



## P. T. INDOCEMENT TUNGGAL PRAKASRA, TBK

### Regular Cleaning of Cooling Tower to Remove Algae and Repair or Replace Fill Float Valve

#### SUMMARY OF THE OPTION

Indocement is one of the largest cement producers in Indonesia, established in 1985 and currently operates 12 plants located in different areas. The existing cooling water tower at the powerhouse at Indocement is a Marley, Sigma 1244, and vintage 1992. It is a wooden tower with four cells. It was observed that two of its cells are idle, i.e. with no water flowing through them at all, yet the fan of each cell is running continuously. It is also suspected that the excessive algae growth throughout the tower may be due to the wastage of a large proportion of biocides in the overflowing water. PVC fills and side louvers are coated with a thick layer of cement dust. The necessary action plan for option implemented is by revising the standard operating procedure for tower cells and regular cleaning of the tower (once every three months) using hypochlorite to remove algae and cement dust. This will eliminate any microbial hazard to all personnel at the plant and will improve the cooling efficiency at the tower, as well as to safeguard plant equipment that requires cooling water from excessive fouling on heat transfer. Repairs of the fill float valve will be required to minimize water loss due to basin overflowing. An investigative study of using in-ground-source heat pumps (IGSHP) in-lieu of cooling towers may be an option in the future (when the cooling tower is worn out and due for replacement or extensive refurbishment).

#### KEY WORDS

Indonesia, Cement, Cooling Towers, Power House, Cleaning, Algae, Fill Float valve

#### OBSERVATIONS

Below is the tested result for the maintenance program for the Cooling Tower and Boiler:

NO	SCOPE OF WORK	DAYS									
		1	2	3	4	5	6	7	8	9	10
1	Cooling Tower service										
2	Retubing Condensor										
3	Welding deaerator										
4	Cleaning oil cooling steam turbin										
5	Repair and painting cooling pipe steam turbine										
6	Repair leak of valve steam										
	- valve to system superheater if not the steam turbine is stop										
	- valve in the deaerator										
	- main valve superheater and flange steam boiler 3, 6,7,9										
7	Repairing and replace the pipe in the pipa cooling tower										
8	Service the water flow valve in cooling tower										
9	Blowdown steam modification in cooling tower										
10	blowdown system modification in flash tank										
11	Condensate modification pipe in engine 9										



## OPTIONS

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## RESULTS

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During the reparation, the cooling tower is not completed yet. Therefore, the regular cleaning of tower using hypochlorite and the repair or to replace fill float valve to minimize water loss has not been implemented. The implementation still awaits the cooling tower optimization.

## FOR MORE INFORMATION

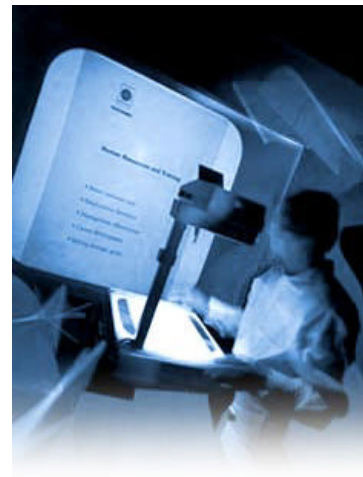
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