

COOLING WATER CHANNEL REPAIR WORK AT NTPC-SINGARAULI-AN INNOVATIVE APPROACH

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NTPC is one of the leading power Organization with 48028 MWs of Installed capacity. 2000 MW flagship station-NTPC-Singarauli is generating the cheapest power of the country. At this station, Cooling Water (CW) from ST-I (5x 200 MW) and ST-II (2x 500 MW) units returns through two open channels dedicated to each stage. In the month of July-2015, ST-II generation, got a jolt when ICRCL poklain inadvertently excavated the earth too close to the ST-II CW return channel wall. Due to this around fifty meter wall collapsed under channel water pressure and around 1800 Qsec of CW return water started eroding the road between the channel and switchyard putting 1000 MW of generation on stake. The erosion was arrested with some temporary measures. ST-II units were forced to run on partial load due to flow constraints of CW. Permanent repair of this channel required complete shutdown of 1000 MW. This activity was brainstormed at every level including apex level of O&M. Finally it was strategized to club Unit-7 annual overhaul, Unit-6 OH (with installation of DDMIS) and CW channel repair work together. The contract for this project was awarded to M/s L&T. To reduce the project time:

- The repaired wall of damaged channel was decided to be casted as complete prism shaped structure.
- Some initial changes were made in the water coffering methodology by introducing use of gabions consisting of sand filled geo bags in place of fabricated coffer panels.
- Further make-up water of VSTPP is tapped from CW discharge from NTPC-Singarauli and upstream water level of coffer dam had a close relation with the running of raw water pumps of VSTPP. To avoid any unwanted overflow from coffer dam and hence disruption in the repair activities, a seamless co-ordination was maintained with VSTPP.
- The thickness of Vertical lift of the channel was increased by 100 mm to facilitate mechanized pouring.

In overhauling schedule, CW channel repair was in critical path. But with above process innovation, meticulous resource planning and monitoring the job was completed and water was charged before four days of the scheduled date saving the generation of Rs. 1.8 Crores recovering 73% of the contract cost.

The paper deals with initial fore sight with respect to project execution time, the challenges faced and their mitigation, safety aspects of the work and innovative alterations in the process.

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