



April 15, 1994

OCAN049401

U. S. Nuclear Regulatory Commission
Document Control Desk
Mail Station P1-137
Washington, DC 20555

Subject: Arkansas Nuclear One - Units 1 and 2
Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6
NRC Bulletin 90-01 Supplement 1 Update

Gentlemen:

Entergy Operations at Arkansas Nuclear One (ANO) responded to NRC Bulletin 90-01, Supplement 1, in letter OCAN039302 dated March 5, 1993. In this response, an estimated schedule was provided to complete tasks necessary to fully address the required actions. The purpose of this submittal is to provide a summary of actions taken to date and the current schedule for completion of the remaining open items.

The original NRC Bulletin 90-01: "LOSS OF FILL-OIL IN TRANSMITTERS MANUFACTURED BY ROSEMOUNT", dated March 9, 1990, requested that licensees identify all suspect lots of Rosemount Models 1153 B & D and Model 1154 transmitters installed in safety-related or ATWS applications. Those installed in reactor protection (RPS) or engineered safety features actuation systems (ESFAS) should be replaced at the earliest appropriate opportunity. In response to this request, ANO identified several transmitters installed in RPS and ESFAS which required replacement in accordance with the bulletin. These transmitters have been replaced at ANO. A review of the warehouse inventory was also conducted to assure that any subject transmitters in inventory were removed and returned to Rosemount for refurbishment.

Subsequently, on March 11, 1994, a review of warehouse inventory identified a Rosemount transmitter in inventory from a previous suspect lot. This discrepancy was documented in the ANO corrective action program. As part of the root cause evaluation, it was determined that the transmitter had been identified for return to Rosemount; however, due to personnel error, another Rosemount transmitter was returned in its place. The suspect lot transmitter has since been removed from inventory.

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Current ANO practice with respect to issuance of Rosemount transmitters from the warehouse inventory is to evaluate each transmitter that has a serial number less than 500,000 on a case-by-case basis prior to its installation. No transmitter with a serial number less than 500,000, unless refurbished by Rosemount and stamped with a suffix A, will be installed in a high pressure application. Where outage frequency surveillances can be conducted in accordance with the supplement's requirements, transmitters with serial numbers less than 500,000 may be considered for a moderate or low pressure applications in safety-related systems.

A second request of the original bulletin was to develop an enhanced monitoring program which would identify loss of fill-oil before the transmitter lost its intended capability. ANO developed an enhanced program which incorporated the recommendations of Rosemount technical bulletin #4, including supplement 1, and the recommendations of NUMARC 91-02, "Summary Report of NUMARC Activities to Address Oil Loss in Rosemount Transmitters". Safety-related Rosemount transmitters have been placed in this trending program and are monitored on an outage frequency to identify a zero-shift trend greater than established limits which may indicate potential loss of fill-oil. This enhanced monitoring program is part of the ANO predictive maintenance program. As part of ANO's actions to respond to Supplement 1 of NRC Bulletin 90-01, the enhanced monitoring program was again reviewed against the recommendations of Rosemount technical bulletin #4 and its supplement and confirmed to be capable of identifying the potential for loss of fill-oil due to the trending of the zero-shift data.

NRC Bulletin 90-01, Supplement 1: "LOSS OF FILL-OIL IN TRANSMITTERS MANUFACTURED BY ROSEMOUNT", dated December 22, 1992, expanded the scope of the concern to all Rosemount transmitters with serial numbers less than 500,000 and requested licensees to perform additional actions. Requested actions included complying with new specific surveillance intervals based on the system importance, operating pressure, and length of time-in-service at pressure. ANO responded to the bulletin supplement with a list of tasks to be performed to accomplish the requested actions. ANO has been actively pursuing completion of the requested actions and a summary is provided below.

ANO prepared an updated list of 197 Rosemount transmitters utilized at ANO which reflected maintenance changes and changes made to replace suspect lot transmitters as requested by the original bulletin. ANO operations and system engineering personnel calculated the time-in-service values for each of the applicable transmitters. The threshold time-in-service values discussed in the bulletin supplement provided screening criteria for reliability of transmitters. These values were based on a detailed analysis of industry operating data. When a transmitter's time in service exceeded the value established, its potential for failure would be expected to be within a statistically acceptable range. From the updated list, a total of 53 transmitters were determined to require further review due to their safety-related application, being applied in high pressure applications or having serial numbers less than 500,000. Of these, only 8 (4 in each unit) transmitters had not met the time-in-service criteria (PSI-Month values).

Two (2) of these transmitters, one in each unit, were installed in high pressure applications. The other six (6) transmitters were installed in medium pressure applications. There were 23 additional transmitters identified which are installed in high pressure applications and have exceeded their PSI-Month values. Fourteen (14) of these transmitters are in Unit 1 and nine (9) in Unit 2. The remaining transmitters are installed in low or medium pressure applications and are addressed by the existing enhanced monitoring program.

A review of the high pressure transmitters was conducted to determine whether a suitable justification could be developed to extend the surveillance frequency from the supplement required monthly or quarterly interval to a refueling outage frequency since the supplement's specified surveillance frequency could not be met due to lack of access during power operation. The supplement identified various criteria which should be considered when attempting to prepare such a justification. After reviewing the requirements for redundancy and diversity, ANO concluded that there were not enough alternate transmitters with serial numbers greater than 500,000 to continue with the justification effort. As a result, ANO will replace all transmitters with serial numbers less than 500,000 which are currently installed in Q functional high-pressure safety-related systems. This replacement will occur at the next appropriate outage. This action, when completed, will place all Rosemount transmitters in compliance with the supplement's recommended surveillance frequencies. The current schedule for completing all Supplement 1 actions is refueling outage 2R10 (March-April 1994) for Unit 2 and refueling outage 1R12 (February-March 1995) for Unit 1.

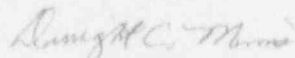
The current ANO program meets the outage frequency surveillance requirements for low and medium pressure application transmitters. Therefore, the 6 medium pressure transmitters with serial numbers less than 500,000 are not required to be replaced.

As a result of ANO's decision to replace all affected high-pressure safety-related transmitters, a number of actions identified in ANO's response to Supplement 1 of the bulletin have become unnecessary. Monthly surveillance intervals and the internal procedure changes necessary to support the increased surveillance frequency are no longer required. Also, it will not be necessary to prepare and submit justifications for extending the surveillance interval from monthly to a refueling outage frequency for those transmitters which have exceeded their PSI-Month value.

ANO remains committed to implementing the requirements of NRC Bulletin 90-01 and Supplement 1. A final response for Unit 2 will be submitted within 60 days following completion of the current refueling outage, 2R10. Due to the length of time before the next Unit 1 outage when the remaining transmitters can be replaced, an additional action is being taken to assure reliability of the affected transmitters. This action consists of an on-line cross-channel check each shift to monitor the performance of those high pressure transmitters which have been identified for replacement. The ANO enhanced monitoring program and the actions which have been taken continue to provide confidence that the Rosemount transmitters will be able to accomplish their design functions.

Should you have any questions concerning this subject please contact me.

Very truly yours,



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DCM/jrh

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