

During normal operation at approximately 68% of rated power a winter storm with high winds resulted in the collection of unusually heavy concentrations of algae on the plants travelling screens. The heavy concentration of algae in combination with mechanical problems with the travelling water screen subsystem resulted in overloading of the drive system for the screens to the point where the drive shear pins sheared. This in turn required a forced load reduction (to approximately 43% of rated power) so that operations personnel could reduce the number of operating circulating water pumps in an effort to reduce the magnitude of the algae intake and reduce the load on the screens.

When the number of operating circulating water system pumps was reduced from two (2) pumps to one (1) pump, condenser inlet to plant discharge ΔT increased to approximately 39° F which requires a report in accordance with Technical Specification, Appendix B, paragraphs 2.1.1 and 5.6.2.a.2.

The travelling water screen drive shear pins were replaced and the screens were placed in continuous operation. A second circulating water system pump was restarted as soon as conditions permitted. Restarting the second circulating water pump restored the ΔT to within limits approximately three (3) hours after the ΔT first exceeded the 32.4° F limit.

The cause of the event is attributed to the intake of unusually heavy concentrations of algae from Lake Ontario in combination with normal mechanical wear of certain parts of the travelling water screen system. Both of these factors contributed to increased running resistance of the screens. During the 9 days immediately following the event, maintenance personnel invested approximately 300 man-hours in maintenance and repair of the system to preclude recurrence. In addition, a special screen was fabricated for manual use (with the screenhouse overhead crane) to permit intercept of some of the algae at the trash racks which are located just upstream of the travelling water screens. This special screen should also reduce the probability of recurrence.

The JAF staff has evaluated the event with respect to the extent and magnitude of the environmental impact and has drawn the conclusion that operation of the facility with a condenser inlet to plant outlet ΔT of 39° F for a three hour period should not produce a detectable impact on the aquatic environment.