

**INSPECTION NOTE OF PENCH DIVERSION
PROJECT BY E-IN-C, W.R.D., BHOPAL, DATED
19.06.2016**

OFFICERS PRESENT

1) Chief Engineer	Shri Gajadhar Sunaiya
2) Superintending Engineer	Shri P.N. Gour
3) Executive Engineer, Dam	Shri Ajay Gupta
4) Executive Engineer, Canals	Shri Rajeev Phirke
5) Executive Engineer, E&M	Shri P.N. Uikey

Agencies working

(1) Concrete Dam	i. M/s. S.E.W., Hyderabad. ii. M/s. Om Metals, New Delhi iii. M/s. KEC International, Mumbai
(2) Earthen Dam	M/s. H.E.S., Hyderabad
(3) Instrumentation	M/s. M/s. Encordiorite, Lucknow
(4) Electrification (Gallery & Pumps)	M/s. Kanshal Refrigeration, Gwalior.
(5) Electrification (HT Sub-station)	M/s. Om Prakash, Chhindwara M/s. R.K. Jain, Chhindwara
(6) Lift	M/s. United Elevators, Bhopal
(7) Generator	M/s. Kala Gentec Co.Ltd., Raipur

Pench Diversion Project is a Major Project. The Dam is situated in Chhindwara district, about 12 KM away from Tehsil headquarter Chourai. Chourai is on Seoni - Chhindwara Road. The catchment area is 1754 Sqkm and estimated yield is 641 MCM. Live capacity of the reservoir is 422 MCM. River closure work of this dam

is in final phase. The total length of the dam is 6520 m. Out of this, 360 m length is of concrete dam. Out of this 140 metre is overflow portion and 110 m on either side is non-overflow portion. There are 8 flood gates in the dam. Size of each gate is width 14 m, height 16.25 m. The concrete dam has one inspection gallery, which starts from block No. 1 and ends in block No. 19. Total length of the gallery is 350 m. It is connected on both flanks by concrete stairs. It is also connected by a lift to the top of dam. Lift in the lift shaft is to be fixed. On the day of inspection position of different components is as under:-

Submergence area :- Out of 1135 houses, 760 houses have been built in new places. Total displaced families taking 18 years and above norm are 2397. 1570 families opted for plots and 827 families opted for cash compensation. About 1000 houses in total are estimated to be built. It is reported that some oustees have built their houses in Chhindwara or other places and taken plot of 60 ft. X 90 ft. In Jamunia Rehabilitation site, plot size is 60 ft. X 40 ft. Basic amenities like roads, drains, electricity, water supply and government buildings are in final shape. Only electrification in Jamunia is to be done. E.E., E&M Shri Uikay said that electrification of Jamunia colony will complete by 30.06.2016. The Superintending Engineer has been asked to do DRONE photography of the submergence area prior to filling to have record of actual submergence.

Earthdam : - Earthdam has been raised upto the designed TBL 631.00 m. At two portion, work is incomplete due to ramps i.e. between Ch. 35 to 38 and at Ch. 110. These ramps are at present necessary for movement of machines, dumper, trucks, etc. Earthdam is yet to be raised to its shrinkage height. The length of the dam is 6520 m, means about 6.5 KM. Inspection along the toe of the dam during rainy season is necessary. Looking to the length of dam, it is instructed to provide 3.65 m. wide 30 cm thick M-15, 20mm graded metal concrete road as permanent way along the toe for swift movement of inspection vehicles. In earth dam following works are to be done:-

- i. Parapet wall on both sides;

- ii. Downstream drainage arrangement;
- iii. Turfing;
- iv. Downstream slope cutting;
- v. Downstream pitching.

Concrete Dam :- The following works in concrete dam are to be done:-

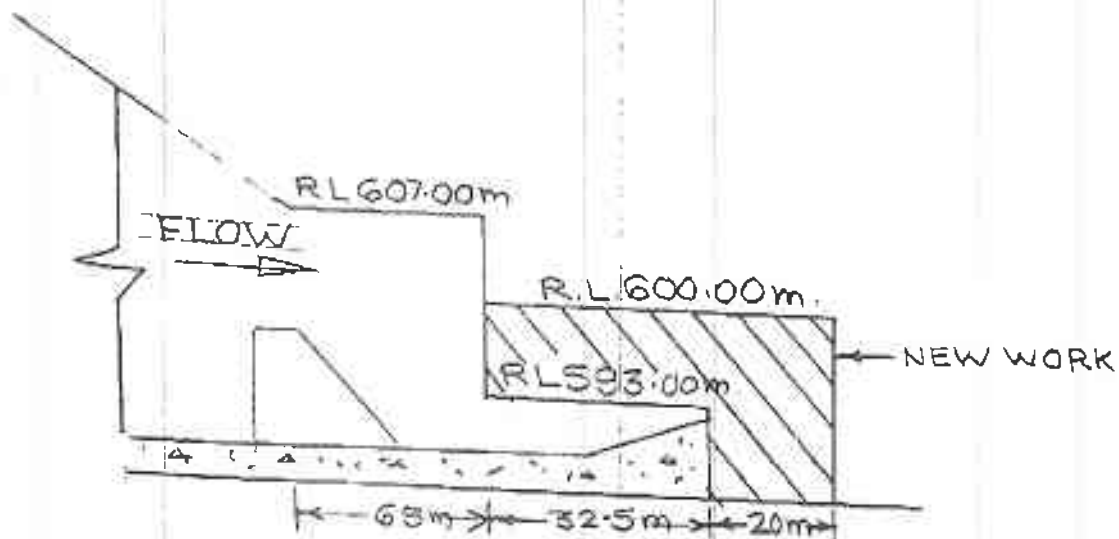
- i. Second stage concreting;
- ii. Power pack rooms.

Spillway gates :- Balance work is :-

- i. Power pack installation;
- ii. Hydraulic Cylinder (6/16 fixed);
- iii. Stop logs (5/12 received yet);
- iv. Lifting beam (One No.);
- v. Gantry Crane (design is pending with CWC Shri Rahul Singh, Director, Gates.)
- vi. Assembly lines for hydraulic System is to be fixed;
- vii. Bracings for arms are to be fixed. Cardanic assembly is to be fixed. 9/16 fixed.

Lift :- To be fixed. Tower Room is under construction.

Training wall has been built up to 65 m length beyond that a second wall of 32.5m length has been built.



The top RL of extended end sill is 593 m and extended training wall is at top RL 594 m which is only one metre above end sill top. During flood certainly the water will jump over this wall and form eddy's on the other side which may erode the earth dam toe. Therefore, it is instructed that this wall should be further raised to Top RL 600 m, This training wall must extend 20 m beyond end sill and then by turning it at right angle as return atleast for 10 m.

GAUGING: - Today the basin is empty. The Executive Engineer has been asked to fix gauges at all appropriate points like - in the basin, Spillway gates, LBC & RBC Sluice gates etc. In the initial reach of canal about 15 m away from the barrel end, lined canal should have gauge marked. It is also advised to write letter by black paint on white background. Use of red colour paint should be avoided as it bleaches very fast in Sunlight.

ACCESSIBILITY: - At every half KM in the earthen dam, concrete steps for coming down from dam top to Ground level should be built. It is specifically advised that the rise of steps should not be more than 15 cm, otherwise it may damage knee joints of the riders. Concrete steps flushing the dam from top to bottom on both the wrap around should be provided to have quick movement from dam top to the gallery and vice-versa, otherwise it may have about 3.5 KM walking exercise.

MIDWAY CREW SHELTER: - At RD 3330 m, there is a ridge. A two room shelter is also available nearby. The contractor has built a ramp for accessibility from this point. This should be developed as midway crew shelter for the patrolling staff. 2 Nos. Portable cabins should be fixed at this point.

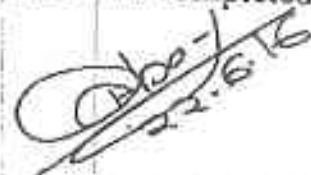
STAFF: - About 30 numbers staff is permanently required at the damsite. Machagora quarters will be allotted to them by E.E., Dam. E.E., E&M will propose transfer of required staff. About 15 employees from E&M L.M.G.T. Sub Division No. 2, Gadarwara pertaining to tube-well be posted to Pench Project. Some employees from Rajgarh are also willing to come to Pench Dam site. SE, Rajgarh will take their option and send to the E-in-C.

PENCH COLONY, CHOURAI: - E.E., Canal Shri Rajeev Phirke should investigate proper source of drinking water in consultation with P.H.E. or otherwise.

CANALS: - Inspected Right Bank Main Canal near RD 28300. This was particularly meant to see the vulnerable reaches of RBC. In previous inspection, in this reach, it was instructed to make RCC barrels, so that the canal may be safe against slipping of earth from sides. In two reaches (i) 28380 m to 28710 m; (ii) 29015 to 29745, RCC box have been provided. Now this portion is safe. Overhead water tank of PHE department is also safe. RBC has many small spots where canal is not through like near Khutia village RD 29800 (Banka - Naganpur village), in initial reach 0 to 450 m, 50% work is to be done. In RBC, 2 distributaries are there. (1) Dhamania, (2) Tail distributary. Damania is on completion except lining. Total 12.68 KM is the length. Lining 10.80 / 12.68 KM is complete. Earthwork 11.50 / 12.68 is complete. RBC designed irrigation is 15000 hectare.

L.B.C.: - Left Bank Canal has 5 main components. (1) Main canal, Completed 16.60/20.07 KM. (2) Bakhari Branch canal 34/34.5 KM completed. (3) Seoni Branch 39/49 KM completed. (4) Nandna 18/30.60 KM completed. (5) Hardua 10/11.9 KM completed.

Tunnel: - 3.24 / 3.24 KM completed.



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Water Resources Department,
Bhopal (M.P.)

Endt. No. 330 /SE(W)/V-C/2013 Bhopal, Dated: 22 June, 2016

Copy is forwarded to:

1. The Additional Chief Secretary, GOMP, Water Resources Department, Bhopal.
2. Chief Engineer, Wainganga Basin, WRD, Seoni.
3. Superintending Engineer, Pench WR Circle, Chhindwara
4. Superintending Engineer, Water Resources Circle, Raigarh

5. Superintending Engineer, Major / Admn., E-in-C office.
6. Executive Engineer, Pench Diversion Dam Division, Chourai Singna.
7. Executive Engineer, Pench Diversion Canal Division, Chourai Singna.
8. Executive Engineer, Hiran WR Division, Jabalpur.
9. Executive Engineer, E&M Division, Chourai Singna.
10. Web Manager, WRD for ONLINE feeding.



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