

No. 16/27/2018-PA (N)/1394-1417  
**Central Water Commission**  
**Project Appraisal Organization**

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R.K. Puram, New Delhi.  
Dated: 14/09/2018

**Minutes of Meeting**

A copy of Summary Record of Discussions of the 137<sup>th</sup> meeting of the Advisory Committee on Irrigation, Flood Control & Multipurpose Projects, held under the Chairmanship of Secretary, MoWR, RD&GR, on 28/08/2018 at New Delhi is enclosed herewith for information and further necessary action please.

Comments, if any, may kindly be forwarded to the undersigned within 15 days.

Encl: As above

  
(C. K. L. Das) 14/9/2018

Chief Engineer (PAO) &

Member Secretary of the Advisory Committee

To,

**Members of Committee:**

1. Chairman, CWC, Sewa Bhawan, R. K. Puram, New Delhi.
2. Secretary (Expenditure), Ministry of Finance, 1<sup>st</sup> Floor, North Block, New Delhi.
3. Secretary, Department of Power, Room No. 205, S.S. Bhawan, II<sup>nd</sup> Floor, New Delhi.
4. Secretary, Ministry of Environment & Forests & CC, 4<sup>th</sup> Floor, Prithvi Block, Indira Paryavaran Bhawan, JorBagh, New Delhi.
5. Secretary, Department of Agriculture, Cooperation & Farmers Welfare, R.No. 126, Krishi Bhawan, New Delhi.
6. Secretary, Ministry of Tribal Affairs, Room No. 738, A-Wing, Shastri Bhawan, New Delhi.
7. Director General, ICAR, Room No-108, Krishi Bhawan, New Delhi.
8. Chairman, CEA, Sewa Bhawan, R. K. Puram, New Delhi.
9. Chairman, Central Ground Water Board, Jam Nagar House, New Delhi.
10. Adviser (Power), NITI Aayog, Room No. 248, Yojana Bhawan, New Delhi.
11. Adviser (WR), NITI Aayog, Room No. 246, Yojana Bhawan, New Delhi.
12. Joint Secretary & Financial Adviser, MoWR, RD & GR, Room No-401, S.S. Bhawan, New Delhi.

**Special Invitees:**

13. Additional Secretary, MoWR, RD&GR, New Delhi.
14. Member (WP&P), CWC, New Delhi.
15. Member (D&R), CWC, New Delhi.
16. Member (RM), CWC, New Delhi.
17. Chairman, GFCC, Patna.
18. Joint Secretary (IC&GW), MoWR, RD&GR.
19. Principal Secretary, WRD, Govt. of Bihar, Patna.
20. Principal Secretary, WRD, Govt. of Maharashtra, Mumbai.

21. Chief Advisor (Cost), Department of Expenditure, Ministry of Finance, 2nd Floor, Lok Nayak Bhawan, New Delhi.
22. Commissioner (State Projects), MoWR, RD & GR, Room No-411, S. S. Bhawan, New Delhi.
23. Commissioner (FM), MoWR, RD & GR, CGO Complex, 11th Block, 8th Floor, Lodhi Road, New Delhi.

**Copy for kind information to:**

24. Sr. PPS to Secretary, MoWR, RD & GR, Room No. 407, Shram Shakti Bhawan, New Delhi.

**Government of India**  
**Ministry of Water Resources, River Development & Ganga Rejuvenation**  
**Central Water Commission**

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**SUMMARY RECORD OF DISCUSSIONS OF THE 137<sup>th</sup> MEETING OF THE  
ADVISORY COMMITTEE FOR CONSIDERATION OF TECHNO-ECONOMIC  
VIABILITY OF MAJOR & MEDIUM IRRIGATION, FLOOD CONTROL AND  
MULTIPURPOSE PROJECT PROPOSALS HELD ON TUESDAY, AUGUST 28<sup>th</sup>,  
2018 AT CENTRAL WATER COMMISSION, NEW DELHI:**

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The 137<sup>th</sup> meeting of the Advisory Committee of Ministry of Water Resources, River Development & Ganga Rejuvenation (MoWR, RD&GR) for consideration of techno-economic viability of major & medium irrigation, flood control and multi-purpose project proposals was held under the Chairmanship of Shri U. P. Singh, Secretary to the Government of India, MoWR, RD & GR on Tuesday, 28<sup>th</sup> August, 2018 at Central Water Commission, New Delhi. The list of members of the Committee or their representatives/ nominees/ special invitees and officers from various Ministries/ Organizations and representatives of State Governments who attended the meeting is at **Annexure**.

At the outset, the Secretary (WR, RD & GR) and Chairman, Advisory Committee welcomed the participants. Thereafter, the agenda items were taken up one by one:

**(i) Confirmation of the minutes of 136<sup>th</sup> meeting of the Advisory Committee**

CE (PAO), CWC and Member Secretary of Advisory Committee stated that the 136<sup>th</sup> meeting of the Advisory Committee of MoWR, RD&GR on Irrigation, Flood Control and Multi-purpose Projects was held on 06.06.2018. The Summary Record of Discussions was circulated vide letter No. 16/27/2017-PA(N)/939-970 dated 14.06.2018. As no comments on the Summary Record were received, the Advisory Committee confirmed the Summary Record as circulated.

**(ii) Follow up action after the 136<sup>th</sup> meeting of the Advisory Committee**

NIL

**(iii) Project Proposals considered by the Advisory Committee**

Chief Engineer (PAO) and Member Secretary of the Advisory Committee briefly introduced the project proposals to be considered by the Advisory Committee. Thereafter,



Secretary (MoWR, RD&GR) and Chairman of the Advisory Committee, in his opening remarks, stated that there was no point of submitting a project proposal to this Committee when the project had already gone in the advanced construction stage without the prior consideration/acceptance by the Advisory Committee. This view was backed by Chairman, CWC who added that this way of bringing the project proposal defeated the very objective of the Advisory Committee to consider/accept the proposal from the view-point of techno-economic viability before the construction of the project is undertaken on ground.

Before the start of the discussions on the projects, Secretary (WR, RD&GR) emphasized the importance of properly prepared sound Detailed Project Reports (DPRs) for the speedy examination of the project proposal(s).

**A. Irrigation and Multi-purpose Projects**

**1. Lower Tapi Project, Maharashtra (Major Irrigation; Estimated Cost Rs. 2751.05 Crore @ PL 2016-17, B.C. Ratio 1.42:1)**

A presentation was made by the Project Authority. It was informed that the Lower Tapi Project was proposed on the River Tapi, 1.0 km downstream of the confluence of Aner and Tapi rivers near village Padalse in Amalner Tehsil of Jalgaon District, Maharashtra. The main objective of the project is to provide water for irrigation, drinking purpose and industrial use. It envisages construction of a storage reservoir (gated weir) and Lift Irrigation system. The live storage of the project is 249.61 MCM (8.81 TMC). The total CCA of the project is 25,657 Ha having annual irrigation of 32,328 Ha (Rabi and Kharif) proposed under the Lift Irrigation Scheme. The project lies in severely drought prone area and is proposed to irrigate 32,328 Ha area of 6 Tehsils of Jalgaon and Dhule Districts of Maharashtra annually. The project will improve socio-economic conditions of people and also the opportunity of industrial development. The project plans to utilize 294.50 MCM (10.40 TMC) of water out of the 5419.68 MCM (191.4 TMC) of the state's share of water in Tapi Basin. The total water demand from the project is equal to the allocation of water i.e. 294.50 MCM (10.40 TMC) made for the project in the revised Master Plan for Tapi Basin. The 75% dependable annual net yield for the project is 400.39 MCM (14.14 TMC) and 294.50 MCM (10.40 TMC) is the water utilization for the project.

The estimated cost of the project is Rs. 2751.05 Crore (PL 2016-17) with the benefit-cost ratio as 1.42, which is acceptable as the command area is in drought prone districts of Maharashtra.



The representative of the Ministry of Tribal Affairs (MoTA) enquired from the Project authorities if any tribal area was involved in the rehabilitation, to which the project authority clarified that no tribal areas were affected in the project. To the query whether forest and environment and other clearances had already been accorded to project, it was clarified that all the statutory clearances had been obtained for the project. The Project authorities further stated that the water allocation for the project was duly envisaged in the master plan of Tapi basin.

Secretary (WR, RD & GR) observed that most of the head works of the project had been already completed even before the acceptance of the project proposal by the Advisory Committee. He advised to implement the micro-irrigation system in the project and to encourage Water User Associations (WUA) for the project. He also advised that Operation and Maintenance (O&M) of such projects needed to be borne by the WUAs. Members of the Committee observed that the project was in advanced stage of construction and the State Govt. should allocate sufficient fund to complete the project without further delay.

After detailed deliberations, the proposal was accepted by the Advisory Committee. However, the acceptance of the proposal by the Advisory Committee of MoWR, RD & GR does not guarantee any eligibility towards release of fund under any existing scheme of MoWR, RD & GR such as PMKSY, RRR, FMP etc.

**2. Jihe Kathapur Lift Irrigation Scheme, Maharashtra (New, Major Irrigation; Estimated Cost Rs. 1061.34 Crore @ PL 2016-17, B.C. Ratio 1.08:1)**

A presentation was made by the Project Authority. It was informed that the Jihe Kathapur Lift Irrigation project mainly envisages construction of one barrage on river Krishna near Jihe village in Satara district of Maharashtra with an aim to provide irrigation facilities to an irrigable area (Kharif) of 27,500 Ha (having CCA of 35,540 Ha). The live storage capacity of the barrage is 9.91 MCM (0.35 TMC) (10 days storage). The net 75% dependable surface water yield at the Jihe Kathapur barrage is 525.96 MCM (18.57 TMC) and the irrigation utilization is 89.76 MCM (3.17 TMC). The project envisages to lift 89.76 MCM (3.17 TMC) of water from the river Krishna (out of Maharashtra's 16,564.86 MCM (585 TMC) of water allocation from Krishna river) near Jihe village in Satara district during the Kharif season to irrigate the drought prone areas of Khatav and Man Talukas of Satara district by providing irrigation water through closed pipe conduit system



and lifting of water by farmers from the Kolhapur type (K.T.) weirs across rivers Yerala and Man. The estimated cost of the project is Rs. 1061.34 Crore (PL 2016-17) with the benefit cost ratio as 1.08, which is acceptable for the proposal in drought prone areas.

Secretary (WR, RD & GR) observed that significant progress had already been made in barrage and intake structures, tunnel and rising mains even before the acceptance of the project proposal by the Advisory Committee. He advised to implement the micro-irrigation system effectively in the project and to encourage Water User Association (WUA) to strengthen the objectives of the project. He also advised that the Operation and Maintenance (O&M) of the project needed to be borne by WUAs only. Members of the Committee observed that after implementation of micro-irrigation system, the total irrigable area of the project would significantly increase.

Further, Secretary (WR, RD & GR) asked about planning of micro-irrigation in the project. The project representative informed that 3800 Ha area would be covered under the piped distribution network. Remaining area will be covered under the micro-irrigation in various stages. Further, the Committee members discussed about the allocation of water for the whole project and asked if the 89.76 MCM (3.17 TMC) water utilization envisaged under the project was available to the state of Maharashtra as per the award of the Krishna Water Disputes Tribunal - I. In response, the Project representative stated that the water allocation for the project was envisaged in the Master Plan of the Krishna basin in line with the award of the Krishna Water Disputes Tribunal - I.

After detailed deliberations, the proposal was accepted by the Advisory Committee. However, the acceptance of the proposal by the Advisory Committee of MoWR, RD & GR does not guarantee any eligibility towards the release of fund under any existing scheme of MoWR, RD & GR such as PMKSY, RRR, FMP etc.

**3. Revised Cost Estimate (RCE) of Jigaon Irrigation Project, Maharashtra (Major, Irrigation; Estimated Cost Rs. 7764.39 Crore @ PL 2016-17, B.C. Ratio 1.195:1)**

The Project Authority presented the main details of project in the form of video presentation. It was stated that the Jigaon Irrigation Project envisaged the construction of an earthen dam across river Purna, a tributary of river Tapi near Jigaon village Takli in Buldhana district of Maharashtra. The live storage capacity of dam is 553.689 MCM (19.55 TMC). The project envisages to utilize 548.237 MCM (19.36 TMC) of water from



the river Tapi (out of Maharashtra's 5419.68 MCM (191.4 TMC) of water allocation from Tapi river). The net 75% dependable water yield is 589.90 MCM (20.83 TMC) and the utilization proposed is 548.234 MCM (19.36 TMC) for irrigation, drinking and industrial uses (including evaporation losses). This project will provide irrigation facilities through 12 nos. of Lift Irrigation Schemes planned on the periphery of reservoir which covers Khamgaon, Shegaon, Jalagaon, Sangrampur, Malkapur & Nandura Talukas of Buldhana district & Telhara Taluka of Akola district which are drought prone areas. The annual irrigation of the project is 1,01,088 Ha with intensity of irrigation as 120%. The B.C ratio of the project is 1.195.

The Project Authority also stated that the project had been earlier accepted by the Advisory Committee of MoWR, RD&GR in its 128<sup>th</sup> meeting held on 29<sup>th</sup> February, 2016 for Rs 5708.11 Crores. Further, during the 7<sup>th</sup> meeting of the Investment Clearance Committee of MoWR, RD&GR, held on 23/06/2017, the Committee had instructed that the project authority needed to submit the Revised Cost Estimate (RCE) based on the latest SOR. Accordingly, the Revised Cost Estimate works out to be Rs 7764.39 Crore (PL 2016-17).

The Project Chief Engineer specified reasons for the increase in cost from Rs 5708.11 Crore to Rs 7764.39 Crore. Out of the Rs. 2034.62 Crore increase in the project cost, the major increase was due to land acquisition cost (B-Land), which had increased from Rs. 2010.17 crore (PL 2014-15) to Rs 3712.43 Crore (PL 2016-17) (an increase of Rs. 1702.36 Crore). Considering the multiplying factor 1.2 with 100 percent solatium as per the Govt of Maharashtra (GoM) norms, the land cost taken as 2.4 times earlier, had now increased to 4.0 times.

Secretary (WR, RD & GR) observed that much progress had already been made in the construction of project and advised the project authority to implement micro-irrigation system and to encourage Water User Associations (WUA) for the project. He also advised that O&M of the project needed to be borne by the WUAs.

After detailed deliberations, the proposal was accepted by the Advisory Committee. However, the acceptance of the proposal by the Advisory Committee of MoWR, RD & GR does not guarantee any eligibility towards release of fund under any existing scheme of MoWR, RD & GR such as PMKSY, RRR, FMP etc.





## **B. Flood Control Projects**

### **1. Anti-erosion work in between km 28.00 to km 35.00 of P.P. (Pipra - Piprasi) Embankment and at Chandrapur Retire Line, Bihar (Estimated Cost Rs. 49.1515 Crore @ 2017 PL, B.C. Ratio 1.473:1)**

A presentation was made by the Project Authority. It was informed that the project proposal had been framed by Water Resources Department, Govt. of Bihar as per the recommendations (for Bihar portion) of the 50th meeting of the Gandak High Level Standing Committee (GHLSC), held during 13-16 October, 2017, for particular reaches of the river Gandak. The above mentioned works recommended by GHLSC were required to be completed before the floods season of 2018.

The Project Authority further informed that all the works had been completed before the flood season of 2018. The Committee members raised the issue as to why a completed project was put up for consideration. It was clarified in this connection that as per the MoWR, RD&GR Guidelines, the flood control scheme costing above Rs. 25 crore was required to be considered by the Advisory Committee of MoWR, RD&GR, Govt. of India.

The project was discussed in detail and accepted by the Advisory Committee. However, the acceptance of the proposal by Advisory Committee of MoWR, RD&GR does not guarantee any eligibility towards release of fund under any existing scheme of MoWR, RD&GR such as PMKSY, RRR, FMP etc.

### **2. Raising and strengthening Jaaua Dilli Diwanganj Mahananda left embankment from km 13.25 to km 34.07 with Turning Platform at the interval of 3 km with service road on the top (Estimated Cost Rs. 81.7722 Crore @ 2017 PL, B.C. Ratio 1.37:1)**

The Project Authority informed that the project proposal had been prepared for Raising & Strengthening of Jhaui-Dilli-Diwanganj Mahananda Left Embankment from Km 13.25 to Km 34.07 with turning platform at an interval of 3 km with black top road over the embankment. The scope of work is as follows:

- i. Raising & Strengthening of Jhaui-Dilli-Diwanganj Mahananda Left embankment from KM 13.25 to KM 34.07 with service road on the top (GSB-215 mm, WMM-225 mm, BM-50 mm, SDBC-25 mm)
- ii. Construction of Dhala- 20 nos.
- iii. Construction of Turning Platform- 8 nos.





The Project Authority further informed that the existing embankment of river Mahananda was badly damaged during the 2017 floods and the present proposal had been framed for Raising & Strengthening of Jhaui Dilli Diwanganj portion of Mahananda Left Embankment. It was also informed that provision of turning platform at certain interval had been kept for movement of vehicle for its routine maintenance as well as for emergent actions during the flood seasons.

The project was discussed in detail and accepted by the Advisory Committee. However, the acceptance of the proposal by Advisory Committee of MoWR, RD&GR does not guarantee any eligibility towards release of fund under any existing scheme of MoWR, RD&GR such as PMKSY, RRR, FMP etc.

**3. Raising and strengthening of Nagarpara embankment between 0.00 km and 13.110 km and after raising and strengthening, construction of service road on above length of the embankment (Estimated Cost Rs. 46.5901 Crore @ 2017 PL, B.C. Ratio 2.97:1)**

A presentation was made by the Project Authority. It was informed that the Nagarpara Embankment was situated on the right bank of river Kosi having a total length of 16.00 km and it ran from Satish Nagar (NER Railway line crossing over NH-31 at Satish Nagar) to Hari village under the Bihpur block of Bhagalpur district. The Nagarpara embankment & Trimuhani -Kursela Embankment combined together protect the densely populated villages of Bihpur, Kharik & Naugachia blocks under Bhagalpur district as well as standing crops like Banana, Paddy and Maize. The scope of work of the project is as under:

- i. Raising and Strengthening of Nagarpara Embankment between 0.00 km to 13.110 km and after Raising and Strengthening construction of service road on above length of embankment
- ii. Construction of 3 nos. of Anti Flood Sluices in between 0.00km to 13.110km of Nagarpara Embankment
- iii. Construction of 14 nos. of Turning Platforms

The Project Authority informed that the lower reach of Kosi Embankment near Nagarpara provided safety to agricultural land and people as well as infrastructure like Railway line and NH-31 from the devastating floods of Kosi river.

The project was discussed in detail and accepted by the Advisory Committee. However, the acceptance of the proposal by Advisory Committee of MoWR, RD&GR does

not guarantee any eligibility towards release of fund under any existing scheme of MoWR, RD&GR such as PMKSY, RRR, FMP etc.

4. **Flood Protection work of SML (Sikarhatta – Majhari Lower Embankment), ESML (Extended Sikarhatta – Majhari Lower Embankment), Raising, Strengthening of Panchi Right Embankment construction of AFS in Panchi Right Embankment, Dagmara-Rajpur Embankment and km 15.00 to km 18.213 of WKE (Western Kosi Embankment) (Below Bharda) (Estimated Cost Rs. 44.1441 Crore @ 2017 PL, B.C. Ratio 2.82:1)**

The project proposal of “Flood Protection work of SML, ESML, Raising, Strengthening of Panchi Right Embankment construction of AFS in Panchi Right Embankment, Dagmara-Rajpur Embankment and km 15.00 to km 18.213 of WKE (Below Bharda)” have been framed by Water Resources Department, Govt. of Bihar as per the recommendations of the Kosi High Level Committee (KHLC) visit/meet made during 20-23 October, 2017 for particular reaches of the river Kosi. The above mentioned works recommended by the KHLC were required to be completed before the flood season of 2018.

The Project Authority informed that all the works had been completed before the flood season of 2018. The Committee members raised the issue as to why a completed project was put up for consideration of the Advisory Committee. It was clarified that as per the MoWR, RD&GR Guidelines, the flood control scheme costing above Rs. 25 crore was required to be considered by the Advisory Committee of MoWR, RD&GR, Govt. of India.

The project was discussed in detail and accepted by the Advisory Committee. However, the acceptance of the proposal by Advisory Committee of MoWR, RD&GR does not guarantee any eligibility towards release of fund under any existing scheme of MoWR, RD&GR such as PMKSY, RRR, FMP etc.

The meeting ended with a vote of thanks to the Chair.

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**LIST OF OFFICERS PRESENT IN THE 137<sup>th</sup> MEETING OF THE ADVISORY COMMITTEE ON IRRIGATION, FLOOD CONTROL AND MULTI-PURPOSE PROJECTS ON WEDNESDAY, THE 28<sup>th</sup> AUGUST, 2018 AT 15:00 HRS IN THE COMMITTEE ROOM OF CENTRAL WATER COMMISSION, 2<sup>nd</sup> FLOOR, SEWA BHAWAN, R K PURAM, NEW DELHI.**

Shri U.P. Singh, Secretary, MoWR, RD&GR

**In Chair**

**Members, Advisory Committee or their representatives / nominees**

**S/Shri**

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| 1. S. Masood Husain, Chairman, Central Water Commission  | Member           |
| 2. Jagmohan Gupta, JS & FA, MoWR, RD& GR   | Member           |
| 3. Dr. E. Sampath Kumar, Member, Central Ground Water Board (Representing Chairman, Central Ground Water Board). | Member           |
| 4. P.C. Jiloha, Chief Engineer (HPA), CEA, M/o Power (Representing Chairman, CEA)                                | Member           |
| 5. Dr. Ramanand, Dy. Commissioner (RFS), (Representing Secretary, Deptt. of Agriculture Cooperation & FW)        | Member           |
| 6. Shyla Titus, Dy. Secretary, M/o Tribal Affairs (Representing Secretary, Tribal Affairs)                       |                  |
| 7. C.K.L. Das, Chief Engineer, Project Appraisal Organization, CWC   | Member Secretary |

**Special Invitees:**

**MoWR, RD&GR**

**S/Shri**

1. T. Rajeshwari, Additional Secretary
2. Akhil Kumar, Joint Secretary (A&GW)
3. K. Vohra, Commissioner (SP)
4. RakeshToteja, Senior Joint Commissioner (FM)

**O/o Chief Adviser (Cost)**

**S/Shri**

1. B. Bandyopadhyay, Adviser (Cost)

**Central Water Commission, New Delhi**

**S/Shri**

1. Y.K. Sharma, Member (WP&P), CWC
2. N.K. Mathur, Member (D&R), CWC

3. Navin Kumar, Chief Engineer, IMO, CWC
4. R.K. Pachauri, Chief Engineer, PPO, CWC
5. N. Mukherjee, Director, PA(S) Dte., CWC
6. Rajiv Kumar, Director, PA(C) Dte., CWC
7. PiyushRanjan, Director, PA (N) Dte., CWC
8. S.S. Bonal, Director, CMC Dte. And I/C CA (Irrigation)-2 Dte.
9. Dr. D.R. Mohanty, Dy. Director, PA (S) Dte., CWC
10. A.K. Madhok, Dy. Director, PA (C) Dte., CWC
11. Sanjay Meena, Dy. Director, PA (N) Dte. CWC
12. Durgendra Singh, AD-II, PA (N) Dte., CWC

### **Ganga Flood Control Commission**

**S/ Shri**

1. Arun Kumar Sinha, Chairman, GFCC, Patna
2. Ajay Kumar, Director, GFCC, Patna

### **Officers from State Government**

#### **Bihar**

**S/Shri**

1. S.S. Pandey, Chief Engineer, WRD, Katihar, Bihar
2. Manoj Raman, Superintending Engineer, WRD, Bihar

#### **Maharashtra**

**S/Shri**

1. S.D. Kulkarni, Executive Director, TIDC, Maharashtra
2. Khalil H. Ansari, Executive Director, MKVDC, Pune, Maharashtra
3. R.P. Londeker, Chief Engineer, WRD, Amravah, Maharashtra
4. V.G. Rajput, Chief Engineer, SP, MKVDC, Pune, Maharashtra
5. Shiv Pal, assistant V.P. (C), BSES office Bld. SRD, Maharashtra
6. Vijay S. Ghogare, Superintending Engineer, Satara, Maharashtra
7. Supekar N.N., Superintending Engineer, Buljhana Irrigation Project, Maharashtra
8. A.M. Sinha, Superintending Engineer, Construction Circle, Kolhapur, Maharashtra
9. D.R.Shinde, Executive Engineer, Maharashtra
10. S.V. Hajare, Executive Engineer, J.L.I. Div., Khamgaon, Maharashtra
11. H.W. Solge, Executive Engineer, Jigaon Project, Maharashtra
12. P.B. Bhosale, Executive Engineer (Mech.), Satara, Maharashtra
13. R.S. Deshmukh, Executive Engineer, Lower Tapi Dam Division, Maharashtra
14. Vinod Munjappa, AE-I, Jihe Kathapur Lift Irrigation Division, Satara, Maharashtra
15. A.A. Shinde, AE-II, Jihe Kathapur Lift Irrigation Division, Satara, Maharashtra
16. D.S. Bhagwal, Engineer, Jihe Kathapur Lift Irrigation Division, Satara, Maharashtra
17. N.J. Goene, J. E. Lower Tapi Dam Division, Maharashtra

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