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United States Nuclear Regulatory Commission
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Perry Nuclear Power Plant
Docket No. 50-440
Supplemental Information in Support of a Proposed License Amendment Request to Revise the Intermediate Range Monitoring Instrumentation, Mode 5, CHANNEL FUNCTIONAL TEST Surveillance Frequency from 7 Days to 31 Days (TAC NO. MD0144)

Ladies and Gentlemen:

This letter provides supplemental information requested by the Nuclear Regulatory Commission on August 4, 2006 pertaining to the Perry Nuclear Power Plant License Amendment Request (LAR) submitted on February 14, 2006 (PY-CEI/NRR-2906L). The LAR would modify Technical Specification (TS) 3.3.1.1 to extend the Intermediate Range Monitoring Instrumentation, Mode 5, CHANNEL FUNCTIONAL TEST Surveillance Frequency from 7 Days to 31 Days.

There are no regulatory commitments contained in this letter or its attachment.

If there are any questions or if additional information is required, please contact Mr. Gregory A. Dunn, Manager - FENOC Fleet Licensing, at (330) 315-7243.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 17, 2006.

L.W. Pearce

Attachment:
1. Supplemental Information

cc: NRC Project Manager
NRC Resident Inspector
NRC Region III
State of Ohio

A001

Supplemental Information

On August 4, 2006, the Nuclear Regulatory Commission (NRC), by electronic mail, requested supplemental information relative to a Perry Nuclear Power Plant (PNPP) License Amendment Request (LAR) submitted on February 14, 2006 (PY-CEI/NRR-2906L). The LAR proposes to modify Technical Specification (TS) 3.3.1.1 by extending the Intermediate Range Monitoring Instrumentation, Mode 5, CHANNEL FUNCTIONAL TEST Surveillance Frequency from 7 Days to 31 Days. This submittal provides the requested supplemental information.

1. NRC Request:

Page 5, of Enclosure 1, under Updated Safety Analysis Report, states that the surveillance requirement for Mode 2 has not been revised and therefore that function would be assured. However, the NRC staff is concerned that changes in Mode 5 surveillance requirement may also impact on the operability of the function in Mode 2. Explain the basis for your rationale.

1. Response:

The Mode 2 Technical Specification Surveillance Requirement (SR) 3.3.1.1.4, CHANNEL FUNCTIONAL TEST (7 day performance frequency), is required to be performed or verified current prior to entering Mode 2 (during a plant startup) or within 12 hours of entering Mode 2 (during a plant shutdown). SR 3.0.1 states that SRs have to be met during the Modes or other specified conditions listed in the Applicability of a Limiting Condition for Operation (LCO). SR 3.0.4 states that entry into a Mode or other specified condition in the Applicability of an LCO shall occur only when the LCO's surveillances have been met within their specified frequency. These two Technical Specification requirements ensure the Mode 2 CHANNEL FUNCTIONAL TEST (SR 3.3.1.1.4) is performed or verified current prior to entering Mode 2 (during a plant startup) or within 12 hours of entering Mode 2 (during a plant shutdown), and during the period the plant is in Mode 2. Performance of the Mode 2 CHANNEL FUNCTIONAL TEST (7 day performance frequency) ensures IRM channel operability during plant shutdowns and startups, and during operations while in Mode 2.

The PNPP surveillance instruction used for the IRM CHANNEL FUNCTIONAL TEST is applicable to either the Mode 2 or Mode 5 surveillance requirement. The proposed license amendment would only change the performance frequency for the Mode 5 surveillance requirement from every 7 days to every 31 days. The Mode 2 CHANNEL FUNCTIONAL TEST performance frequency will not be altered by the proposed amendment and will remain at a frequency of every 7 days.

No changes are being proposed to either the operability requirements or surveillance frequencies for Mode 2 SRs.

2. NRC Request:

Page 7, Enclosure 1, second paragraph, This paragraph identifies many failures of the affected component of IRM function. Explain how these failures were discovered; during test or in between test.

3. NRC Request:

Page 7, Enclosure 1, second paragraph, This paragraph identifies multiple failures of S4 switch. However, it does not state the total number of failures and the effect of these failures such as could it have prevented the IRM trip.

2. and 3. Response:

Since Items 2 and 3 request similar information a single response is being provided.

LAR (PY-CEI/NRR-2906L) stated that the component which had the largest number of repeat failures was the IRM INOP Inhibit Switch (S4). Thirteen (13) failures have been identified. Records indicate that ten (10) of the failures were identified during the performance of instrument testing. The remaining records did not contain enough data to indicate how the failures were identified; however, switch S4 is a pushbutton switch which is only manipulated during IRM channel testing when the channel is in an inoperable configuration. Since the switch is not in the circuit when the IRM channel is in its operational configuration, switch failure does not impact channel operability.

The LAR also stated that there was a failure of a trip unit and a failure of a relay. With respect to the trip unit, records indicated the failure was identified during system operations in between the surveillance tests. Failure of this component only impacted indicating lights and would not cause the IRM channel to be inoperable. Failure of the relay was identified during the performance of IRM channel functional testing. Failure of this component caused the channel to be inoperable.

In addition to the component failures listed in the preceding paragraphs, though not described in the LAR, the maintenance history included 21 component failures which impacted channel operability. Examples include: optical isolator failures, which prevented the proper indication on channel recorders; range switch card failures, which prevented ranging the channel output reading; and motor module failures, which prohibited the motion of the detector into or out of the reactor vessel. However, no adverse trends in component or channel reliability were noted.

Seven (7) of the component failures were identified during the performance of channel functional testing; however, several could also have been identified by other means, such as observation of improper channel operation. Examples include the inability to drive detectors in/out of the reactor vessel and detector failure. Since channel inoperability can be determined through observation of improper channel operation or by the performance of other testing, the performance of channel functional testing does not appear to be a major factor in the identification of component failures that could impact channel operability.

Therefore, the performance frequency of the channel functional testing should have a minimal effect upon identification of component failures which could impact channel operability.

Given the number of components that comprise each of eight (8) individual IRM channels, the number of component failures identified in the 17-year review period is considered to be small. Therefore, it can be concluded from the maintenance history that the IRM channel components are reliable.