Regulatory File Cy.

NIAGARA MOHAWK POWER CORPORATION

NIAGARA MOHAWK

300 ERIE BOULEVARD WEST
SYRACUSE, N.Y. 13202

September 3, 1971

50-220

Dr. Peter A. Morris, Director
Division of Reactor Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Dr. Morris:

On June 19, 1971, with the Nine Mile Point Nuclear Station producing 456 $MW_{(e)}$, the conductivity of the water in the reactor vessel increased to 10 mmho. As this is a limiting condition for operation, an orderly shutdown was begun in fifty six minutes of the occurrence. Specifications call for an orderly shutdown started within an hour and the reactor to be in cold shutdown in ten hours.

During the load reduction, it was found that one of the condensate storage tank's conductivity was approximately 250 mmho, the other 25. One hour and thirty four minutes after the beginning of load reduction, the control rod drive pump supply water was transferred from the condensate storage tank to the dimineralized water storage tank and a second clean-up pump was started to increase purification of the reactor water. Reactor water conductivity immediately started to decrease. Two hours and twenty four minutes later, reactor water conductivity was at 9.5 mmhos and load was held at 252 $MW_{(e)}$ while cleaning up water. Four hours and forty six minutes later, reactor water conductivity had reduced to 1 mmho.

Chloride analysis of reactor water taken during times of maximum conductivity indicated 0.23 ppm, indicating that chloride levels were at all times well within the Technical Specification limit of 1 ppm.

Three hours and twenty minutes later, the control rod drive pump suction was returned to the condensate storage tank which had decreased in conductivity from 25 mmhos to 5 by spilling to the main condenser and recycling through an idle dimineralizer.

Contamination of the condensate storage tanks occurred by a malfunction of equipment in the radiation waste facility. Water from the waste collector tanks passes through a filter and dimineralizer. Conductivity is determined by a cell at the dimineralizer discharge. Water of standard quality or above is pumped to the condensate storage tank through one of two flip-flop control valves. The other valve opens when below standard water is produced, recirculating the effluent back to the dimineralizer for additional purification. The first valve of the pair is left closed during this process.

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On this occasion, the conductivity recorder stuck and did not permit the contact driven by the recorder mechanism to actuate. Therefore, below standard water was sent to the condensate storage tanks, which in turn was pumped to the reactor by the control rod drive pumps.

A completely separate back-up system is presently being installed to prevent a recurrence. Another conductivity cell and switch (not dependent on a recorder movement) are being connected in parallel with the present system. Either system (or both) will cause the proper valve action on high conductivity. Both systems will have the same switch point and failure of one system will not effect proper operation of the other.

Very truly yours,

F. J. Schneider

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Vice President - Operations

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