DISCHARGE MONITORING REPORT
PERMIT NUMBER NY0001015
NINE MILE POINT NUCLEAR STATION
DECEMBER 1990

COMMENTS

1. There were no discharges from the Unit 2 Waste Neutralizing Tank to the Sewage Treatment Facility during December 1990.

2. No preprinted DMR form was received for outfall 022 (Security Building Air Conditioning). There were no discharges from this outfall directly to Lake Ontario (receiving water body) during December 1990. Any discharge during December 1990 was directed to the site sewage treatment facility.

3. The strip chart recorders, which are used to measure outfall 010 (Condenser Cooling Water Unit 1) discharge temperature and delta temperature, were inoperable from December 27 at 1130 hours until December 28, at 2330 hours due to a malfunction of the discharge temperature transmitter. The recorders were returned to service as soon as possible. Data for this period was conservatively estimated from the recorder traces and hourly computer log using the hours immediately preceding and following the lapse. Additionally, the recorders were restored to operation for a 3-hour period during the lapse and that data agrees closely with the estimates. The station was at steady state power operation during this period where the heat load and flow were stable.

4. Betz Clam-Trol (CT-1), a molluscicide used for zebra mussel control, was added to the Unit 2 service and fire water systems on December 20, 1990. The addition followed the requirements of the NYSDEC as contained in the site's NPDES/SPDES Permit modification dated September 28, 1990. Two service water effluent samples collected during the Clam-Trol addition, one at 0.3 mg/l and another at 0.8 mg/l, were greater than the permit effluent limitation of 0.2 mg/l after detoxification. However, these samples are not considered to be representative of the actual plant discharge due to inadequate mixing of the detoxifying agent (bentonite clay) with the treated service water prior to the sampling point. Due to plant design, the only available sampling point for the Clam-Trol treated service water after detoxification was a point along the wall of the discharge bay in a direct line with the treated service water stream, immediately after the detoxifying agent addition point. Samples at this point are not representative of the mixing and subsequent detoxification which takes place in the bay prior to entering the plant discharge pipe located at the bottom of the bay. There are no points at which a sample can be taken from the discharge piping as it is completely encased in concrete and below ground. The Reynolds number calculated for the discharge bay during the treatment

was approximately 20,000 and is considered very conservative as it does not take into account the additional turbulence generated from the service water stream entering the bay at approximately 20 feet above the bay water level. Reynolds numbers greater than 3000 are considered to represent turbulent flow conditions. Additionally, the detoxification rate during the treatment was maintained at greater than 2 times the required 1 to 1 ratio of bentonite clay to Clam-Trol as stated by Betz to obtain adequate detoxification prior to discharge. Based on the turbulence in the discharge bay and the excess amount of detoxifying agent added, the two above mentioned samples are not considered to be representative of actual plant discharges but instead indicate a sampling problem. We are currently investigating ways to improve sampling effectiveness prior to future Clam-Trol treatments.

All sample results were less than 0.2 mg/l except for the two samples noted above which are not considered to be representative. On both occasions, additional samples were collected and the results were less than 0.2 mg/l.

5. During the month of December 1990, the Circulating Water System (Cooling Tower System) was not operational for a period of time (12/01-22/90) while Unit 2 was shutdown. During this period where the Circulating Water System was shutdown, twice per week pH grab samples and free available chlorine recording were not obtained from outfall 040 because the system was not being discharged.

6. The following summary comment concerns the discharge of water from the Unit 2 Circulating Water System (outfall 040). The discharge was initiated on November 2, 1989 under an Emergency Authorization issued by the NYSDEC for the discharge of copper contaminated water. Details for the discharge during November and December 1989 are provided in the comment sections of November and December 1989 Discharge Monitoring Reports.

   During the months of January through December 1990, the discharge of water continued under the terms and conditions of an amended Emergency Authorization dated December 22, 1989. The Amendment basically allows for the discharge of the Unit 2 Circulating Water System through the normal station blowdown routes and/or through the Unit 1 facility Circulating Water System. The Amendment also limits the concentration of total copper in the mixing area in Lake Ontario to 17 ppb, and requires a monitoring frequency of twice per week.

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Any copper discharged from the Circulating Water System during December 1990, is believed to have originated from copper precipitated onto the carbon steel structures within the Circulating Water System. The source of the precipitated copper originated from the acid leak into the Circulating Water System in October 1989.

Copper concentrations in the Circulating Water System during December 1990 ranged from 73 to 759 ppb (368 ppb average) total copper. The maximum total copper level occurred shortly after the start of some circulating water pumps that were previously idle for approximately 3 months. The Unit 2 facility was shutdown for maintenance during December 1990.

The total copper concentration in Lake Ontario during December 1990 was maintained below 17 ppb as a result of the discharge of water from the Unit 2 Circulating Water System. Copper concentrations ranged from 0.2 to 8.2 ppb total copper. The discharge of the Unit 2 Circulating Water System was through the normal system blowdown during December 1990.

(DISCHMON.HJF)