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April 21, 2000

Docket No.: 50-364

NEL-00-0113

U. S. Nuclear Regulatory Commission ATTN: Document Control Desk Washington, DC 20555-0001

> Joseph M. Farley Nuclear Plant Unit 2 Licensee Event Report 2000-002-00 <u>TS 3.0.3 Entered due to RCS Leak Detection System Inoperable</u>

Ladies and Gentlemen:

Joseph M. Farley Nuclear Plant Unit 2 Licensee Event Report (LER) No. 2000-002-00 is being submitted in accordance with 50.73(a)(2)(i). There are two NRC commitments in the LER. They are as follows:

- 1. The bill of material will be revised to specify the design requirement of the containment cooler condensate level monitors (CCLM) drain valves per a unique identification number that will include the unique flow requirements of these valves.
- 2. The plant component database will be revised to include complete information on containment cooler drain valves.

These actions will be completed by June 30, 2000.

If you have any questions, please advise.

Respectfully submitted,

Dave Morey

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Page 2 U. S. Nuclear Regulatory Commission

cc: <u>Southern Nuclear Operating Company</u> Mr. L. M. Stinson, General Manager - Farley

> U. S. Nuclear Regulatory Commission, Washington, D. C. Mr. L. M. Padovan, Licensing Project Manager – Farley

<u>U. S. Nuclear Regulatory Commission, Region II</u> Mr. L. A. Reyes, Regional Administrator Mr. T. P. Johnson, Senior Resident Inspector – Farley

NRC FORM 366 U.S.NUCLEAR REGULATORY COMMISSION (6-1998) LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block) Image: Comparison of the second block						APPROVED OMB NO. 3150-0104 EXPIRES: 06/30/2001 Estimated burden per response to comply with this mandatory information request 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-8 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555- 0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to the information collection.																			
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On March 25, 2000, with Unit 2 operating at 100% power, it was determined that at isolated times beginning on May 11, 1998 until March 25, 2000, Farley Nuclear Plant Unit 2 was operated in a condition prohibited by Technical Specifications (TS). TS 3.4.15 specifies that the containment particulate radiation monitor, R-11, and either the containment gaseous radiation monitor, R-12, or one of the containment cooler condensate level monitors (CCLM) be operable. All four CCLMs were determined to have previously been inoperable. Three of the CCLMs were inoperable due to improperly positioned drain valves and the fourth CCLM was periodically inoperable due to spurious alarms and maintenance. There was one occurrence in April 1999 and seven occurrences in the first quarter of 2000 (and possibly others which were not identified) where all CCLMs and both R-11 and R-12 were inoperable and resulted in Unit 2 operating in a condition prohibited by TS requiring entry into TS 3.0.3.

The cause of this event is that plant design documents did not specify the unique flow restriction requirements of the CCLM drain valves. The CCLM drain valves are grouped in the bill of material with other common 3/8" drain valves allowing the selection of other replacement drain valves for use that did not have identical flow characteristics. This resulted in maintenance and planning controls allowing a valve of different flow characteristics to be installed without assuring operations procedures for throttling the valves were revised. Two of the mispositioned drain valves were properly repositioned on March 25, and the third was properly repositioned on March 26, 2000. Operating procedures have been revised to have operators determine the valve model and position the valves as directed by a table in the procedure. The bill of material will be revised to specify the design requirement of the CCLM drain valves per a unique identification number that will include the unique flow requirements of these valves. The plant component database will be revised to include complete information on containment cooler drain valves. These actions will be completed by June 30, 2000.

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Description of Event									
During a work order review, performed or was determined that three of the four cont were inoperable. At this time Unit 2 was containment entries were performed in wh repositioned on March 25, and the third w	n March 25, 2000 and ainment cooler conde operating at 100% po- nich two of the mispos vas properly reposition	as a result of subsequent investigation insate level monitoring (CCLM) system wer. As a result of this determination, intioned drain valves were properly led on March 26, 2000.	s, it 15 [IJ]						
The three drain valves had been replaced is had flow restrictions that were different the valves were positioned in accordance with previously installed valves. This resulted of performing their design function. On N at which time the CCLM system was require monitor [IL] R-12 was removed from serve	in April of 1998 durin an the valves previou operating procedures in the new valves bein May 11, 1998, Unit 2 o hired to be operable where vice.	g a refueling outage. The replacement sly installed. Following replacement, to that assumed the same flow restriction ing incorrectly positioned and thus inca- entered Mode 4 following a refueling of henever the containment gaseous radia	valves the n as the pable outage tion						
Subsequently, it was determined that at is Farley Nuclear Plant Unit 2 was operated 3.4.15 specifies that the containment parti gaseous radiation monitor, R-12, or one of have previously been inoperable. Three o valves and the fourth CCLM was periodic was one occurrence in April 1999 and sev which were not identified) where all CCL operating in a condition prohibited by TS	olated times beginning in a condition prohibi- iculate radiation monit f the CCLMs be opera- of the CCLMs were in- cally inoperable due to yen occurrences in the Ms and both R-11 and requiring entry into T	g on May 11, 1998 until March 25, 200 ted by Technical Specifications (TS). or [IL], R-11, and either the containmed ble. All four CCLMs were determined operable due to improperly positioned o spurious alarms and maintenance. The first quarter of 2000 (and possibly other I R-12 were inoperable and resulted in S 3.0.3.)0, TS ent d to drain here ers Unit 2						
Based on a review of plant documents, it is TS 3.0.3 for a duration of 14 minutes. It is entries into TS 3.0.3 for a total duration of with a duration greater than 7 hours. The A root cause investigation determined that requirements for these valves. However,	is estimated that durin is also estimated that of f 21 hours and 9 minu duration of this entry t the system design gu these requirements we	g 1999, this event resulted in one entry luring 2000 this event resulted in seven tes. There was only one entry into TS was estimated to be 14 hours and 27 m ide included the unique flow restrictio ere not included in plant design docume	v into 1 3.0.3 ninutes. n ents.						
The root cause investigation also identifie Detection System Inoperable Due to Defe Technical Specification." This event was criteria were not adequately incorporated	d a similar 1997 Unit active Procedure Result attributed to a defection into plant operating p	1 event, LER 97-014-00 Unit 1 "RCS ts in Operating In Condition Prohibited ve procedure in that the unique flow re rocedures. Although the corrective act	Leak d by estriction ion from						

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION										
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this event changed operating procedures it failed to add the unique flow restriction requirements to plant design documents.

Cause of Event

The cause of this event is that plant design documents did not specify the unique flow restriction requirements of the CCLM drain valves. The CCLM drain valves are grouped in the bill of material with other common 3/8" drain valves allowing the selection of other replacement drain valves for use that did not have identical flow characteristics. This resulted in maintenance and planning controls allowing a valve of different flow characteristics to be installed without assuring operations procedures for throttling the valves were revised.

Safety Assessment

The limiting sensitivity requirement for the containment air cooler condensate level monitoring system is contained in the "leak before break" analysis. This analysis, contained in the WCAP-1285, "Technical Justification For Eliminating Large Primary Loop Pipe rupture As The Structural Design Basis for the Joseph M. Farley Units 1 and 2 Nuclear Power Plants," assumes a 10 gpm leak is detected within 1 hour. For conservatism, a sensitivity to detect a 1 gpm increase in RCS leak rate within 1 hour to maintain a safety margin of 10 is required. Based on a previous evaluation, and the as-found conditions for the A, B and C CCLM it is estimated that the system would have detected leaks of less than or equal to 1.8 to 5.1 gpm within 1 hour. Therefore, the system would have been capable of detecting RCS leakage although not at the required sensitivity. When the D CCLM was in service the 1 gpm sensitivity was met.

The containment cooler condensate monitoring system is one of three RCS leak detection systems. The other two leak detection systems are radiation monitors that monitor containment atmosphere particulate radioactivity (R11) and containment atmosphere gaseous radioactivity (R12). Although at isolated times these systems have been out of service, the majority of the time they have been available. When these radiation monitors are inoperable, the required compensatory measures of periodic containment atmospheric sampling would also detect RCS leakage. Other methods available to the operators for detecting RCS leakage are containment moisture detectors and changes in containment sump levels. In addition, TS require performing periodic RCS leak rate calculations, which are more accurate than the installed leak detection systems.

The containment leakage detection system is designed to detect steam resulting from RCS leakage into containment. Additionally, since this system is not modeled in the PRA and is not a contributor to core damage frequency, this event does not represent a safety system functional failure.

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U.S.NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER) **TEXT CONTINUATION**

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There was no abnormal reactor coolant system leakage condition on Unit 2 during this time.

The health and safety of the public was unaffected by this event.

Corrective Action

Two of the mispositioned drain valves were properly repositioned on March 25, and the third was properly repositioned on March 26, 2000.

Operating procedures have been revised to have operators determine the valve model and position the valves as directed by a table in the procedure.

The bill of material will be revised to specify the design requirement of the CCLM drain valves per a unique identification number that will include the unique flow requirements of these valves.

The plant component database will be revised to include complete information on containment cooler drain valves.

These actions will be completed by June 30, 2000.

Additional Information

Unit 1 CCLM drain valves were set in the correct positions following the 1997 event. Investigation determined that they have not been replaced since the 1997 event and that they were verified to have been in the correct position.

An opportunity was missed in 1997 to identify future potential for this type of event. Improvements in the root cause program have been made since 1997 that should minimize the potential for missing similar opportunities.

The following LER(s) have been submitted in the past two years due to plant design documents not updated correctly resulting in operation in a condition prohibited by Technical Specifications:

LER 99-003-00 Shared, Control Room Ventilation Radiation Monitors Inoperable