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Martin J. McCormick Jr. PE
Plant Manager-Unit 2
Nuclear Generation

June 23 , 1992
NMP87221

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: Docket No. 50-410
SPECIAL REPORT

Gentlemen:

In accordance with Nine Mile Point Unit 2 (NMP2) Technical Specification (T.S.) Table 3.3.7.10-1, "Radioactive Gaseous Effluent Monitoring Instrumentation," ACTION Statement 139-b, Niagara Mohawk Power Corporation is submitting the following Special Report concerning the inoperability of the Gaseous Effluent Monitoring System (GEMS).

EVENT DESCRIPTION

On June 6, 1992 at 0845 hours, with the reactor mode switch in the "REFUEL" position and the reactor in the cold shutdown condition (Operational Condition 4), the Reactor Building Ventilation (HVR) GEMS was declared inoperable. The Chemistry Department implemented four hour system/sample flow estimates, continuous iodine and particulate sampling, and 12 hour noble gas grab samples using auxiliary equipment as required by T.S. Table 3.3.7.10-1, ACTION Statements 136, 138, and 139-a.

While performing routine shift surveillances, operators noticed that HVR GEMS flow was reading abnormally low. The flow controller indicated a flow rate of approximately 58,000 cubic feet per minute (cfm) while flow estimates indicated a flow rate of approximately 230,000 cfm. These initial indications were indicative of a fault in the HVR effluent process flow transmitter (2RMS-FT180). A Work Request (WR #198528) was issued to locate and correct the cause of the lower than normal HVR effluent flow rate signal.

On June 9, 1992 at 0845 hours, the HVR GEMS had not yet been declared operable. Failure to return this system to operable within 72 hours requires submission of this Special Report to the U.S. Nuclear Regulatory Commission within 14 days as required by T.S. ACTION Statement 139-b.

CAUSE OF EVENT

When Instrument and Control (I&C) Maintenance personnel commenced work on the flow transmitter, they found several loose connections and a loose terminal board. The loose

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connections and terminal board were tightened, and the flow rate signal returned to normal. Because this is a recurring problem, I&C Maintenance personnel left the WR open for several days to observe the operation of 2RMS*FT180. During this time period, several more low flow alarms occurred. The troubleshooting continued to determine the root cause for the failures and it was finally narrowed to one of six flow transmitter cards, which had a drifting output with a constant input. This card was replaced and no further low flow alarms have occurred. The suspected cause for the transmitter card failure is thermal aging which causes the output to drift.

ACTIONS TAKEN

A Work Request (WR #198528) was issued to troubleshoot and repair 2RMS-FT180. One of six transmitter cards was intermittently failing which resulted in a flow signal less than the default value. The suspected faulty transmitter card has been replaced and the flow circuitry is working properly.

When restoring the HVR GEMs to operation, the maintenance personnel discovered a fault in the radiation detection circuitry. A faulty pre-amplifier card was identified in the detector output circuit. When the cause for the faulty pre-amplifier could not be determined, the system vendor was called to aid in the troubleshooting effort. The cause for the faulty pre-amplifier was a shorted signal cable between the amplifier and pre-amplifier. Further, when the cable shorted, it may have damaged the crystal within the radiation detector. This can be determined when the cable and pre-amplifier are replaced. NMP2 is expecting receipt of a replacement cable and pre-amplifier on June 23, 1992. Following receipt of the cable and pre-amplifier the potential damage to the radiation detector crystal will be evaluated. If the detector has not been damaged, the system will be returned to service by June 24, 1992. If the detector does require replacement and calibration, it is expected that the HVR GEMs will be returned to service approximately five days after replacement of the cable and preamplifier.

A Deviation/Event Report (DER) will be written to evaluate the recent failures of this system and specify any actions that will be taken to improve system reliability.

Very truly yours,

Martin J. McCormick Jr.
Plant Manager - NMP2

MJM/RLM/lmc

xc: Thomas T. Martin, Regional Administrator Region I
Wayne L. Schmidt, Senior Resident Inspector