No. 6/266/08-PA(S)/ 313-316.
Government of India
Central Water Commission
Project Appraisal(S) Dte.

Room No. 410, Sewa Bhavan
R.K. Puram, New Delhi
Dated 16th April, 2010

Office Memorandum

Sub:- Dr. B.R. Ambedkar Pranahita-Chevella Sujala Sravanthi Project of Andhra Pradesh, "In Principle" consent of CWC for preparation of Detailed Project Report (DPR).

The guidelines for submission, appraisal and clearance of Irrigation and Multipurpose Projects 2002 have been circulated by CWC to all the State Governments. As contained in the guidelines, preliminary report for obtaining "In Principle" consent of CWC for preparation of Detailed Project Report should contain brief chapters on General Data. General Planning, Interstate and International aspects, Survey and Investigation including Geological Investigation, Seismic Investigation, Foundation Investigation. Construction material surveys, Hydrological and Meteorological Investigations, Hydrology etc. Drinking Water requirements, Irrigation Planning, Planning for other benefits as applicable, environmental and ecological aspects etc. These aspects are required for initial assessment of soundness of the basis planning of the Project proposal. The preliminary Report of Dr. B.R. Ambedkar Pranahita-Chevella Sujala Sravanthi Project of Andhra Pradesh received in CWC has been examined. Project outlines, observations, suggestions of Central Water Commission are given below:

(A) Project Proposal and General Planning

Dr. B.R. Ambedkar Pranahita-Chevella Sujala Sravanthi envisages diversion of 160 TMC of water from river Pranahita, a major tributary to river Godavari to irrigate an ayacut of 16,40,000 Acres in Adilabad, Nizamabad, Karimnagar, Medak, Warangal, Rangareddy and Nalgonda districts of Telangana region of Andhra Pradesh. Besides irrigation, the project proposal also provides provisions for drinking and industrial water supply. The estimated cost of the project is Rs. 40,300 Crores (SSR 2007-08).

The major structures include construction of a barrage across Pranahita River at Tummidi Hetti in Kontala (M) of Adilabad district and 7 composite link channels. The project intake is located upstream of barrage on right bank of river Pranahita. From Pranahita the water is diverted to Sripada Sagar Yellampally barrage from where it is further carried to the command areas in various districts through composite link channels.

The brief details of link channels are as below:

Link	Brief Description	Length (km.)		Ayacut (Acres)
		Gravity Canal	Tunnel	
Link I	From Pranhita River to Sripada Sagar Yellampalli Barrage.	100.00	16.00	56,500
Link-II	From Sripada Sagar Yellampalli Barrage to Mothu Vagu Balancing Reservoir to Mid Maniar Reservoir	11.40	25.23	Nil
Link-III	Mid Maniar- Reservoir to Dharamaram Reservoir to Singa Samudram Reservoir to Upper Maniar Reservoir	32.50	11.65	80,000
Link-IV	From mid Maniar Reservoir to Anantagiri Reservoir to Imamabad Resevoir to Tadkapalli Reservoir to Tipparam Reservoir to Pamlaparthi Reservoir	32.20	38.4	4,08,000
Link-V	From Tipparam Tank to Mulkapalli village to Chityala Mandal	118.5	7.0	2,20,500
Link-VI	From Tipparam Tank to Mulkapalli Village to Musi River to Chevella Tank. From Chevella tank to Parigi canal and Raikod Canal.	267.55	60.40	4,35,000
Link-VII	From SRSP Fore Shore to Nizam Sagar Canal and Nirmal to Mudhole constituency. From SRSP fore shore to Masani to Manchippa to Komatpalli.	286.82	47.05	4,40,000
	Total	**848.97**	**205.73**	**16,40,000**

The total length of water conveyor system is 1054.7 Km. involving lift of 1343m. met through 19 No. of lifts. The anticipated power requirement is 3300 MW for the project. The project lies in Godavri Basin and has interstate ramifications. The waters of Godavri are to be shared among co-basin states as per GWDT award. The project has been examined in CWC in light of GWDT award. The relevant clauses are:

Clause VII of the Agreement dated 06.10.1975 (Annexure-II of Annexure-A of GWDT) between Maharashtra and Andhra Pradesh reads as follows:

"Maharashtra and Andhra Pradesh agree to take up the following joint projects at the appropriate time with agreed utilization:

(a) Lendi Project.
(b) Lower Penganga Project
(c) Pranahita Project

And to set up joint committees for this project."

Annexure-B Clause V-(3)(B) of GWDT award reads that "the state of Andhra Pradesh and Maharashtra agree to have barrage/barrages across the Pranahita river at suitable sites so that they may provide irrigation facilities in their areas. The quantum of water that will be used by Maharashtra from these barrages will be reckoned against 41 TMC as specified in V(2)(B). The joint project/projects for such barrages are to be taken up after reaching separate agreements/agreement for them, between the state of Maharashtra ad Andhra Pradesh for the benefit of both the states or one state."

(B) <u>Recommendations from CWC</u>:-

1. 'In Principle' consent for preparation of DPR granted with the condition that all relevant clauses of GWDT award will be strictly adhered to.

2. There are many major lift irrigation schemes under construction in the region namely Godavri lift irrigation scheme, Sripada Sagar Project, proposed P.V. Narasimha Rao Kanthanapalli Sujala Sravanthi Scheme, Alisagar Lift Irrigation Scheme and Guthapa lift Irrigation Scheme etc. The source of power required for the project as well as its availability for lifting water needs to be ascertained/firmed up from the State Electricity Board. Undertaking to the effect may be obtained and incorporated in the DPR.

3. A comprehensive integrated water availability study considering utilizations of all completed/ongoing/contemplated projects above Dr. B.R. Ambedkar Pranahita-Chevella Sujala Sravanthi may be carried out and enclosed in the DPR.

4. Detailed chapter on Basic/Irrigation Planning as per guidelines should form a part of the DPR. B.C. ratio is to be worked out on the basis of procedure indicated in the working group report as applicable to lift schemes i.e involving depreciation for pumping system, cost of rising mains, cost of electricity etc. O&M charges to be taken as @ Rs. 600/ha. Approval by the State Agriculture Deptt. for the yield and rates of produce adopted should be obtained and enclosed in DPR. Cost of lift of water is to be included in the project cost.

5. An index map indicating command details of the existing & proposed projects adjacent to the proposed Dr. B.R. Ambedkar Pranahita-Chevella Sujala Sravanthi alongwith command details of Dr. B.R. Ambedkar Pranahita-Chevella Sujala Sravanthi may be enclosed in the DPR to establish that there is no duplicity of command.

6. All design aspects may be got vetted by CDO, Govt. of Andhra Pradesh. The Transient analysis and water Hammer studies for various pumping operations and conditions may be carried out and incorporated in DPR.

7. All the relevant environmental issues should be taken care of while preparing detailed EIA/EMP and mandatory Environmental and Forest and MoTA clearances need to be obtained and incorporated in DPR.

8. All the required drawings and designs in accordance with CWC guidelines may be incorporated in DPR.

9. The detailed cost estimate and IRR/financial returns for the project as per CWC guidelines may be submitted alongwith DPR.

10. All the comments communicated earlier on the preliminary report of the project may be considered/complied with in the DPR.

Keeping in view the above comments/suggestions of CWC to be incorporated in DPR, "In Principle consent" of CWC for preparation of DPR of Dr. B.R. Ambedkar Pranahita-Chevella Sujala Sravanthi (Andhra Pradesh) is hereby accorded. This "In Principle consent" of CWC for preparation of DPR in respect of the above project shall have a validity period of 3(three) years. In case, investment clearance is not accorded to this project with in the validity period, this "In Principle consent" will suomoto lapse.

This issues with the approval of Chief Engineer (PAO) CWC.

R.K. Kanodia 16.04.10
(R.K.Kanodia)
Director PA(S)

The Chief Engineer
Dr. B.R. Ambedkar Pranahita-Chevella Sujala Sravamthi,
Irrigation & CAD Deptt.
IInd Floor, Jalasoudha Building,
Errum Manzil,
Hyderabad (A.P)

Copy to:-

1. The Secretary (Irrigation), I&CAD, A.P. Secretariat, Hyderabad.
2. Chief Engineer (Hydrology) I&CAD, Errum Manzil, Hyderabad.
3. File No. 21/15/03-PA(S).

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Central Water Commission
Construction Machinery Consultancy Directorate
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Room No.209 (S), Sewa Bhawan,
R.K. Puram, New Delhi-110 066.

Sub: Project Report on Dr. B.R. Ambedkar Pranahita – Chevella Sujala Sravanthi

Ref: CWC I.D. No.6/266/10/Vol-2/PA(S)/950-58 dated 22.10.2010.

Reference is invited to above I.D. letter of Project Appraisal (S) Directorate vide which the subject Project Report was forwarded for examination of equipment planning aspects. The report has been examined and the observations in this regard are as follows:

1. It is observed that provision of ₹ 2001 lacs. worth of special tools and plants has been kept in the cost estimate of the project. The list comprises of a number of construction equipment like Hydraulic Excavators, Dozer, Front end loader, etc. As the works are proposed to be executed through award of contract, the provision under sub-head Q-special T & P is required to be restricted to general purpose equipment and transport & inspection vehicles only.

   As per CWC guidelines keeping provision of equipment for hiring out to contractor is not favoured.

2. In support of provision of general purpose equipment, a brief note indicating their requirement and the usage may be furnished.

3. Organisation chart in support of provision kept for inspection vehicles may be provided.

4. Full justification in support of equipment like explosive van, mobile service units, workshop equipment may be furnished as such equipment are normally required when the works are to be executed departmentally.

   The project authorities may be advised to furnished above clarification to this office at the earliest to enable further action in the matter.

(Atul Jain)
Director (CMC)

Director, PA (South), CWC, Sewa Bhawan, R.K. Puram, New Delhi-66.
I.D. No.21/AP/11/2011-CMC Dated 17th March, 2011.

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Central Water Commission
Inter-State Matters Directorate

411-A, Sewa Bhavan,
R.K. Puram, New Delhi-110066.

Sub: Detailed Project report of the "Dr. B.R.Ambedkar Pranahita-Chevalla Sujala Sravanthi project.

Ref: 1. CWC ID No 6/266/10/Vol II/PA(S)/450-58, dated 22.10.2010.
2. CWC ID No 6/266/10/-PA(S)/19, dated 6.01.2011.

Please refer to the letter at ref1 forwarding therewith DPR of the "Dr. B.R.Ambedkar Pranahita-Chevalla Sujala Sravanthi project"– Andhra Pradesh for examination from interstate angle. The DPR has been examined. It may be mentioned that the "in-principle" acceptance from inter-state angle for preparation of DPR of Dr. B.R. Ambedkar Pranahaita – Chevella SS Project utilizing 160 TMC was given by this Dte subject to incorporating the compliance to the comments in DPR none of which have been complied with by project Authorities in DPR. In particular this Directorate has requested for assessment of availability of water in different basins duly vetted by Hydrology Directorate of CWC which has not been done so far.

In Annexure-3.1 of vol-I of the report, shares of the Godavari Basin States have been indicated in accordance with various clauses of their agreement between Maharashtra and AP dated 6.10.1975 and between MP, Maharashtra and AP dated 19.12.1975. It may be mentioned that there is no exclusive agreement between MP, Maharashtra and AP dated 19.12.1975 in the decision of the GWDT. Besides while indicating the shares of Godavari Basin states according to agreement between Maharashtra and AP dated 6.10.1975, the provision in clause –V of the said agreement has not been taken in to consideration.

It is to be noted that as per clause V of Agreement reached between Chief Ministers of Andhra Pradesh and Maharashtra on 6.10.1975(Annexure II of Annexure A of GWDT decision), Maharashtra and AP were allowed to use 300TMC of additional quantity of water below Pochampad dam site for New Projects. Another Agreement was reached between Secretaries of AP, Maharashtra and MP on 7/8/1978 as supplement to above agreement (Annexure B of GWDT decision) which specified the sub-basin wise utilization through existing, under construction and proposed projects by each State below Pochampad dam site. The Agreement of 7/8/1978 contains provision for utilization of water through existing and under construction projects in addition to utilization of water through proposed projects by each State below Pochampad dam site. This Agreement not specifically gives details of 300TMC of additional quantity of water to be utilised by State of Maharashtra and AP below Pochampad dam site through New (proposed) Projects as per clause V of Agreement reached between Chief Ministers of Andhra Pradesh and Maharashtra on 6.10.1975. In view of above, the Annexure3.1 of vol-I of the report needs to be reviewed and needs to be recast.

Project authorities may be advised to furnish compliance/information /clarification for according clearance from inter state angle

This issues with the approval of Chief Engineer (IMO), CWC.

(B.P.Pandey)
Director

Director, PA(S), CWC, Sewa Bhavan,
CWC U.O. No.7/2/1(AP)/2010 -ISM/ 118 dated 11 /02/2011

2/ISM//AP / Pranihita…Chevell..LIS

3/1/2014/BCD(NW&S) Dte /476

Government of India
Central Water Commission
Barrage & Canal Design (NW&S) Directorate

West Block-2, Wing-2, 2nd Floor
R.K. Puram, New Delhi

Sub : Dr. B.R. Ambedkar Pranahita-Chevella Sujala Sravanthi project. Telengana.

Ref. : CWC U.O No 6/266/2013-PA(S)/1127 dated 21-11-2014

The above DPR was received in this directorate in 20 nos. of different volumes from PA(S) Dte, CWC vide above referred letter for technical examination.

After detailed technical examination concerned with Barrage and Canals. The following observations/ comments are as follows :

Barrrage:

As the Project Authorities have not submitted the alignment of initial reach of canal from km 0.00 to km 2.782 it seems the barrage alignment is tentative. Any change in the alignment will lead to again carry out the geological and other investigations at the new site and foundation soil properties may change and hydraulic design of barrage will also needs to be revised accordingly. Therefore examination at this site unless the barrage alignment is final will be of no use. This needs to be clarified. However following information is required.

1. Bore Hole have been done only along the barrage axis. To know the profile of rock etc the bore hole in the U/S and D/S of Barrage axis should be provided.

2. Cross section of the the River at the proposed site with interval of 200 m u/s and D/S upto 1 km and thereafter at 2 km interval upto the distance backwater is likely to extend has not been provided.

3. The Hydrology and design discharge of barrage should be vetted form the Hydrology directorate of CWC if done then its report be submitted

4. Contour plan covering an area of 5 km U/S and D/S upto a distance where pond effect extend and upto elevation of 2.5 m above HFL with contours at interval of 0.5 m to 1.0 m in the scale of 1:2500 be provided.

5. Condensed L-section of the river showing observed water levels upto 5 km D/S and 15 km U/S or distance upto which the back water effect is likely whichever is more showing HFL and Min W/L needs to be provided.

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Contd..2/-

Canal

1. The total length of the canal in this project is 1055 km. out of which the length of gravity canal is 849 km and length of Gravity Tunnel canal is 206 km. project authorities has submitted the canal alignment from 2.782 km to 72.15 kms only. The alignment of canal from off take point to 2.782 km is not submitted due possibility to change in the alignment of Barrage axis. The canal alignment after 72.15 km to the end of canal has not been submitted as yet and it is under finalisation. The above mentioned reaches the canal alignment may be submitted for scrutiny.

2. In the reach of 7.25 to 8 km in drawings the base width of canal has been shown as 67.50 m with side slopes of 2: 1 with bed slope of 1:8450 whereas in calculations by this data the Q becomes 568.005 cumecs against the required discharge of 583.00 cumecs. But in calculation sheets the bed width has been taken as 69.5 m . Clarify it.

3. Command area survey plan map showing area commanded of each off taking channels, alignment of main canal, distributaries etc on a contour interval of 0.5 m has to be provided.

4. Under drainage arrangements of canal not provided in DPR.

5. Condensed L-section of the canal showing the ground profile, logging of bore hole drilled at 500 m or less upto FSD or 1.0 m below design bed level in rock whichever is less. Bore hole data at banks as well as at bed level at 500 m.

CD works

1. There is no soil investigation data available in DPR for CD works. The data needs to be submitted. Without soil investigation examination is not possible.

2. For CD works contour plan with contour at interval of 0.5 m to cover an area upto 300 m on either side of centre line of the canal be provided.

Various designs are under examination and further comments/ information required if any will be intimated

This issues with the approval of Chief Engineer Designs(NW&S)

(R.K. AGRAWAL)
DY. DIR, BCD(NW&S)

Director, PA (S) Dte, Room no. 410(S), CWC, R.K.Puram, New Delhi
CWC U.O. No. 3/1/2014-BCD(NW&S)/ 476 Dated 12-12-2013

केन्द्रीय जल आयोग
जल विज्ञान (दक्षिण) निदेशालय

विषयः—**:Detailed Project Report of Dr. B.R. Ambedkar Pranahita – Chevella/ Sujala Sravanthi Project**

संदर्भः— (i) CE/Dr.BRAPCSS/Hyd/DEE-2/AEE-9/Hydrology/2014/413 dated 24/11/2014
(ii) This office letters dated 18-01-2013
(iii) This office letter dated 24/10/2014

FR is the letter from project authorities submitting the revised water availability series till year 2003.

The water availability series for the project was finalized on seasonal basis vide letter under reference at (iii) based on the data and analysis submitted by the project authorities. Now project authorities have updated the series upto year 2013 and have proposed to adopt the yield series from 1986 to 2013 in the simulation study. The revised study has been scrutinized in the office and observations of this office are as under:

1. Project Proposal

Dr. B.R. Ambedkar Pranahita-Chevella Sujala Sravanthi project envisages diversion of 160 TMC of water by constructing a barrage across river Pranahita, a major tributary of river Godavari. It is proposed to further utilize 20 TMC of water from river Godavari at Sripada Yellampally Project. It is contemplated to irrigate a command area of 6, 63,700 hectares in Adilabad, Nizamabad, Karimnagar, Medak, Warangal, Rangareddy, and Nalgonda districts of drought prone areas in Telangaqna

Besides irrigation, the project also envisages providing 10 TMC as drinking water to the villages en route., 16 TMC as industrial water and 30 TMC as drinking water to twin cities of Hyderabad and Secunderabad.

The catchment area of Pranahita up to the diversion site is about 1,01,897 sq.km lying in the states of Maharashtra, Andhra Pradesh, Madhya Pradesh and Chhattisgarh. The yield at the intake point is contributed from three sub-basins namely Penganga (G7), Wardha (G8) and Pranhita (G9).

2. Earlier Hydrological Studies

In principle consent of CWC for the preparation of DPR of Dr. B.R. Ambedkar Pranahita – Chevella /Sujala Sravanthi Project was accorded in April, 2010.

The DPR was initially submitted in October, 2010 and observations of this office on hydrology portion were communicated vide this office letter dated 14-12-2010. The compliance to the observations of this office were submitted in August, 2011. The design flood study was found in order and estimation of 50 year, 100 year and 500 year return period floods of 41822 cumec, 46628 cumec and 57731 cumec

respectively were recommended for planning of the project. However, the compliance on water availability were not found in order and observations were conveyed from time to time. The monsoon yield series for the project was finalized by office as conveyed vide letters dated 07-09-2012 and 26-11-2012. In the approach adopted earlier, no water availability was considered from the catchment of various projects of u/s state(s) as specified in GWDT award (**u/s state entitled to use all water upto specified locations**). Later, it was clarified by PAO, CWC that u/s state(s) entitlement shall be restricted as per basin/sub-basin wise master plan. Accordingly, the yield series was modified and conveyed to project authorities on seasonal basis vide letter dated 18-01-2013 (on seasonal basis) and vide letter dated 24-10-2014 on 10 daily basis.

Project authorities have now updated yield series till 2013 and proposed to adopt the yield series from 1986 to 2013 for the simulation studies

3. Updated Water Availability Study

The water availability at the project location is contributed by three sub-basins namely Penganga, Wardha and Pranahita of Godavari basin. The procedure adopted by project authorities is largely based on approach as adopted during the finalization of yield series conveyed vide letter under reference at (ii). The project authorities have now updated till year 2013 and proposed to adopt the yield series from 1986 to 2013 in the simulation studies. It is mentioned in the report that gridded rainfall as supplied by IMD has been used in updating the yield series. The project authorities have also added the non monsoon period contribution to the monsoon series. It is stated that non monsoon contribution from free catchments of three basins i.e. catchments below specified locations as mentioned in GWDT have only been considered. It is further stated that non monsoon flows shall be during non monsoon period in case of shortfall during monsoon period. The 10-daily annual net yield up to the PCLIS has been assessed as 250 TMC at 75% dependability based on series generated from 1986 to 2013.

Observations:

(i) The details of assessment of weighted average rainfalls used beyond year 2003-04 for various catchments of Penganga, Wardha and Pranhita sub-basins covering the basic data used, method adopted in assessing the average rainfall, influencing factors etc may be submitted. It is further submitted that gridded rainfall data has been generated through interpolation using point rainfall data of few stations in the country. It is suggested to compare the assessment of average rainfall derived using point rainfall data and gridded data for some of the catchments.

(ii) It has been proposed by project authorities in the updated study to lift the non monsoon flows also from barrage site on Pranhita generated from the free catchment. As mentioned in the DPR, the project envisages lifting of Pranhita water during flood period. As flows during the non monsoon period are very

nominal (4-6 percent of monsoon flows) in Godavari basin, the proposed diversion of water during non monsoon period may impact the performance existing/ongoing schemes in Lower Godavari sub-basin (G-10). These aspects may be seen before taking the above decision i.e diverting water during non monsoon period.

(iii) As assessment of yield series at the barrage site is also linked with assessment of entitlements of u/s states, it is suggested to use relatively longer series say about 35-40 years as suggested earlier.

This issues with approval of Chief Engineer, HSO, CWC.

(भोपाल सिंह)
निदेशक
(का०प्र०)

निदेशक, परियोजना मूल्यांकन (द•), निदेशालय, के.ज.आ. नई दिल्ली–66
पत्र संख्या 7/AP–87/2008-जल वि•(द•)/215 दिनांकः 05/12/2014

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भारत सरकार
केन्द्रीय जल आयोग
सिंचाई आयोजन । दक्षिण । निदेशालय

203 . सेवा भवन रामकृष्णपुरम्
नई दिल्ली 110066
Ph. No.011-26104280
Email: ipdte@nic.in

विषय : Dr. B.R. Ambedkar Pranahita Chavella Sujala Sravanthi Project, Andhra Pradesh.
संदर्भ : CWC ID No. 6/266/2013-PA(S)/1754 Dated 19/08/2013

Please refer to the letter mentioned above vide which replied of the project authorities to the earlier comments on irrigation planning aspects have been submitted to this Directorate. The same has been examined and the comments thereon are as under:

1. Basic Planning

(i) The annual yield series as finalized by Hyd. (S) Dte. was conveyed CWC letter No. CWC ID No. 6/266/2013-PA(S)/134-35 Dated 21/01/2013. Further, while conveying the annual yield series, it was intimated by Hydrology Directorate of CWC that monsoon series may be suitably disaggregated into 10- daily series as required for simulation by the project authorities. The same has been done by the project authorities and accordingly working tables have been prepared and submitted. In view of suggestion for disaggregating monsoon series into ten-daily for simulation by the project authorities, this Directorate has no comments to offer at this stage. However, in case of any change in the ten-daily series as and when finalized by the Hydrology Directorate of CWC, the working tables will be accordingly revised / modified.

(ii) It is stated that the part of command area is withdrawn from Sripada Sagar (Yallempally) project and integrated with Pranahita Chavella LIS vide Govt. Memo. No. 14491/Maj.Irr. VIII(1)/06, I&CAD (PW: MAJ IRR VIII) Dept. dated 16/04/2008. The changes may be ensured by reflecting the same in revised planning of Sripada Sagar project.

(iii) In respect of suggestions made for various alternative studies for project, the project authorities have stated other alternatives for providing irrigation in the command area are not possible due to various limitations i.e. topography, limited scope of tanks, limitations / feasibility of extracting groundwater to meet the full demand of the command etc. In view of this, no further comments to offer.

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PI discuss before issue

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(iv) It is stated that link from Tipparam to Chavella cannot be seen in isolation as total water required is being lifted and conveyed in series right from Pranahita barrage to Tipparam tank. This link does not have any separate water source nor can the command be irrigated by any alternative source. In view this, no further comments to offer.

(v) Regarding supply of water to Kakatiya canal as per the utilization pattern, it is stated that there is existing reservoir (Mid Mannair Dam) with 24.7 TMC capacities just downstream of the point of dropping Pranahita waters in Kakatiya canal which will absorb all the fluctuations of supply and demand and irrigation pattern of SRSP will not be disturbed. It is further stated that conjunctive use of groundwater available will be made wherever possible and cost of same is provided in the estimate. In view of this, no further comments.

2. Crop Water Planning

(i) Regarding cropped area in pre-project conditions, it is stated that information furnished from Agriculture officers in total was scrutinized and based on the same; Director of Agriculture furnished the report. In view of this and clearance of the DPR by Ministry of Agriculture, no further comments.

(ii) In respect of pre-sowing water demands, it is replied that the same will be met from rainfall. Further the groundwater to the tune of 32.74 TMC is available in the command area which may also be utilized. In the earlier replies, it is stated that the sowing period of Kharif crops is in the 1st and 2nd week of July when the monsoon effects come in force. Groundwater (assessed as 32.74 TMC in command) may be used for pre-sowing water demands in Rabi crops in case of shortfall in the rains. It is further stated that this practice is followed by the farmers since ancient days in the command area and is likely to be followed in future also. The average annual rainfall in the command area is stated in DPR in range of 753 mm to 1157 mm. The cropping pattern is kharif oriented (663700 ha) and rainfall in July will be sufficient for meeting the pre-sowing water demands. The rainfall in October month is stated more than 50 mm and same may meet the pre-sowing water demands for Rabi crops. Any shortfall in meeting the pre-sowing water demands from rainfall may be ensured from the groundwater as stated by the project authorities. In view of the above clarifications from the project authorities, the crop water demands otherwise found to be in order.

3. Working Tables / Simulation Studies

As mentioned earlier in para 1(i), the monsoon yield series has been disaggregated into 10- daily series by the project authorities and accordingly working tables for 34 years (1970-71 to 2003-04) along with groundwater

utilization ranging from 2.19 TMC to 32.74 TMC to cover up deficit in surface water have been prepared and furnished. The same has been examined and found to be in order in respect of success of the project. The overall success has been assessed as 85.29 % with the 10- daily yield series as made available by the project authorities. . However, in case of any change in the ten-daily series submitted by project authorities by Hydrology Directorate, the working tables will be accordingly revised to assess the success of the project.

4. B. C. Ratio

(i) The cost of the project may be got approved from Cost Appraisal (I) Directorate of CWC. The adequacy of provision for cost of drip irrigation in the command in the overall cost of the project may also be examined by Cost Appraisal (I) Directorate of CWC. Further, cost of tubewells, its installation etc. for groundwater use may also be included in the estimated cost of the project. The copy of finalized abstract of cost may be furnished.

(ii) In respect of ensuring power supply to the project, its cost etc. the project authorities have replied that the availability of power to the project is ensured by the APGENCO (A letter from A.P. TRANSCO dated 18/10/2010 is appended). Further, it is replied that APGENCO has already agreed to supply the required power at Rs. 2.60 per unit for the project. No further comments in this regard.

(iii) The project authorities have agreed to considered the revised O& M cost @ Rs. 1175 per ha for CCA or annual irrigation , whichever is more and cost of land development @ Rs. 20000 per ha for the purpose of B.C. Ratio computations.

B.C. Ratio computations on the above lines and considering the finalized cost of the project may be furnished for further examination.

यह मुख्य अभियन्ता सिंचाई आयोजन प्रवन्ध के अनुमोदन से जारी किया जाता है ।

भाल चन्द्र 06/09/2013

(भाल चन्द्र विश्वकर्मा)
निदेशक. सिंचाई आयोजन । दक्षिण ।

निदेशक. परियोजना मूल्यॉकन (दक्षिण) (PA-S), केन्द्रीय जल आयोग. सेवा भवन नई दिल्ली
के.ज.आ.आई. डी.सं. 2/1393/ IP(S)/2008/ 446 दिनांक: 06/09/13

Tel. No. 011 - 26108296
Telefax: 011 - 26102420

Government of India
Central Water Commission
Hydel Civil Design (NW&S) Directorate

Wing No. 1, 1st Floor,
West Block 2, R.K.Puram,
New Delhi -110066

Sub: Dr. B.R.Ambedkar Pranathita Chevella Sujala Sravanthi Lift irrigation Scheme - Govt. of TS - Package No. 7 & 8.

Ref : CWC UO no. 6/266/2015-PA(S)/137 dated 25.02.2015

The entire scheme envisages transfer of 160/180 TMC of water from Pranahita to Chavella through gravity and series of 22 lifts. The package 7 constitutes lift from Medaram canal to offtake point at Kakatiya canal crossing and Package 8 constitutes lifting of water from the Kaktiya canal crossing onwards to Mothe vagu.

The documents submitted to this Dte. by the project authorities for technical examination of these particular packages i.e. 7 & 8 of above mentioned lift irrigation scheme were examined and the initial broad observations from hydel civil designs angle were communicated vide t.o U.O.No.22/1/2014-HCD(NW&S)/1151, dated 10.02.2015. Now, the compliance of the project authorities has been received vide letter under reference. The compliances received have been examined and further comments/ observations are given below:

A. General

1. The availability of power and its safe transmission to consumption location may be assured by the project authorities at the DPR stage itself, as it forms a significant input for the success of the entire scheme. Similarly, the assessment of quantum of power required for this particular package may got to be examined by appropriate authority. The sizing of components like pump house, transformer hall, etc. which depends upon the electro mechanical designs has not been examined as it is in the scope of electro-mechanical designs. Similarly, the design of electro mechanical components, pumps, draft tube, etc has not been examined and may be examined by appropriate competent authority in consultation with PAO, CWC.

2. The water availability at various reservoirs, inflows & outflows from each reservoir along with the capacities of the reservoirs to cater such inflow, out flow and storage, if needed, may be examined by Irrigation Planning Dte., CWC for the operation period as proposed in the DPR. A detailed working table mentioning above details along with the design discharge for each lift may be vetted by the I. P. Dte. , CWC for technical examination of DPR from hydel civil angle.

3. It is to brought to your notice that the compliance submitted was without any proper indexes and reference to relevant drawing , tables, page no, etc., are also missing, which makes the appraisal difficult and time consuming. This issue may be kept in view while submitting compliances in future.

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B. Geological Exploration and Geology

1. In the previous comments it was emphasized for an exploratory drift along the entire length of the pump house is required to be carried out to have an idea about the likely geology and prevailing rock mass conditions at the pump house site. Various tests as per the relevant BIS codal provisions may be carried out to ascertain the rock mass conditions at pump house location. The hydro fracturing tests for determination of in-situ stress condition of the rock mass may also be carried out. This exploration is necessary in view of huge underground caverns being planned at the DPR stage itself. Hence it is once again requested to excavate the exploratory drifts along the length of pump house and submit the geological section prepared based on drift logs.

2. Intake Structure

1. The hydraulic design calculations with respect to the minimum water seal requirement for preventing the formation of vortices have not been carried out.
2. The drawing of intake is sketchy and lacks clarity and therefore, the structural adequacy of components of intake cannot be commented.
3. The flow velocity through trash rack has been computed without considering the clogging of metallic trash rack; the same may be revised with permissible clogging. The details of the metallic trash racks have also not been provided.
4. The silt management aspects for preventing the entry of silt into intake have to be described in detail supported with adequate silt data.
5. The technical clearance of BCD (NW&S) Dte. on the aspects of the design of Initial approach channel, lead channels, cross regulator, stilling basin and CD works for package 7 & 8 with similar structures of the project as and when received may be communicated to this Directorate. Similarly, clearance of Gates Design (NW&S) Dte on the hydro-mechanical components, gates, etc. may be furnished as and when received.

C. Tunnels

1. The economical diameter calculations as submitted in the compliances have many discrepancies and are not correct. The same may be computed by adopting the procedure described in the BIS code. Similarly, the D shape of the tunnel, keeping in view the finished dia of the order of 10 m/ 7.5 m is inappropriate.
2. The tunnels are planned at centre to centre spacing of 50 m. The justification for adopting this spacing may be supported by an appropriate rock mechanic studies for justifying the spacing of 50 m C/C.
3. The design of tunnel support system presented in the report is generic and theoretical in nature without any site specific rock mechanics and geological data.
4. The design of the tunnel lining has still not been submitted by considering internal pressure as per the outcome of pressure envelopes of hydraulic transient studies. Similarly the tunnel linings shall be designed for subjected external water pressure. The design of intermediate tunnel of 7.5m dia in the package 8 may be carried out by considering the worst internal & external pressure conditions.

D. Surge Tank & Hydraulic Transient Analysis

1. A drawing no. PCLIS/Pkg 7 /cistern/1 DT structure shows an outlet at surge tank being provided with trash rack. The trash rack arrangement at this position is

required to satisfy the codal provisions of flow through velocity and structural adequacy as per relevant BIS code.

2. A mechanism to ensure the sequential starting of the pumps of package 7 & 8 as stated in the compliance may be elaborated.

3. Even though it is not possible to start the pump before 30 minutes after tripping, the hydraulic design of surge tanks and associated structures may be carried out for worst conditions as mentioned in the BIS code.

4. The surge analysis may be carried out by taking the value of the Manning's coefficient for the upsurge and down surge analysis as per BIS code: 7396 and the results of the upsurge and down surge cases may clearly be summarized in a tabular form.
5. For pump restart case after tripping of the pumps, the pumps may be re-started at the time of maximum negative velocity in the tunnel instead of after 30 minutes as taken in the analysis. Similarly, for pumps tripping after starting of the pumps, the pump may be made to trip at the time of maximum positive velocity in the tunnel. These cases may also be taken into consideration for finding out the maximum & minimum surge levels in the surge tank. The same may be furnished

6. It is still not clear by what mechanism, the interdependent operation of the pumps at package 7 & 8 will be ensured during the starting of pumps one after the other in a particular pump house without any chance of in between starting of pumps of other pump house. If there is a condition for simultaneous starting of pumps of different pump house at the same time, then this condition may also be considered in the hydraulic transient studies.

7. A systematic line diagram showing all relevant hydraulic physical features of the scheme of package 7 & 8 may also be annexed in the hydraulic transient studies. The area of surge tank as calculated is by taking into consideration the hydraulic head acting on the pump from the lower reservoir side (suction side), ultimately resulting in higher surge area. An exhaustive study to find the optimal surge area with a view point of stabilization of oscillations occurring in the surge tank may be carried out.
8. The discharge values of Q1, Q2 and Q3 mentioned in the hydraulic transient analysis vide table-2 are still not clear as the discharges mentioned in the Table are different from those mentioned in Table-1. These discharges further needs to be clarified with their time of occurrence after the initiation of hydraulic transients for cases examined.
9. The schedule of opening of pump (Q vs t) has not been provided in the report. The schedule of opening is a significant input parameter for hydraulic transient analysis and the same may be obtained from pump supplier for realistic determination of surge levels in the surge tank during hydraulic transient conditions.
10. The issue of hydraulic resonance for mass oscillations as raised in our earlier letter has not been answered and the same may be carried out as per the codal provisions of IS Code No: 7396.and results furnished.
11. Specified load acceptance and rejection cases of both the pump houses of Package 7 and 8 may also be explored for fixing of maximum and minimum surge levels in the surge pools as per the provisions of IS 7396.The issue still remains unanswered in the compliance. The same may be complied and submitted for examination.
12. The reasons as stated in the compliance that FSL will be maintained in the open channel cannot be accepted and the transient studies may be carried out for situation of canal running below FSL which might be critical case in the down surge condition.

E. Pump House Complex

1. The orientation of the underground cavers have been fixed w.r.t the jointing pattern of the rock without taking into the consideration of prevailing in-situ stresses. The orientation of the major caverns and other underground structures may be optimized based upon the above two parameters.
2. From the drawings of pump house, it is also observed from the submitted L-section, that the vertical rock cover available above the closely located caverns of the pump house complex in package 7 &8 is very much on the lower side (about 40 m) and realistic stress analysis / FEM studies by taking into consideration the physio-mechanical characteristics of rock mass and prevailing in-situ stresses is required to be carried out at the DPR stage of the project itself. The analysis may be carried out and submitted.
3. In our previous comments, it was suggested to carry out design of rock support system by adopting mathematical stress analysis studies by utilizing the physio-mechanical properties of rock mass, at site geological conditions, joint patterns and in-situ stresses of the rock mass found out from the tests. The same may be carried out for package 7 & 8 and submitted.

F. Rising Mains

1. Economical diameter study for fixing the size of the rising mains submitted now is not proper; the same may be rectified as per BIS codal provisions.

2. The rock support system design for the rising mains may be carried out as per the rock mass classification along the length of the delivery mains and submitted for examination. The rock support system shall be designed at the DPR stage itself.

3. The water hammer effect has not been taken into consideration for the design of delivery mains but assumed as 30%. The hydraulic transient analysis for the delivery side of the pumping system may be carried out and resulting pressure envelopes may be utilized for the design of delivery mains at the DPR stage itself.

4. The stabilization analysis and design of rock slope upstream of the anchor block may be carried out and furnished at the DPR stage itself.

5. The rising mains may be designed with actual external water pressure acting on the rising mains at different elevations of the rising mains.

G. Delivery Cistern

1. The design of the Delivery Cistern is required to be got examined from CMDD (NW&S) Dte.

Observations as highlighted above may be complied and submitted for further examination.

(A. K. Shukla) 16.4
Director

Director, PA(S), 410(S), CWC, Sewa Bhawan, R.K.Puram, New Delhi
CWC U.O. No. 22/1/2014–HCD (NW&S)/ 1466 dated 16 .04.2015

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Central Electricity Authority
Hydro Engg. & Technology Development Division

Subject : Examination of DPR of Dr. B. R. Ambedkar Pranahita-Chevella Sujala Sravanthi Project – Andhra Pradesh

Please refer to your letter no. 2/AP/Genl/CEA/91-PAC/319-20 dated 24.02.2015 enclosing therewith a copy of letter from Project Appraisal (S) Directorate, CWC dated 17.02.2015 alongwith a CD containing DPR of above mentioned Project for examination of its electro-mechanical chapter & BOQ.

In this regard, it is requested that the viability of the irrigation scheme may be got checked from the appropriate divisions of CWC/CEA. However, in the meantime it is also observed that the electro-mechanical aspects of these pumps have not been covered in the DPR and the following details / information may be furnished for taking up the examination of DPR.

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26/03/15.

1. Layout drawing(Plans, Cross- section, L-section) of each pumps house including unit spacing, location of equipment / panels.
2. Design calculation for each type of pumps including power input, discharge and head calculations.
3. Head water and tail water levels for each pumping stations.
4. Details of all electrical and mechanical equipments and their rating.
5. Details of all unit and station auxiliaries including EOT cranes and protection valves etc.
6. Complete details of Switchyard, sub-stations including their structure and power connectivities.
7. Drawings of water conductor system & water discharge system for each pump house.
8. Single line diagram for HT & LT.
9. Starting methods of pump motors, controls & protection.

Further, these details and the BOQ of all pumping stations need to be furnished in the prescribed format as per the guidelines available at the CEA website www.cea.nic.in. A complete set of DPR containing all volumes may be submitted in hard copy

S. Srivastava
25/3/2015
(Sanjay Srivastava)
Director(HE&TD)

Chief Engineer (HE&TD)
24/3/15

Chief Engineer (PAC), CEA

No. 10/221/HE&TD/ 354 dated : 26 March, 2015

Copy to Chief Engineer (HPA), CEA

Government of India
Central water commission
Embankment (NW&S) Dte.

Subject: Dr.B.R.Ambedkar Pranahitha-Chevella Sujala Sravanthi Project (Telangana State).

Ref: Letter No. CE/Dr. B.R.A. PCSS/DEE-3 /AEE-9/14/475, dated 23-12 -2014.

Kind reference is invited to the above .Compliance of our comments sent vide this office letter no. CWC UO. No.2/5/2014/Emb. (NW&S) /317, dated 12.12.2014, on the subject mentioned above, has been received for clearance /further comments. Compliance received has been scrutinized at this end. Our observations are as given below.

1. Dam foundation investigations have not been carried out as per DPR preparation guidelines and **IS :6955-1973 " Code of Practice for Subsurface Exploration for Earth and Rockfill dams".**

2. For the analysis of Embankment Dam, Effective Shear Strength parameters (c' & ø') are to be used for both borrow and foundation materials as per **IS: 7894-1975 "Code of Practice for Stability Analysis of Earth Dams**".

3. Soil Dispersivity Identification Tests may also be undertaken viz. Sherard's Pinhole, SCS Double Hydrometer, Crumb tests and chemical Analysis of pore water extract for it Dispersivity Characteristics.

4. Based on the GSI investigation report and recommendations and as per **IS: 8414-1977 "Guidelines for Design of Under-Seepage Control Measures for Earth and Rockfill Dams**", & **IS: 6606 -1994 "Pressure Grouting of Rock Foundation in River Valley Projects- Recommendations**" foundation treatment drawing may be developed showing depth of overburden, fresh rock line, depth of C.O.T, rock grouting etc and may be appended in the report.

5. Only 6 nos of drill holes have been drilled in 6.37 km length of dam. In this regard, a certificate from GSI may be submitted clarifying that number of drill holes are sufficient enough for the assessment of foundation strata.

6. Provision of settlement Allowances may also be made as per **IS: 8826-1978. "Guidelines for Design of Large Earth and Rockfill Dams**".

7. Site Specific Seismic studies may be undertaken for estimation of Seismic Design Parameters. Seismic coefficient should be got approved by "National Committee on Seismic Design Parameters (NCSDP) for River Valley Projects" Ministry of Water Resources

8. The Drg. No.PCSS/PKG-11/IS/5.850/01 "Irrigation Sluices at Km.5.850 of Right Flank of Imambad Reservoir" Cut-off collars have been provided. As per the current International Practice it has moved away from the use of Cut-off collars in favour of drainage filters to prevent piping failure. The drawing may be modified accordingly. Details of Left sluices at Rd. 0.484 and design computations of both have not been appended in the report.

9. The Drg. No.PCSS/PKG-11/TS-01 "Typical Section of Earth Dam of Imambad Reservoir" only sand filter has been provided. For more effectiveness and to avoid

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migration of particles, it is always preferable to provide filter in three layers (sand + gravel + sand) as per **IS: 9429-1999 "Drainage System for Earth and Rock fill Dams Code of Practice**". Accordingly revised drawings may be submitted.

10. The following drawing at the minimum, may be furnished for the dam facilitate its examination.

    i) Free board at FRL/MWL.

    ii) Stability analysis of u/s slopes.

    iii) Stability analysis of d/s slopes.

    iv) General Layout Plan.

    v) Typical section and details.

    vi) Foundation treatment.

    vii) Plan & Upstream Elevation.

    viii) Right bank Irrigation Sluices.

    ix) Left bank Irrigation Sluices.

11. Water Balance studies for the whole scheme may be submitted indicating there in the storage volume of each structure enroute.

12. Design details and drawings for all the storage structures of the Pranahitha project may be submitted.

19/2/20.

(H.K.Haldar)
Dy. Director, Emb (NW&S) Dte.

Director, PA(S) Directorate, 410 (S), Sewa Bhavan, R.K.Puram, New delhi.
CWC Uo. No.2/5/2014/Emb. (NW&S)/ 23 **dated:** 19-2-2015

No.6/266/2015-PA(S)/ 105-06
Central Water Commission
Project Appraisal(S) Directorate

Tele/Fax: 011-26100735
Email: pasdte-cwc@nic.in

Room No.410(S)
Sewa Bhawan, R.K.Puram, New Delhi-66
Date: 17/02/2015

To,

Director, PAC
Central Electricity Authority
3rd Floor, Sewa Bhawan
R.K Puram, New Delhi

Sub: Appraisal of electro-mechanical aspects of Dr. B.R.Ambedkar Pranahitha-Chevella Sujala Sravanthi Project

Sir,

It is to inform that above cited project is an irrigation project envisaging diversion of 160 TMC of river water by constructing a barrage across river Pranahita, a major tributary of River Godavari. It is contemplated to irrigate the command area of 6.63 lakh Ha in addition of having provision of drinking and industrial water.

The Total length of the water conveyor system is 1055 Km (Approx.) comprising gravity canal of 849 km and tunnel canal of 206 Km. The number of lifts envisaged are 22 nos. with a total lift height of 1757 m. The total power and energy requirement for lifting this diverted water are 3466 MW and 8701 MU respectively.

As availability of this substantial amount of power and the its safe transmission to consumption location would be one of the important factor in ensuring the success of this scheme. Therefore it would be pertinent to examine the rationality of proposed power requirement of 3466 MW, its transmission aspects including the proposed transmission cost, sizing of pump houses, transformer halls, design of electro mechanical components, pumps draft tube etc.

The three nos. of digital copies of DPR of this project are being forwarded which would be supported by hard copies of DPR very shortly for further examination as well as necessary action. It is requested that relevant aspects of EM aspects (as cited in preceding para) may please be got examined by concern Division of CEA and may be communicated to this office on priority. It is also requested that appraisal of this proposal may be taken on priority due to the urgency being expressed by State Govt.

Encl: As above

Yours Sincerely

17.02.15

(Pramod Narayan)
Director

Copy for information:

Chief Engineer (I&CAD), Dr. B. R. Ambedkar Pranahita-Chevella Sujala Sravanthi Project, First Floor, Jalsoudha Building, Errumanzil, Hyderabad- 82, (Fax: 040-23306955) with a request to make available the additional 4 sets of DPR to CEA and may follow-up the matter with CEA

No. 6/266/2015-PA(S)/ 108

केन्द्रीय जल आयोग

Central Water Commission

परियोजना मूल्यांकन (दक्षिण) निदेशालय

Project Appraisal (S) Directorate

टेली/ फैक्स/ **Tele/ Fax: 011-26100735**
ई- मेल /**E-mail: pasdte-cwc@nic.in**

कमरा सं 410(द.)/**Room No. 410 (S)**
सेवा भवन /**Sewa Bhawan**
आर.के. पुरम /**R.K. Puram**
नई दिल्ली/ **New Delhi-110066**
दिनांक: 18.02.2015

To

Chief Engineer,
Dr. B R Ambedkar P-C Sujala Sravanthi Project,
Jalasoudha Building, Errummazil,Hyderabad,
Andhra Pradesh-500004
(Fax No. 040-23306955)

Sub.: Issues related planning aspects of Dr. B R Ambedkar Pranhita-Chevella Sujala Sravanthi project, regd

Sir,

As above cited project is under appraisal in CWC, there are certain important issues to be addressed in the planning which are highlighted as under:

1. It is proposed to divert 160 TMC of water from river Pranhita during monsoon period in addition to 20 TMC of water to be used from Sripada Yellampally Project. It is proposed to utilise/store some diverted water into 5 nos of existing enroute reservoirs as per the given detail:

Sl. No.	Existing Reservoir	Existing storage capacity (TMC)
1.	Sripada Yellampalli Barrage	20
2.	Medaram Tank	0.58
3.	Mothe Vagu Reservoir	1.65
4.	Mid-Manair Reservoir	25.87
5.	Upper-Manair Reservoir	2.10
	Total storage capacity	**50.20**

Regarding to utilise the services of above reservoirs, it has been stated in the proposal that dropping of water of river Pranhita will be resorted to only when there is a deficiency in the respective river flows of the reservoirs. *It means a conditional minimal storage of diverted water has been planned in these reservoirs contingent to any one of these being deficient in storage during the monsoon otherwise not (without quantification).*

It is further proposed to have a storage to the order of 14.70 TMC in the following 7 nos of new reservoirs to be constructed.

Sl. No.	New Reservoir	Proposed Capacity (TMC)
1.	Pranhita Barrage	5.0
2.	Ananthagiri Reservoir	1.7
3.	Imambad Reservoir	1.5
4.	Thadkapalli Rservoir	1.5
5.	Tipparam Reservoir	1.0
6.	Pamulaparthy Reservoir	1.0
7.	Chevella Reservoir	3.0
	Total Storage Capacity	**14.7**

Regarding the proposed utilisations of diverted water, the detail is given as under:

Sl. No.	Utilisation	Proposed Water volume(TMC)
1.	Irrigation	124
2.	Urban Drinking water	30
3.	Rural drinking water	10
4.	Industrial provision	16

From the above table, it is clear that a dedicated storage to the order of 56 TMC especially to meet the drinking as well as industrial requirement need to be put in place. There is also provision to irrigate 2,00,000 ha during Rabi season which exclusively depends on the reservoir stored water. Therefore keeping in view all these facts, following clarifications need to be furnished:

(a) The dedicated storage as proposed stands to the tune of 14.70 TMC only against a proposed for diversion water of 160 TMC of river Pranhita. This storage would be insufficient to meet even the drinking as well as industrial water requirement not withstanding the irrigation requirement for Rabi season for 2,00,000 ha of command. Therefore it is requested that a detailed justification note on this aspect clearly stating the integrated strategy with supporting documents as how the proposed diversion of 160 TMC of Pranhita river water is planned to be stored for proposed utilisations to match the demand and supply.

(b) In case any additional storage is proposed in the enroute 5 existing reservoirs, this proposed storage is required to be quantified based on long term available observed reservoir water level with corresponding storage data during the monsoon months as well as at the end of monsoon especially to meet the irrigation water requirement during Rabi season as well as drinking as well as industrial water requirement. In case of a good good monsoon year having wide spread rainfall, under such circumstances none of the reservoir would be able to store any extra water diverted from river Pranhita as proposed, hence a total storage of 14.70 TMC storage would only be available during that particular year. Therefore strategy to meet the requirement of proposed utilisations during such a wet year needs to be clearly spelt out.

2. There is a spillage of water during monsoon period especially during the high water stages. It has been estimated that approximately 70.2 TMC water is spilling corresponding to 75% dependable year based on proposed pumping provision for the submitted proposal. In case there arises a need for release of ecological flows as one of the condition in general being imposed now a days by MoEF wherein 30% monsoon flows, 25% non-monsoon/non-lean season and 20% in lean season corresponding to 75% dependable year is being advocated to be released, under such circumstances the proposed diversion of 160 TMC of water may not be available for utilisations. The strategy to meet out planned utilisations under such circumstances may be clearly brought out.

3. The command area map in a scale of 1:1,00,000 may be submitted showing the proposed command as well as existing command of existing/proposed projects (Major & medium projects) in the command area of this project. In case there is any overlapping of command with any existing/proposed project, this may please removed at this stage itself.

It is requested that above clarifications may please be submitted on priority.

Yours faithfully,

18.02.15

(Pramod Narayan)
O/C **Director**