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DUKE POWER

June 16, 1994

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

Subject: McGuire Nuclear Station Unit 2
Docket No. 50-370
Licensee Event Report 370/94-02
Problem Investigation Process No.: 2-M94-0619

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a) (1) and (d), attached is Licensee Event Report 370/94-02 concerning a failure to comply with a Technical Specification required surveillance because of Improper Work Practices. This report is being submitted in accordance with 10 CFR 50.73 (a) (2) (i). This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,


T.C. McMeekin

RJD/bcb

Attachment

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U.S. Nuclear Regulatory Commission
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LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7744), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME(1) McGuire Nuclear Station, Unit 2	DOCKET NUMBER(2) 05000 370	PAGE(3) 1 OF 5
TITLE(4) Failure To Comply With A Technical Specification Required Surveillance Because Of Improper Work Practices.		

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 NAMES	DOCKET NUMBER(S)
05	19	94	94	02	0	06	19	94	N/A	05000
										05000

OPERATING MODE(9)	1	THIS REPORT IS SUBMITTED PURSUANT TO REQUIREMENTS OF 10CFR (Check one or more of the following)(11)								
POWER LEVEL(10)	100%	20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)		
		20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)		
		20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vi)				
		20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		OTHER (Specify in Abstract Below and in Text NRC Form 366A)		
		20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)				
20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(ix)						

LICENSEE CONTACT FOR THIS LER(12)		TELEPHONE NUMBER	
NAME Rick Deese, Manager, McGuire Safety Review Group		AREA CODE 704	787-4065

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT(13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		

SUPPLEMENTAL REPORT EXPECTED(14)				EXPECTED SUBMISSION DATE(15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO					

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

On May 18, 1994, Chemistry Scientist A reviewed the Chemistry data trend graphs for the previous week and discovered that the result of the Unit 2 Reactor Coolant (NC) system Fluoride and Chloride analysis performed on May 13, 1994 was nonrepresentative of the typical water sample. The review of the chromatogram generated by the Dionex 4500i (analyzer) on May 13, 1994, indicated that some instrument malfunction had occurred for that particular analysis; therefore, an inadequate surveillance was performed. Unit 2 was in Mode 1 (Power Operation) at 100 percent power at the time the event occurred. This event is assigned a cause of Improper Work Practices because, due to an oversight, the Chemistry specialist performing the analysis did not adequately check the chromatogram to determine if the sample results were representative of a typical water sample. Corrective actions to prevent recurrence include procedure changes and controls to check the validity of all data generated by the analyzer.

LICENSEE EVENT REPORT
(LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		94	02	0	2	OF	5

EVALUATION:**Background**

Technical Specification (TS) 3/4.4.7, Reactor Coolant (NC) System [EII:AB] Chemistry, states, in part, that the NC system chemistry shall be maintained within the Chloride and Fluoride steady-state limit of ≤ 0.15 ppm (150 ppb) and transient limit of ≤ 1.50 ppm (1500 ppb). The NC system Chloride and Fluoride concentration shall be determined to be within the stated limits at a frequency not to exceed once per 72 hours. This TS is applicable in all modes and the Surveillance Requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.

The NC system chemistry is determined to be within the stated limits by use of the Dionex 4500i Ion Chromatography system. The Dionex 4500i (analyzer) is a very complex, state-of-the-art instrument and by virtue of its complexity Chemistry technicians need to ensure that all data generated by the analyzer appears valid.

Description of Event

On May 13, 1994, at 1000, Unit 2 was operating in Mode 1 (Power Operation) at 100 percent power with no major problems. Nuclear Chemistry Specialist (Nuc Chem Spc) A collected the Unit 2 NC system sample (Sample # 43406) to meet TS 4.4.7 surveillance requirements. The sample was obtained in accordance with Chemistry Operating Procedure OP/2/B/6200/11, Primary Nuclear Sampling System, Unit 2.

On May 13, 1994, at 1033, Nuc Chem Spc B used the Dionex 4500i Ion Chromatograph system to perform the analysis of the Unit 2 NC system sample for Fluoride and Chloride concentrations. He also performed an analysis of the Unit 1 NC system sample and two Quality Control (QC) Anion Standards for Fluoride and Chloride concentrations during this time period. The analyses were performed in accordance with Chemistry Procedure CP/0/B/8120/75, Anion Analysis Using Dionex 4500i, which describes the operation of the Dionex 4500i Ion Chromatograph system for the analysis of concentrations of anions in primary samples for trace (ppb) level contaminants. Nuc Chem Spc B entered the results of the Unit 2 NC system sample analysis on the Primary Systems Daily Data Sheet; however, he did not adequately check the chromatogram generated by the analyzer for errors as is expected.

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McGuire Nuclear Station, Unit 2	05000 370	94	02	0	3	OF	5

On the afternoon of May 18, 1994, Chemistry Scientist A reviewed the Chemistry data trend graphs for the previous week. He noted that a noticeable dip existed in the Halide (Fluoride and Chloride) data for the Unit 2 NC system sample that was analyzed on May 13, 1994. A review of the chromatogram indicated there had been some instrument malfunction for that particular analysis. This was based on the fact that (1) no pure water dip was present as would normally be expected and (2) no Chloride and Fluoride peaks were present as would normally be expected. This made the results generated by the analysis of the Unit 2 NC system sample invalid; therefore, an inadequate surveillance had been performed on May 13, 1994. The event was documented on Problem Investigation Process (PIP) 2-M94-0619.

Conclusion

This event is assigned a cause of Improper Work Practices because self-checking was not applied to ensure the expected response. When Nuc Chem Spc B performed the analysis of the Unit 2 NC system sample on May 13, 1994, he did not adequately check the chromatogram to determine if the sample results were representative of a typical water sample. An adequate review of the chromatogram would have indicated an invalid sample result had been obtained. Nuc Chem Spc B is qualified to perform Employee Training and Qualification System (ETQS) Task CH-1532, Analysis of Anions Using the 4500i Dionex, and has performed the task frequently. Since the surveillance performed on May 13, 1994 had been inadequate, the NC system sample (Sample # 43432) collected and analyzed for Fluoride and Chloride concentrations at 0750 on May 16, 1994, had exceeded the maximum allowable time interval between surveillances. The last valid Unit 2 NC system Fluoride and Chloride analysis (Sample # 43361) was performed at 0630 on May 11, 1994.

A review of the Problem Investigation Process data bases for the past 24 months revealed that three TS violations due to a missed surveillance have occurred at McGuire Nuclear Station. These events did not involve the same equipment, the same administrative controls, the same personnel actions, or the same work groups. These events are documented in report numbers 369/93-07, 369/93-11, and 370/94-01. Corrective actions for these events would not have prevented this event from occurring.

This event is not considered to be recurring.

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

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(LER) TEXT CONTINUATION**

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

CORRECTIVE ACTIONS:

- Immediate:**
- 1) Chemistry personnel reviewed Chemistry Data Plot (Chemplot) data for validity.
 - 2) Chemistry personnel checked Dionex 4500i analyzer performance and QC data.
 - 3) Chemistry personnel reported findings on PIP 2-M94-0619.

Subsequent: None

- Planned:**
- 1) Chemistry personnel will revise Procedure CP/0/B/8120/75 to require that Chemistry technicians review items on chromatograms for validity of sample results.
 - 2) Chemistry personnel will review other Chemistry tasks which generate chromatograms for needed changes.
 - 3) Appropriate Chemistry personnel will qualify to procedure/task changes made as a result of this event.
 - 4) Chemistry personnel will compare analyzer test data to historical data trends on a timely basis.

SAFETY ANALYSIS:

The limitations on NC system chemistry ensure that corrosion of the NC system is minimized and reduce the potential for NC system leakage or failure due to stress corrosion. Maintaining the chemistry within the steady state limits provides adequate corrosion protection to ensure the structural integrity of the NC system over the life of the plant.

Chemistry personnel reviewed Chloride and Fluoride data before and after the day in question to ensure data was representative of typical NC system samples. The review of

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data by Chemistry personnel indicated there were no operability concerns related to this event.

The concentration of Chlorides was 1.3 ppb and Fluorides was 1.7 ppb, respectively, as documented on May 16, 1994. The Chemical and Volume Control (NV) system [EIIS:CB] demineralizer [EIIS:FDM] removal rate for Chlorides is approximately 50 percent over a twenty hour period. The Fluoride removal rate is less due to a low affinity to the resin. At a 50 percent removal rate the Chloride concentration could not have been any greater than approximately 20 ppb on May 13, 1994 to result in an as found level of 1.3 ppb on May 16, 1994. Because the Fluoride removal rate is even less than the Chloride removal rate, the Fluoride concentration could not have been greater than approximately 25 ppb to result in an as found level of 1.7 ppb on May 16, 1994.

The Chloride and Fluoride concentration levels on May 11, 1994 were 3.1 ppb and 1.7 ppb respectively. The sample results before and after the day in question indicate the NC system chemistry was within the limits set by TS 3/4.4.7. This information supports the probability that through the span of time when the surveillance was not adequately performed the unit was not put in a condition where chemistry due to Chloride and Fluoride concentrations would effect the integrity of the NC system. Therefore, the health and safety of the public were not affected as a result of this event.