



DUKE POWER

January 16, 1991

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Subject: McGuire Nuclear Station Unit 1 and 2
Docket No. 50-369
Licensee Event Report 369/90-30

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 369/90-30 concerning an unmonitored release being made from the Contaminated Parts Warehouse Ventilation System. This report is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B). This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

T.L. McConnell

T.L. McConnell

DVE/ADJ/cbl

Attachment

xc: Mr. S.D. Ebner
Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta St., NW, Suite 2900
Atlanta, GA 30323

INPO Records Center
Suite 1500
1100 Circle 75 Parkway
Atlanta, GA 30339

M&M Nuclear Consultants
1221 Avenue of the Americas
New York, NY 10020

Mr. Tim Reed
U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Mr. P.K. Van Doorn
NRC Resident Inspector
McGuire Nuclear Station

TR22
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) **McGuire Nuclear Station, Unit 1** DOCKET NUMBER (2) **0 5 0 0 0 3 6 9 1** OF **1 7**

TITLE (4) **A Technical Specification Surveillance Could Not Be Performed Due To Inadequate Group Interface**

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)									
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER (S)								
1	1	10	90	09	00	03	01	12	10	90	0	5	0	0	0	3	7	0
										0 5 0 0 0								

OPERATING MODE (9) **5**

POWER LEVEL (10) **0 0 0**

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 50.36(a)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 50.36(a)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 306A)
<input type="checkbox"/> 20.406(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)	
<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(vii)(B)	
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME **Alan Sipe, Chairman, McGuire Safety Review Group** TELEPHONE NUMBER **7 0 4 8 7 5 - 4 1 8 3**

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14) YES NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single spaced typewritten lines) (16)

On November 9, 1990, the alternate power supply (shared load center 2SLXC, breaker 5D) to shared motor control center SMXR, was deenergized for implementation of modifications by Construction and Maintenance Department - North (CMD-N) personnel. On November 10, 1990, at 0913, while the modifications were in progress, the normal power supply to SMXR (2SLXI, breaker 4D), tripped. This resulted in a power failure to EMF-53, Radiation Monitor For The Waste Handling Area (WHA) Ventilation System. However, the WHA Ventilation system continued to operate, resulting in a potential unmonitored release to the environment. Operations (OPS) personnel shut down the ventilation system at 1130. Power was restored to EMF-53 at 1257. Units 1 and 2 were in Mode 5 (Cold Shutdown) at the time of this event. This event has been assigned a cause of Inadequate Group Interface, which resulted in operation of new equipment prior to the acceptance of operational control by the station. A contributory cause of Possible Inappropriate Action has also been assigned. Subsequent sampling and analysis by Radiation Protection (RP) personnel indicated there was no measurable radiological release.

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TEXT (if more space is required, use additional NRC Form 306A's) (17)

EVALUATION:

Background

Radiation monitoring equipment [EIIS:IL] (EMFs) monitor ventilation systems which remove air from locations where systems containing radioactivity are located. The EMFs provide information and alarms [EIIS:RA] regarding airborne releases from the station. The quantity of the airborne radioactive material released is determined by laboratory analyses. The Containment Purge system [EIIS:VA], Containment Annulus Ventilation system [EIIS:VD], Condenser Air Ejector system [EIIS:WF], Auxiliary Building Ventilation system [EIIS:VF], Fuel Pool Ventilation system [EIIS:VG], and other potentially radioactive systems discharge through the unit vents [EIIS:VL]. The WHA Ventilation system has a separate discharge point. It is continuously monitored for radioactive gases by EMF-53. EMF-53 incorporates a sample pump [EIIS:P] that draws a single gas stream in series through a particulate paper filter [EIIS:FLT], an iodine filter consisting of a charcoal cartridge, and a gas channel [EIIS:CHA] chamber. A minimum flow device [EIIS:FA] is incorporated into the stream that alarms in the Control Room [EIIS:NA] when sample air flow falls below predetermined values. An indicator light [EIIS:IL] for loss of power is also provided at the EMF. A loss of sample flow annunciator [EIIS:ANN] is supplied in the Control Room. A loss of sample flow or a loss of power to the EMF will not result in an automatic shutdown of the WHA Ventilation system. Daily channel checks are performed by OPS personnel on the alarms and indications located in the Control Room. Daily checks are also performed by Radiation Protection (RP) personnel to verify operability of the minimum flow device. Daily and weekly samples are obtained by RP personnel which are analyzed for particulate, iodine, tritium, and gaseous activity. A Trip 2 alarm signal on EMF-53 automatically shuts down the ventilation supply and exhaust fans [EIIS:FAN] for the WHA. When the alarm is reset in the Control Room and the alarm condition clears on the EMF, the ventilation supply and exhaust fans restart.

Technical Specification (TS) 3.3.3.9 requires the radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-13 be operable with their alarm/trip setpoints set to ensure that the limits of TS 3.11.2.1 are not exceeded. It further requires that with less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels operable, take the action shown in Table 3.3-13. Table 3.3-13 Action Statements 36 and 37, which are the required actions for EMF-53, state that with the minimum flowrate device inoperable and the noble gas activity monitor [EIIS:MON] inoperable, releases through this pathway may continue for up to 30 days provided the flow sample rate is verified at least once per 4 hours and grab samples are taken at least once per 12 hours. These grab samples must be analyzed for gross radioactivity within 24 hours. Also, according to TS 3.11.2.1, Table 4.11-2 Number 5 requires that a continuous Particulate and Charcoal (P&C) sample be maintained on EMF-53. This sample is obtained and analyzed every 24 hours. All the above requirements are necessary when the WHA Ventilation system is operating. If the WHA

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TEXT (if more space is required, use additional NRC Form 306a's) (17)

Ventilation system is shut down for longer than 30 days, RP personnel are required to report the reason in their Semi-Annual Effluent Release Report.

EMF-53 is powered from a shared motor control center, SMXR. This motor control center has a normal and an alternate power supply. The normal power supply is Unit 2 shared load center 2SLXI, and the alternate power supply was Unit 2 shared load center 2SLXC. Load centers 2SLXI and 2SLXC are powered from the same Unit 2 6900 volt bus, 2TC. MPVN 1380 was originated to change the alternate power supply for SMXR to Unit 1 shared load center 1SLXC.

Description Of Event

On the morning of November 9, 1990, the alternate power supply to SMXR, breaker 5D of Unit 2 shared load center 2SLXC, was deenergized in preparation for a wiring modification per McGuire Production Variation Notice (MPVN) 1380. This modification reassigned the alternate power supply to 1SLXI, since the design of Nuclear Station Modification (NSM) MG-1-1202 provided both the normal supply (2SLXC breaker 4D) and the alternate supply (2SLXC, breaker 5D) from the same Unit 2 6900 volt bus, 2TC.

The work specified on MPVN 1380 required moving the alternate power supply for SMXR from 2SLXC to 1SLXC. Once the breaker was deenergized, CMD-N personnel disconnected the alternate power supply cables from 2SLXC and repulled the cables to 1SLXC, breaker 5A. CMD-N personnel then proceeded to terminate the new wiring to this breaker. On November 10, 1990, at 0913, OPS Control Room personnel received a "Loss of Sample Flow" (panel 1FAD1, E5) alarm on radiation monitor EMF-53. At 0904, just prior to the receipt of this alarm, OPS personnel had deenergized SMXC. Their initial diagnosis of the reason for receipt of EMF-53 loss of sample flow alarm was that the act of deenergizing SMXC had interrupted the power to EMF-53. According to procedure OP/1/A/6100/10Z, Annunciator Response For Panel 1RAD1, one of the possible causes for the alarm is loss of power. This alarm has no associated automatic functions. In accordance with Supplementary Action 1 of procedure OP/1/A/6100/10Z, OPS personnel notified RP personnel at 0920.

Under normal circumstances, RP personnel would either restart the EMF, or revert to their alternate sampling method. However, during this event, they were unable to complete either action. The power loss which resulted in the loss of flow to EMF-53 had also failed the power to the lighting circuits and electrical outlets in the room which contained EMF-53. Therefore, the alternate sample could not be taken. RP personnel and OPS personnel involved reached the conclusion that if power was restored to EMF-53, alternate sampling would not be necessary.

At 0942, OPS personnel reenergized SMXC, but the loss of sample flow alarm for EMF-53 did not clear. OPS and RP personnel determined that the WHA Ventilation system should be shutdown to prevent the potential release of radioactive effluents via the WHA release point, thereby, eliminating the need for alternate sampling. At 1022, the WHA air handling unit (AHU) [EIIS:AHU] was shutdown. At 1030, RP personnel discovered that one of the

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TEXT (If 7-line space is required, use additional NRC Form 366A's) (17)

two additional Waste Handling Area AHUs also monitored by EMF-53 were still operating. Although one of the AHUs, OMOVAXF0111 was operable and in service, operational control for this part of NSM MG-1-1202 had not been accepted by the station. Therefore, at the time the event occurred, no station group had accepted operational control for the additional AHUs. RP and OPS personnel located this AHU and at 1130, all operating ventilation systems monitored by EMF-53 were shutdown.

OPS personnel determined that the loss of flow to EMF-53 was caused by a loss of power to SMXR. Further investigation revealed that the normal supply breaker (2 SLXI, Compartment 4D) to SMXR had tripped while CMD personnel were working on the wiring modification for the alternate power supply to SMXR.

At 1257, OPS personnel reenergized 2SLXI, breaker 4D, and the loss of flow alarm for EMF-53 cleared.

RP personnel subsequently pulled P&C samples in the Contaminated Parts Warehouse, Laundry, Surveillance and Control (S&C) laboratory (lab), Hot Lab, and the Hot Machine Shop. RP personnel also performed the gas grab sample required when EMF-53 is inoperable and replaced the continuous P&C cartridge in the EMF. Results of the analysis of these samples revealed that there had been no measurable release via the WHA Ventilation system during the time when EMF-53 was inoperable.

Conclusion

A cause of Inadequate Group Interface is assigned to this event. Implementation of NSM MG-1-1202 resulted in the replacement of the original EMF-53 package with a new one. At the same time, two additional AHUs were added which also discharge via the WHA release point. The responsibility/control of the new AHUs, OMOVAXF0111 and OMOVXF0112 had never been accepted by either OPS Management personnel or Mechanical Maintenance Management personnel. Even though the portion of NSM MG-1-1202 had not been accepted for operation by the station, one of the new AHUs was placed in service. There was some confusion between the groups involved regarding the responsibility for non safety-related ventilation systems. Operation of these AHUs prior to a formal operational acceptance resulted in several problems related to this event. Those problems included: OPS personnel were not aware of the location of the two new AHUs, OPS procedure OP/O/A/6450/003, Auxiliary Building Ventilation System, did not provide guidance on the operation of the new AHUs, and no station group had operational control of this new equipment. This contributed to the continued operation of OMOVAXF0111 for an additional one hour and eight minutes after the original WHA AHU was shut down.

This event is also assigned a cause of Possible Inappropriate Action by CMD-N personnel performing the modification. The possibility existed for an error to have caused the tripping of 2SLXI, breaker 4D (i.e. inadvertent contact resulting in a short). However, the results of this investigation and CMD-N Management personnel review of the event found no definite error. CMD-N

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Management personnel stated that the possibility for an inappropriate action to have occurred did exist. Implementation of the wiring modification described on MPVN 1380 required deenergizing 2SLXC, the alternate power supply to SMXR. This configuration resulted in SMXR being supplied from its normal source 2SLXI, compartment 4D, with no alternate source available. While the wiring modifications of MPVN 1380 were in progress, the normal supply breaker to SMXR, 2SLXI, breaker 4D tripped. The tripping of 2SLXI, breaker 4D, with the alternate supply to SMXR (2SLXC, breaker 5D) removed from service to allow implementation of MPVN 1380, resulted in the loss of both the normal and alternate power supplies to SMXR.

Since the electrical panel which powers EMF-53 receives its power supply from SMXR, this power loss of SMXR resulted in the loss of power to EMF-53. This loss of power stopped the sample pump on EMF-53 and thereby generated the EMF-53 Loss of Sample flow alarm which was received in the Control Room.

Since the electrical power panel which supplies power to EMF-53 also powers lighting circuits and receptacles in the equipment room, RP personnel were unable to implement their alternate sampling method. This resulted in a TS surveillance which could not be performed since the continuous P&C sample required by TS 3.11.2.1, Table 4.31-2, number 5, could not be obtained. Without this continuous P&C sample, a potential unmonitored release occurred. Subsequent investigation and sampling conducted by RP personnel indicated that no unquantified radioactive material was released.

OPS personnel have revised the Auxiliary Building Ventilation System procedure to include instructions for the startup, operation, and shutdown of the two AHUs. Projects Management personnel will issue a letter to the effected groups/personnel stressing the need for good communications during the partial turnover of modifications. A meeting was held between OPS Management personnel and Maintenance Management personnel in November, 1990, regarding the operational responsibility of nonsafety-related ventilation systems. As a result of this meeting, Maintenance personnel will assume responsibility for the two new WHA air handling units.

CMD-N Management personnel thoroughly reviewed the wiring modifications described by MPVN 1380, and their implementation of those modifications. The modification was also reviewed with the CMD-N personnel that performed the work. No apparent causes for the tripping of 2SLXI, breaker 4D could be identified as a result of their review.

A review of the Operating Experience Program (OEP) Data Base for the previous twenty-four months revealed no other examples in which an Inadequate Group Interface resulted in being unable to perform a TS surveillance. This problem is not considered to be recurring.

This event is not Nuclear Plant Reliability Data System (NPRDS) reportable.

There were no personnel injuries, radiation overexposures, or measurable releases of radioactive material as a result of this event.

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TEXT (If more space is required, use additional NRC Form 388A's (17))

CORRECTIVE ACTIONS:

- Immediate: OPS personnel shutdown the WHA Ventilation system.
- Subsequent:
- 1) OPS personnel reset breaker 2SLXI, 4D and power was restored to EMF-53.
 - 2) RP personnel pulled and analyzed P&C samples from plant areas monitored by EMF-53.
 - 3) OPS personnel revised procedure OP/O/A/6450/003, Auxiliary Building Ventilation System, to include instructions for the startup, operation, and shutdown of the two additional AHUs installed per NSM MG-1-1202.
 - 4) CMD-N Management personnel reviewed this event with the CMD-N personnel that performed the work on MPVN 1380 for potential reasons for tripping 2SLXI, breaker 4D.
 - 5) CMD-N Management personnel reviewed the wiring modification described by MPVN 1380 for potential reasons for tripping 2SLXI, breaker 4D.
 - 6) A meeting was held between OPS Management personnel and Maintenance Management personnel to determine who would have operational responsibility for non-safety related ventilation systems.
 - 7) Projects personnel will issue a letter to the effected groups/personnel emphasizing the need for good communications during the partial turnover of plant modifications.
- Planned:
- 1) Mechanical Maintenance personnel will assume responsibility for the new AHUs.
 - 2) Projects will review the NSM program to ensure that OPS Management personnel are appropriately notified of partial completions and interim operability conditions.

SAFETY ANALYSIS:

The failure to maintain continuous flow through the alternate P&C Sampler for EMF-53 when it was inoperable could have allowed unquantified radioactive materials to be released via the WHA release point. However, during the 2 hour and 17 minute period when the potential release occurred, there were no contamination spills, decontamination activity, or other sources of contamination which could have generated particulate or gaseous radioactive materials to be released. Laundry operations were secured after the WHA ventilation system was shut down.

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TEXT (if more space is required, use additional NRC Form 386A's) (17)

Items stored in the Contaminated Parts Warehouse have to meet certain radiological requirements before being stored there. The standard requirement is that if the items have loose contamination greater than 1000 dpm/100cm², the items are wrapped in plastic. However, all tools with loose contamination stored in the warehouse are decontaminated to less than 1000 dpm/100 cm² before being placed in the warehouse.

The cartridge from the continuous 24 hour P&C sample for EMF-53, along with P&C samples taken from the Contaminated Parts Warehouse, Laundry, S&C Lab, Hot Lab, and the Hot Machine Shop were analyzed. The analysis of these samples revealed no activity.

Based upon the sample results, it can therefore be assumed that no unquantified radioactive material was released via the WHA release point during the period when continuous monitoring was not maintained.

This incident did not affect the health and safety of the public.