidelines/Act/Regulations being adopted in the State of Maharashtra for Water Audit, findings and recommendations, impact of implementing the recommendations, success stories and difficulties

the jurisdiction of GRMB and KRMB will be notified by the Government of India.

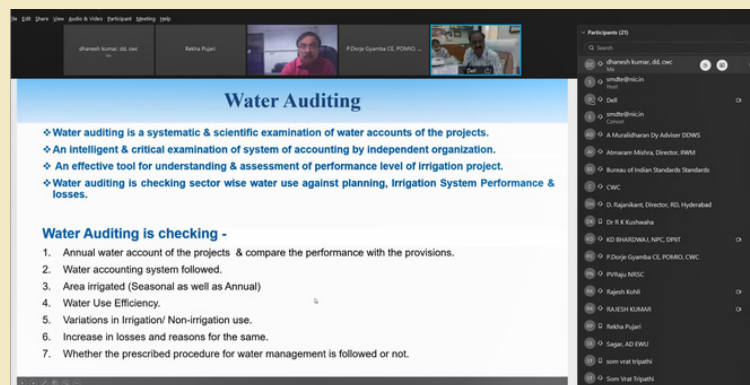
In accordance with the provisions under Section 87 of APRA, 2014, the Government of India has issued two gazette notifications dated 15.07.2021, one for the jurisdiction of GRMB and the other for KRMB, for administration, regulation, maintenance and operation of projects in Godavari and Krishna river basins respectively, in the States of Andhra Pradesh and Telangana.

This decision of the Union Government for notifying the jurisdiction of two Boards would go a long way in enabling the River Boards to discharge their responsibilities to the fullest as mandated in the APRA, 2014 and bring about efficiency in the management of water resources in the two States. The notifications can be accessed from the following link.

<https://static.pib.gov.in/WriteReadData/specificdocs/documents/2021/jul/doc202171641.pdf>

works have also started from the front side of the building, which is, however, getting hampered due to rainfall.

Member(RM), CWC showed his displeasure on the slow progress of work in the past and stressed that CPWD & CWC should ensure that even minor repair works, small patches work etc. should not remain left before completion. Executive Engineer, CPWD informed that there was slow progress of work due to the COVID pandemic situation during last year. Good progress was achieved later on which again slowed down due to restriction of fund utilization. He further informed that works in all respect will be completed by the end of October 2021 subject to availability of funds immediately.



experienced in carrying out water audit. Further deliberations were held among the members and participants of the committee on water audit & water conservation and valuable view & suggestions were provided by all.

Flood Situation in the Country

Regular Flood Forecasting Activity by CWC commenced on 01.05.2021 in Brahmaputra and Barak and Jhelum basins. During the period from 1st May to 31st July 2021, 2955 flood forecasts (1964 Level and 991 Inflow) were issued, out of which 2805 (1937 Level and 868 Inflow) forecasts were within limit of accuracy with a percentage accuracy of 94.92%. 163 nos. of Orange Bulletin (for Severe Flood Situation) and 55 number of Red Bulletin for Extreme Flood Situation were issued in the month of July from Central Flood Control Room.

Summary of Flood Situation during 01.05.2021 to 31.07.2021

Extreme Flood Situation

No FF station observed Extreme Flood Situation.

11 Flood Monitoring Stations observed Extreme Flood Situation.

Severe Flood Situation for FF Stations

41 FF Stations observed Severe Flood Situation in the States of Assam, Odisha, Bihar, Uttar Pradesh, Uttarakhand, West Bengal, Maharashtra, Rajasthan, NCT Delhi, Andhra Pradesh and Telangana.

Above Normal Flood Situation

41 FF Stations in Assam, Bihar, Jharkhand, Uttar Pradesh, West Bengal, Andhra Pradesh and Telangana observed Above Normal Flood Situation.

31st meeting of Ghaggar Standing Committee

The 31st meeting of the Ghaggar Standing Committee (GSC) was held on 14.07.2021 through video conferencing under the chairmanship of Member(RM), CWC. In the meeting, following points were discussed:

- CWPRS, Pune opined that among various cases for reduction in HFL across the rivers through various interventions, case no. 8 considering "widening the c/s at thalweg up to 90 m wherever the width of c/s at bankfull stage is < 90 m between Sarola (Hansi Butana) Syphon to Khanauri Aqueduct by using unsteady mathematical model" & case no. 2D considering "Raising of both banks with embankment of height 2 m along with Widening 60 m from thalweg wherever the width at bankfull stage is < 60 m from RD 135000 m to RD 151500 m and RD 268000 m to RD 289000 m, widening 70 m from thalweg wherever the width at bankfull stage is < 70 m from RD 152000 m to RD 182000 m and widening 90 m from thalweg wherever the width at bankfull stage is >> 90 m from RD 14000 m

Monitoring Group Meeting by Prime Minister's Office on North Koel Project

The 15th Meeting of the Monitoring Group of PMO was held on 09.07.2021 to review the progress of the North Koel Reservoir Project (Bihar & Jharkhand). During the deliberations, Shri Pankaj Kumar, Secretary, DoWR, RD&GR highlighted the pending issue of the decision of the Government of Bihar regarding the complete lining

Reservoirs having Inflow above threshold limit

61 reservoirs received inflows above their threshold limit in Karnataka, Jharkhand, Odisha, West Bengal, Bihar, Maharashtra, Tamilnadu, Uttarakhand, Uttar Pradesh, Telangana, Rajasthan, Gujarat, Andhra Pradesh and Madhya Pradesh.



to RD 58500 m" have given optimum results in terms of maximum and average reduction in HFL.

- Remodeling of various cross-structures is not necessary.
- There will not be much change in flow conditions in d/s with provision of embankments; though proposed embankment by Govt of Punjab from Makror Sahib to Karail may give a sub-optimal solution in terms of maximum and average reduction in HFL.
- The Draft model report will be rectified in line with the presentation given by CWPRS, Pune within 3-4 days and will be circulated to all members.
- Views along with ground verification of recommendations of the rectified draft report will be given by member States within 1 week positively.
- CWPRS, Pune will make presentation on rectified report while suggesting an optimum scientific solution for addressing issue of floods in the Ghaggar basin in next meeting of GSC.

in Bihar portion of Right Main Canal (RMC). Shri Kushvinder Vohra, Member (WP&P), CWC & Chairman of Technical Evaluation Committee (TEC) of North Koel Reservoir Project and Shri Vineet Gupta, Director, IP (S), CWC also attended the above meeting.

Activities of CWC under NHP and Progress

i. Using the Modern Technologies for measuring Hydro-meteorological data such as Water Level, discharge, rainfall etc:

A. New ADCP

Work for "Supply Installation, Testing and commissioning of 29 No. Acoustic Doppler Current Profiler (ADCP) and Related Services" has been awarded to M/s Pan India Consultant Pvt. and Contract for the same was signed on 27.07.2021.

B. Velocity Radar

Tender for Procurement of 13 No. of "Supply Installation, Testing and Commissioning of Velocity Radar System" was floated in 02.06.2021. Technical Bid and financial bid for the same was opened on 14.07.2021 and 16.08.2021 respectively. Draft Techno-Financial Evaluation report is in approval process.

ii. Reservoir Sedimentation Studies Using Hydro Graphic Survey of Reservoirs in India:

Work for Phase-I (32 no of reservoirs) has been awarded to M/s Tojo Vikas International Private Limited. Contract for the same was signed on 18.01.2021. Inception Report has been submitted by the firm for the above work. Hydro-graphic survey of 10 no. of reservoirs has been completed.

iii. Early Flood Warning System Including Inundation Forecast in Ganga Basin

Work for Consultancy Service for "Early Flood Warning System Including Inundation Forecast in Ganga Basin" has been awarded to M/s AECOM Asia Company Limited, Gurgaon in JV with M/s URS Scott Wilson India Pvt Ltd and M/s AECOM India Pvt Ltd. The contract will be signed in August, 2021.

iv. Consultancy services for "Development of Decision Support System near to real time for Integrated Reservoir Operation System of Ganga Basin"

Work for Consultancy Service for "Development of Decision Support System near to real time for Integrated Reservoir Operation System of Ganga Basin" has been



awarded to M/s Tractebel Engineering Pvt. Ltd., Gurgaon in JV with M/s Kisters AG, Germany. The contract will be signed in August, 2021.

v. Study on the issue of Flood and Siltation in River Ganga and its Tributaries due to Farrakka Barrage in the state of Bihar

Consultancy Services for "Study on the issue of Flood and Siltation in River Ganga and its Tributaries due to Farakka Barrage in the state of Bihar" was awarded to M/s RMSI in March 2021. Revised Inception Report will be submitted by the Consultant in August, 2021.

vi. Real time Data Acquisition System in Narmada Basin

Contract Agreement for work for Supply, Installation, Testing and Commissioning for the work of Real time Data Acquisition System in Narmada Basin was signed with M/S Canarys Automation Pvt Ltd in August 2020. Installation of 16 ARG station is likely to be completed in August 2021.

vii. Real time Data Acquisition System in Arunachal Pradesh

Contract Agreement for work for Supply, Installation, Testing and Commissioning for the work of Real time Data Acquisition System in the State of Arunachal Pradesh was signed with M/S Astra Microwave Products Ltd in November 2020. Installation for the same is under progress. Data centre has been established.

Financial Progress of Schemes

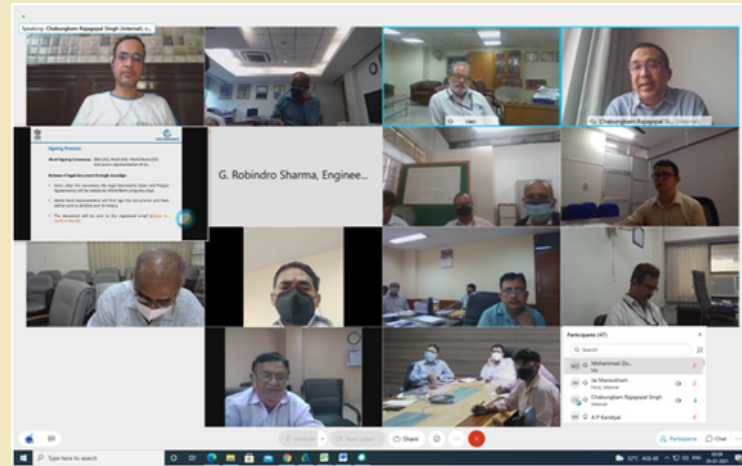
(Amount in Crore ₹)

Sl. No.	Scheme/Component Name	BE 2020-21	Expenditure	Expenditure (in %)
1.	Development of Water Resources information System (DWRIS)	166.1	3.17	19.10%
2.	Investigation of Water Resources Development Schemes (IWRD)	12.00	2.333	19.45%
3.	Flood Management & Border Areas Programme (FMBAP)	27.32	2.69	9.86%
4.	Infrastructure Development (ID) Schemes	4.5	1.23	27.29%
5.	National Hydrology Project	23.95	1.5277	6.37%
6.	Dam Rehabilitation and Improvement Project	25.00	6.11	24.44%

DRIP

Pre-loan signing meeting with IAs

A meeting was held virtually on 29.07.2021 to review the readiness of the partner agencies of DRIP Phase II for scheduled Loan Signing with World Bank on 04.08.2021. Loan Agreement will be signed by DEA and World Bank and Project Agreement will be signed by 10 partner States (Gujarat, Manipur, Meghalaya, Chhattisgarh, Madhya Pradesh, Rajasthan, Odisha, Kerala, Maharashtra and Tamil Nadu) with World Bank for a loan of US \$ 250 Million under DRIP Phase II. The meeting was attended by the officials of CWC, World Bank and DRIP Phase II Partner States.



Pre proposal conference regarding RFP for Consultancy Services under DRIP Phase II and Phase III

A Pre-Proposal Conference regarding Request for Proposal (RFP) for hiring of EMC for CPMU under DRIP Phase II & Phase III was held virtually on 23.07.2021. During the meeting, the Short Listed Agencies were clarified on various queries regarding published revised RFP document. The meeting was attended by CPMU officials and representatives of Shortlisted Agencies.



Visit to proposed Saryu Barrage

A site visit was undertaken by Director BCD (E&NE) Dte, CWC (HQ), New Delhi along with officers from Planning Circle, Faridabad and Irrigation & Water Resources Dept., Govt. of U.P. on 13th July 2021 to the proposed site of Ayodhya Barrage over Saryu (Ghagra) River, Ayodhya, U.P. followed by detailed discussions with senior officers of Irrigation & Water Resource Department, U.P. on 14th July 2021.

Planning Circle, CWC, Faridabad is preparing DPR of proposed Ayodhya Barrage, U.P. on the request of Irrigation and Water Resources Department, Govt. of U. P., BCD(E & NE)Dte., CWC, New Delhi and CWC (Hq) is providing design consultancy for the Barrage and Canal Design Chapter in this DPR. The purpose of site visit was to:

- To examine the local conditions for planning & design



Proposed location of Barrage axis on Right Bank of Saryu River

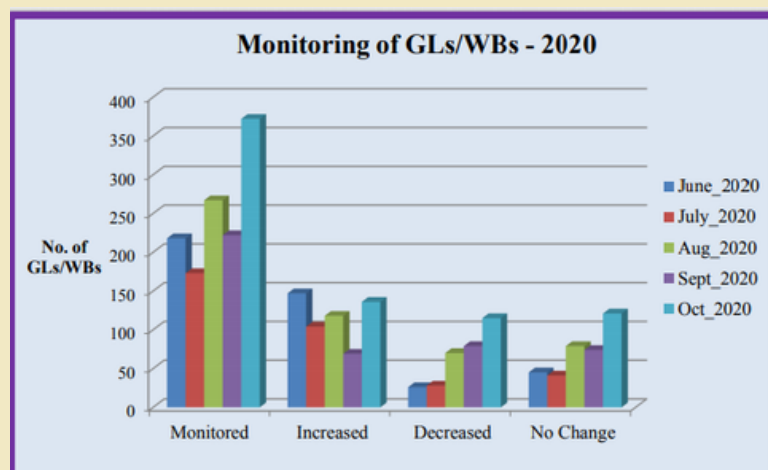
of Barrage & Canal components for preparation of DPR

- Discuss various design aspects with Project Authorities
- Discuss the Study drawings prepared by BCD(E & NE) with project authorities

Data Corner

Status of glacial lakes & water bodies monitored by CWC during the year 2020

Month	Monitored	Increased			Decreased			No Change
		>20%	<20%	Total	>20%	<20%	Total	
Jun-2020	218	6	83	147	12	14	26	45
Jul-2020	173	33	71	104	09	19	28	41
Aug-2020	267	49	69	118	27	43	70	79
Sep-2020	222	27	42	69	33	46	79	74
Oct-2020	372	52	84	136	35	80	115	121



Training

Sr. No.	Name of Training Programme	Dates	No of Trainee per course	Category
1	Webinar 5 : Working of Indus Treaty between India and Pakistan : Case Studies of Baglihar & Kishanganga	05.07.2021	203	Policy
2	Webinar 6 : Ganga Water Treaty (1996) and existing institutional mechanisms for transboundary water cooperation between India and Bangladesh	12.07.2021	129	Policy
3	Purpose Oriented Training Program on Irrigation Assets Mapping using GIS - Batch I	12.07.2021	157	Technical
4	Purpose Oriented Training Through DL on Flood Forecasting, Modelling and Disaster Management	13-30 July 2021	338	Technical
5	Purpose Oriented Training Program on Andriod App Development for Water Sector	12-23 July 2021	52	Technical
6	Purpose Oriented Training Program on Irrigation Assets Mapping using GIS - Batch I	05-09 July 2021	110	Technical
7	Purpose Oriented Training Program on Irrigation Assets Mapping using GIS - Batch II	12-16 July 2021	94	Technical
8	Purpose Oriented Training Program through Distance Learning on Hydrometeorological Observation Site	19-30 July 2021	287	Technical
9	Webinar 7 : Kosi(1954,1966) and Gandak(1959) Agreements, Treaty(1996) and existing institutional mechanisms Mahakali for transboundary water cooperation between India and Nepal	19-07-2021	176	Policy
10	Purpose Oriented Training Program through Distance Learning on Hydrologic Modelling System HEC-HMS	26-30 July 2021	327	Technical
11	Webinar 8 : Transboundary Cooperation on Water Resources between India and Bhutan	26.07.2021	136	Policy

54th Governing Council & Annual General Body Meeting of Irrigation Management Training Institute (IMTI), Tamil Nadu

The 54th Governing Council & Annual General Body Meeting of Irrigation Management Training Institute (IMTI), Tamil Nadu was held on 26.7.2021 under the Chairmanship of Dr. SANDEEP SAXENA, I.A.S., Additional Chief Secretary to Govt. of Tamil Nadu, Public Works Department /Chairman, Governing Council, IMTI. From CWC, Shri P. Dorje Gyamba, Chief Engineer(POMIO) and Shri Milind Panpatil, Director, NWA attended the meeting.

Shri Dorje Gyamba suggested that institutes like IMTI and others along with CWC needs to work together to reach the farmers at ground level to get the max benefits of different schemes of State Govt. and Govt. of India. Shri Milind Panpatil informed about NWA different activities of NWA with WALMIs and IMTI and their future proposed training programmes with these institutes.

Water Sector News

- ✦ Water row : Telangana, AP officials in tense face-off (Telangana Today, 02.07.2021)
- ✦ Mallanna Sagar works nearing completion : MP (Telangana Today, 08.07.2021)
- ✦ SC seeks state reply on Polavaram project (Deccan Chronicle, 09.07.2021)
- ✦ Reservoirs brimming as rains pound Telangana (Telangana Today, 12.07.2021)
- ✦ Monsoon wreaks havoc: 71 dead in lightning strikes in several states (Millennium Post, 13.07.2021)
- ✦ Whether mostly dry in N. India, rains lash parts of southern states (Millennium Post, 16.07.2021)



About IMTI

Tamilnadu Irrigation Management Training Institute (IMTI), under Water Resources Department, PWD was established in the year 1984. The Institute conducts various need-based training programmes for the benefit of officers serving in P.W.D., Agriculture and Agricultural Engineering Departments. Farmers are also taken into the training fold and they are given training on effective water use and also on-farm water Management.

- ✦ Centre : KRMB told TS to stop Srisailem water release (Deccan Chronicle, 20.07.2021)
- ✦ Heavy rains cause havoc in Maha's Konkan region, over 6K left stranded (Deccan Herald, 23.07.2021)
- ✦ Heavy rains unleash havoc in west, south India; 129 died in 48 hours (Millennium Post, 24.07.2021)
- ✦ Yamuna is not fit for bathing without environmental flow, Central govt. told (Millennium Post, 27.07.2021)
- ✦ 14 Dead as cloudbursts lead to flash floods in Lahaul, Kishtwar (The Tribune, 29.07.2021)
- ✦ KRMB urged not to permit water diversion (Telangana Today, 30.07.2021)

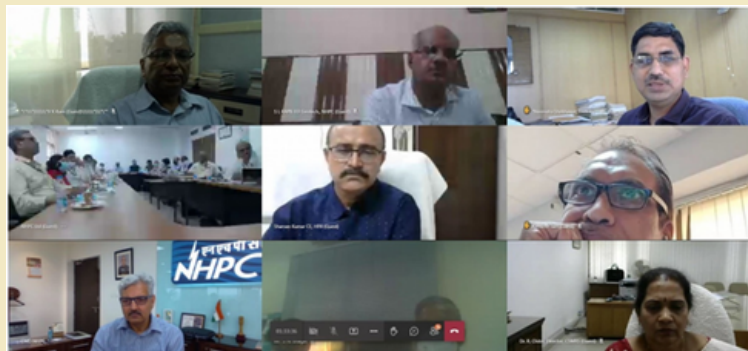
Gallery



प्रो. रीता बहुगुणा जोशी जी की अध्यक्षता में संसदीय राजभाषा समिति ने चिनाब मण्डल, जम्मू एवं झेलम उपमंडल, श्रीनगर, केन्द्रीय जल आयोग के साथ निरीक्षण बैठक की। इस दौरान समिति ने मंत्रालय एवं विभाग के वरिष्ठ अधिकारियों की उपस्थिति में हो रहे राजभाषा हिन्दी के कार्यों का पुनर्विलोकन किया।



Visit of Chairman, CWC to Ghosal G&D site and Snow & Rain Gauge Station at Keylong, Lahaul & Spiti, Himachal Pradesh.



DPR acceptance meeting held under Chairmanship of the Chairperson, CEA on 09.07.2021 through VC to assess the adequacy/completeness of the DPR of Dagmara (130.1 MW) HE Project of M/s NHPC Ltd in Bihar which was attended by all concerned appraising groups of CEA, CWC, GSI and CSMRS.



Plantation drive at Site Nallagandla, Hyderabad on 15.07.2021 as part of "Harita Haram" Programme organised by KGBOW, CWC, Hyderabad



Polavaram fish ladder first time in action in the Very first year of River Diversion



Confluence of Chandra and Bhaga rivers at Tandi in Himachal Pradesh



2nd meeting of the committee for revision of General Guidelines for Water audit and Water conservation was held on 23.07.2021 in CWC through VC under the chairmanship of Sh. P. Dorje, CE, POMIO, CWC



Visit of Member(RM), CWC to Roorkee site

Reservoir Monitoring

CWC is monitoring live storage status of 130 reservoirs of the country on weekly basis and is issuing weekly bulletin on every Thursday. Out of these reservoirs, 44 reservoirs have hydropower benefit with installed capacity of more than 60 MW. The total live storage capacity of these 130 reservoirs is 174.233 BCM which is about 67.58% of the live storage capacity of 257.812 BCM which is estimated to have been created in the country.

As per reservoir storage bulletin dated 29.07.2021, the total live storage available in these reservoirs is 85.356 BCM which is 49% of total live storage capacity of these reservoirs. However, last year the total live storage available in these reservoirs for the corresponding

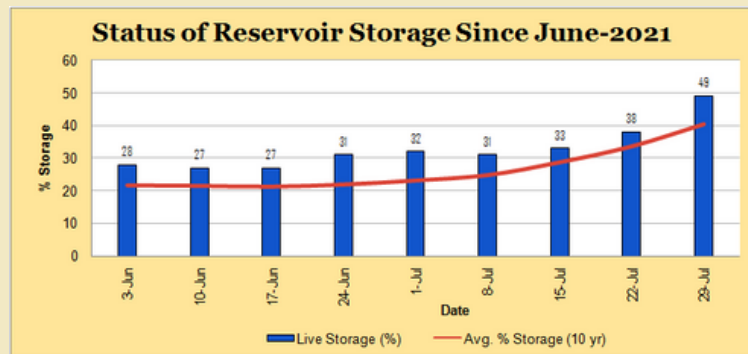
History-Nagarjunasagar Project

Project Background

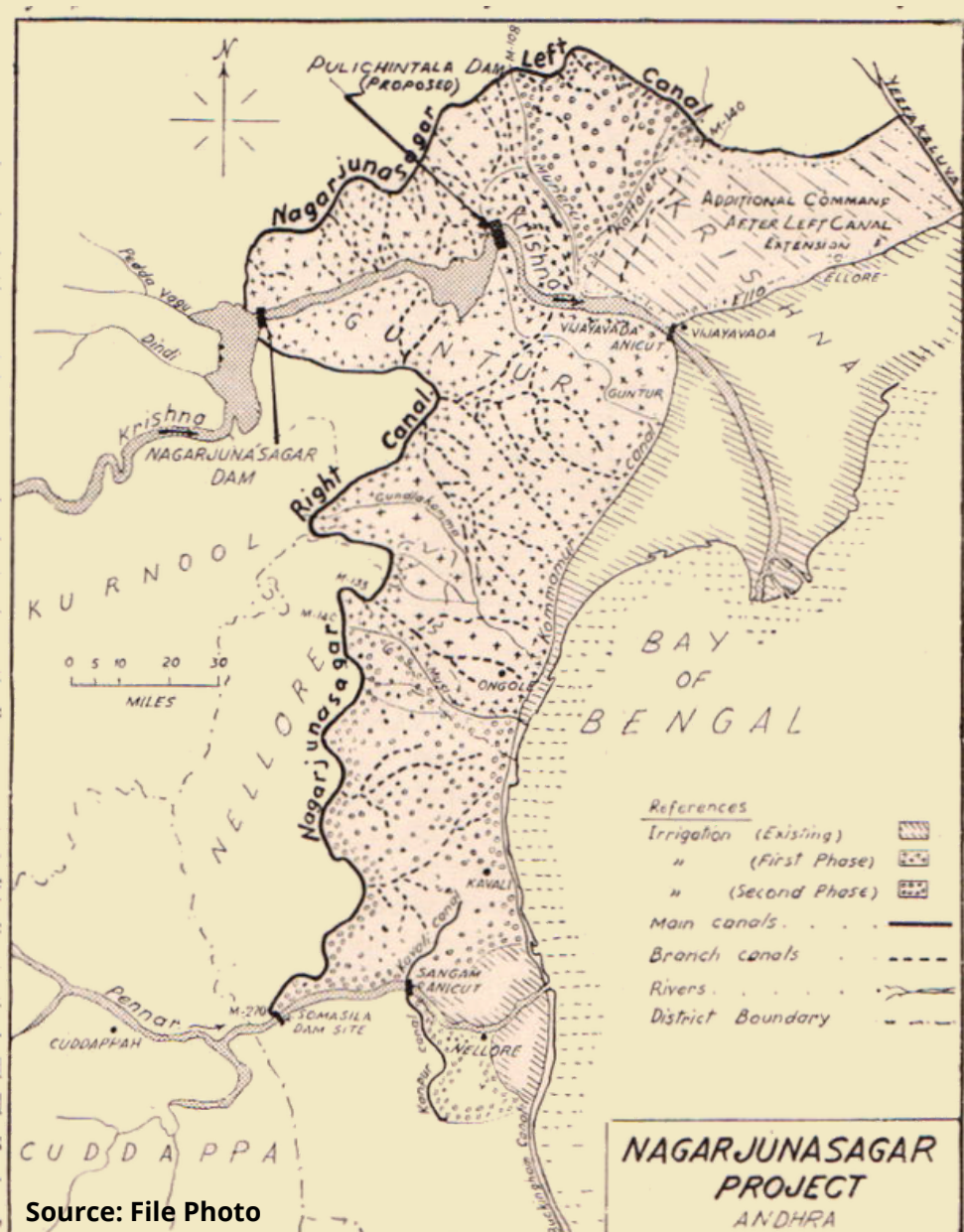
Proposals for utilising the waters of the Krishna for irrigation areas south of the river dates back to 1903, when a scheme called the Pulichintala scheme was investigated for construction of a dam at Pulichintala to irrigate 2.43 lakh ha in Guntur district.

In 1933, the erstwhile Hyderabad State carried out investigations and proposed a joint scheme with erstwhile Madras State which failed to participate in the proposal. Further, Hyderabad State confined itself to the investigation of a canal on the left bank to irrigate areas lying in the State territory. Again, in 1952 the Hyderabad Government made out proposals for the construction of a high dam at Nandigama for irrigation of 3.2 lakh ha in Hyderabad and 0.94 lakh ha in Nandigama taluk in Andhra Pradesh and development of 168 MW of power. In 1951, Madras came forward with the Krishna- Pennar Scheme, envisaging the construction of a dam on the Krishna at Siddheswaram, another at Somasila on the Pennar river, and a link canal between the two. The planning Commission appointed the Khosla Committee to examine and report on the optimum and most beneficial utilisation of the waters of the Krishna. Consequently a joint Report of Andhra and Hyderabad states

on Nandikonda Project emerged in 1954 which was Nagarjunasagar Project proposed by the former Hyderabad State. The project name commemorates the



period was 70.771 BCM and the average of last 10 years live storage was 70.35 BCM. Thus, the live storage available in 130 reservoirs as per the bulletin dated 29.07.2021 is 121% of the live storage of corresponding period of last year and storage of average of last ten years.



Source: File Photo

ancient Buddhist Savant who lived and preached in the area in the second century after Christ. The name of Acharya Nagarjuna of Mahayan cult stands out in the history of the period.

Biggest Project

The lake created by the dam had a gross capacity of 11558 million cubic meter, the biggest in India at that time. The canal system, designed to draw off 1019 cumec is one of the largest discharge from irrigation storage. The Right Bank canal with a discharge capacity of 594.7 cumec is one of the largest in the world. The 4.89 million cubic meter of masonry in the Dam was the largest quantity for any dam in the world, and the total quantity of masonry and concrete was 5.60 million cubic meter. The foundation stone for the project was laid on 10.12.1955 by Hon'ble Prime Minister of India. In his words, "NagarjunaSagar Project symbolises the new temples being built all over India. This mammoth Project constitutes both the pride of India and hope of Andhra Pradesh."

Project Phasing

Construction had been proposed in two phases on considerations of finance availability, the first phase of the Project was estimated to cost Rs. 140 crore (expected to go up to Rs. 165 crore as per revised estimate) to irrigate 8.30 lakh ha of first crop and 0.61 lakh ha of second crop.

The Dam

The outstanding feature of this Project from the engineering aspect was the adoption of masonry for a hydraulic structure of such an unprecedented height. It is a gravity type dam, 1450 m long flanked on either side with earthen dams, making a total length of about 4.83 km.

Canals

The Right Canal takes off in blocks 73 to 75 on the right side of the dam. The right Bank Canal, with its record discharge capacity of 594.7 cumec, is 76.2 m wide and its full supply depth is 4.57 m at the head. The canal takes off from a regulator located in the right flank of the masonry dam and is flumed in deep cuts through the right flank hills for a length of 3584 m. The Left Canal takes off from the foreshore of the reservoir a little upstream of the Dam. The head regulator for the Left Bank Canal is located at about 1.9 km of the leading channel from the foreshore. The Canal after an approach length of 2.41 km passes through a horse-shoe shaped

tunnel of 9.75 m dia for a length of 2290 m. the discharge capacity of the Canal is 474.7 cumec. On 04.08.1967, the water from Dam was released into the canals.

NAGARJUNASAGAR PROJECT

Features at a Glance

Type	Masonry and Earth
Masonry Dam	
Total Length	1450 m
Length of Spillway	470.92 m
Length of non-over-flow portion including power dam	979.08 m
Maximum Height	124.7 m
Base width (Maximum)	97.54 m
Top width	8.53 m
Earth Dam	
Length	3413.76 m
Maximum height above foundation	25.9 m
Reservoir	
Crest Level of Spillway	EL 166.42 m
Full Reservoir Level	EL 179.83 m
Gross storage capacity	11557.7 million cum
Live storage capacity	6797 million cum
Dam Power House	8 Units of 50 MW each
Canal Power House	1 Unit of 60 MW
Cost (Rs. In Crore)	149.53

Role of CWPC

CWPC played significant role in the development of this project. Dr. K. L. Rao, guided the construction activity of the project in the capacity of Member (Designs), Central Water and Power Commission and later as Union Minister for Irrigation and Power, Govt. of India. Also, Chairman, CWPC was one of the members of control board headed by Chief Minister of Andhra Pradesh. CWPC was entrusted with the preparation of preliminary specification drawings and it also started a training school to impart mechanical training for the operation of heavy machinery.

The entire cost of the project was advanced by Central Govt. to States as Loan to be paid in instalments. One of the unique features of the project was employment of gigantic work force and no foreign consultants were engaged. Peak number of workers employed for the Dam was around 40000. By building the dam in Masonry, there was saving of about 25%, higher factor of safety along with large scale employment. Problem of cracking and seepage control was also better tackled by the masonry dam.

Today, NagarjunaSagar Dam stands as largest masonry structure in the world and it's one of the most remarkable engineering feats of the modern India.

Source: Bhagirath



Central Water Commission

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

Editorial Board

- Dr. Samir Chatterjee, CE(HRM)- Editor-in-Chief
- Shri Amrendra Kumar Singh, CE(EMO)- Member
- Shri Yogesh Paithankar, CE(PMO)- Member
- Shri Deepak Kumar, Director(RMC)- Member
- Shri S. K. Rajan, Director(TC)- Member

Designed & Published by

Water Systems Engineering Directorate
Central Water Commission

- Shri Bhupinder Singh, Director(WP&P-C)- Member
- Shri S. K. Jha, Director(WSE)- Member
- Shri A. K. Madhok, DD(WSE)- Member
- Shri R. K. Sharma, DD(D&R-Coordination)- Member
- Shri Shiv Sunder Singh, DD(WSE)- Member-Secretary

2nd Floor(South), Sewa Bhawan, R K Puram, New Delhi-110 066
E-mail: media-cwc@gov.in

