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Michael D. Lyster
VICE PRESIDENT - NUCLEAR

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July 20, 1992
PY-CEI/NRR-1524 L

Mr. David L. Meyer, Chief
Rules and Directives Review Branch
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Perry Nuclear Power Plant
Public Comments on Proposed Generic
Communication: Supplement 1 to
NRC Bulletin 90-01

Gentlemen:

Enclosed are comments submitted on behalf of the Cleveland Electric Illuminating Company (CEI), a 10CFR Part 50 licensee of the Perry Nuclear Power Plant (PNPP), in preparation for the upcoming NRC meeting scheduled for July 23, 1992 to review industry comments regarding proposed Supplement 1 to NRC Bulletin 90-01, "Loss of Fill Oil In Transmitters Manufactured By Rosemount." CEI will be attending the upcoming meeting and welcomes the opportunity to assist the NRC staff in resolving this important issue. CEI fully endorses both the Nuclear Management and Resources Council (NUMARC) and the Boiling Water Reactor Owner's Group (BWROG) comments submitted to the NRC staff in response to the proposed supplement.

CEI has taken extensive actions in response to the original NRC bulletin to ensure the performance capability of equipment in safety related applications at the Perry Nuclear Power Plant. These actions have included selective replacement of Rosemount transmitters in conjunction with implementation of an enhanced transmitter monitoring and trending program which we believe to be highly effective in identifying transmitters with characteristics of slow fill-oil loss. CEI has also supported the NUMARC data collection activities and the NUMARC efforts to resolve the Rosemount transmitter issue. In light of the substantial actions undertaken to date to resolve the Rosemount transmitter issue, not only by CEI, but also by NUMARC, Rosemount and the utility industry, we do not believe that all the actions proposed in the draft supplement are warranted. In particular, we do not agree that an adequate basis or rationale have been presented in the draft supplement to support either (1) the staff's conclusion that actions requested by the previous bulletin are insufficient to ensure the transmitters achieve the desired high functional reliability, or (2) the staff's recommendation in Requested Action 1(b) of the draft Supplement for the blanket replacement of transmitters and/or the implementation of an on-line monitoring system, for transmitters installed at boiling water reactors (BWRs) and operating between 500 and 1500 psi.

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Operating Companies
Cleveland Electric Illuminating
Toledo Edison

USNRC

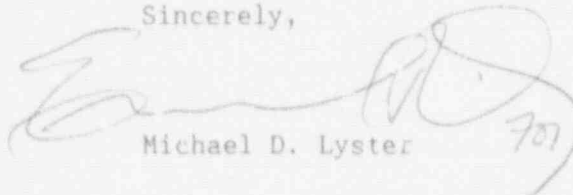
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We do believe that the actions already taken in response to the original bulletin in regard to enhanced surveillance (enhanced monitoring and trending) are sufficient for continued monitoring of the performance of transmitters in service. We also believe that utility decisions to replace transmitters should be based on performance considerations or the determination that replacement is a preferred option to that of enhanced surveillance. This option has been provided for the pressurized water reactors (PWRs) in Requested Action 1(b) of the draft Supplement, and should also be provided for BWRs.

More detailed comments are presented in the enclosure. If you have any questions, please feel free to call.

Sincerely,

A handwritten signature in dark ink, appearing to read "Michael D. Lyster", with a date "7/27" written to the right of the signature.

Michael D. Lyster

MDL:CJF:ss

Enclosure

c: file

CLEVELAND ELECTRIC ILLUMINATING COMPANY
COMMENTS ON DRAFT SUPPLEMENT TO NRC
BULLETIN 90-01 "LOSS OF FILL OIL IN
TRANSMITTERS MANUFACTURED BY ROSEMOUNT"

CEI agrees with the "description of circumstances," surrounding the Rosemount transmitter issue presented by the NRC staff in the draft supplement to NRC Bulletin 90-01. In addition, the staff's characterization of the transmitter failure mechanism, i.e., a "very slow rate" loss of fill fluid, causing transmitter performance to gradually deteriorate which may lead to failure, is consistent with the data obtained to date from our enhanced surveillance program. CEI also agrees with the staff's conclusion that the actions taken by individual licensee's in response to NRC Bulletin 90-01 have helped to improve the safety of operating reactors by reducing the susceptibility of Rosemount transmitters to fail because of loss of fill-oil. However, several statements contained in the draft supplement, as well as the recommended actions contained therein, warrant additional comment.

In the Discussion section of the draft supplement, the staff raised as a concern that two licensees indicated an intent not to replace suspect lot transmitters installed in reactor protection system (RPS) or engineered safety feature (ESF) actuation systems. We agree with the NUMARC comment regarding this concern; it should not impact the overall generic resolution of the Rosemount transmitter issue. Because CEI may or may not be one of the licensees to which the staff was referring, we will address the staff's concern in more detail.

In our initial response to Bulletin 90-01, we took the position that we would follow the staff's recommendations contained in the bulletin due to the limited amount of information available at that time. Consequently, we developed and implemented a program to replace suspect lot transmitters. A total of sixty (60) transmitters installed in the Perry Plant have been included on Rosemount's list of suspect lot transmitters to date. Of these sixty suspect lot transmitters, thirty-six (36) have been replaced. However, only thirteen (13) of the sixty suspect lot transmitters exhibited loss of fill oil. In conjunction with the replacement activity, we implemented the remaining Bulletin 90-01 recommendations. We reviewed Perry Plant's historical records on the calibration of transmitters against appropriate acceptance criteria. We established an enhanced surveillance program to identify, monitor and trend all applicable Rosemount transmitters installed in technical specification applications for symptoms of fill oil loss. Our enhanced surveillance program consisted of (1) revision of our calibration instructions to address oil loss, including a rapid pressure transient test to 130% of calibration span; (2) establishment of a computerized data base to trend for cumulative zero shift; and (3) implementation of administrative controls to evaluate transmitter calibration drift data for characteristics of loss of fill fluid. We obtained Rosemount's assistance in developing and improving our enhanced monitoring and trending program and in analyzing transmitter calibration data to ensure the reliability of results. We incorporated the Rosemount Technical Bulletin No. 4 guidelines into our enhanced surveillance program.

In addition, we reviewed transmitter performance data following plant transients, based on available computer points collected from initiating transmitters following reactor scrams, for characteristics of fill oil loss failure. We provided training to appropriate plant operators and technicians on the implementation of our enhanced surveillance program and in the detection of loss of transmitter fill fluid. We participated in the NUMARC and Rosemount data collection activities to develop an industrywide operational experience database for all models of Rosemount transmitters. We supported the NUMARC and utility industry efforts to develop an acceptable resolution to the Rosemount transmitter issue.

In accordance with the Bulletin 90-01 guidelines, we ultimately utilized the additional operational experience data generated from our own efforts in response to the bulletin, and from those of NUMARC, Rosemount and the utility industry, to develop a resolution to the Rosemount transmitter issue for the Perry Plant. Based on our review of historical transmitter performance data, operational experience, and the results obtained under our enhanced Rosemount monitoring and trending program, we determined that our initial approach to replace transmitters solely on the basis of suspect lot status was no longer warranted. To date, our enhanced monitoring and trending program, in conjunction with the initial historical review of calibration data, has enabled the identification and removal of a total of nineteen (19) transmitters exhibiting characteristics of sensor oil loss, of which seven (7) have yet to appear on a Rosemount suspect lot list. We no longer consider the replacement of transmitters having acceptable time-tested operational trends with new untested transmitters to be an acceptable resolution, particularly when considering the time-in-service statistics assembled by NUMARC and Rosemount. This conclusion was supported by NUMARC in NUMARC Report 91-02, "Summary Report of NUMARC Activities to Address Oil Loss in Rosemount Transmitters (May 1991)." Consequently, by letter PY-CEI/NRR-1417L dated December 6, 1991, we informed the NRC staff that we would no longer continue to replace Rosemount transmitters solely on the basis of the transmitter's inclusion on a suspect lot list.

In the December 6, 1991 letter, we provided the NRC staff with the Technical basis and rationale for our change in approach and with a description of the alternative actions we would implement to resolve the Rosemount issue. This approach would utilize our monitoring and trending program, which we believe has achieved a high degree of functional reliability, to identify which transmitters would be replaced, i.e., those transmitters exhibiting characteristics of loss of fill oil. We expected the NRC staff to evaluate the technical basis and rationale for our position on a case specific basis. We did not, however, take the position that we did not intend to replace suspect lot transmitters installed in RPS or ESF actuation systems, since our approach would require replacement in a timely fashion where such replacement is warranted.

Also, in the Discussion section of the draft supplement, the staff raised as a concern the adequacy of the licensee's enhanced surveillance programs to determine the trend of transmitter drift and identify degradation without having a transmitter fail before the next scheduled calibration test. However, the staff fails to provide an adequate basis or rationale to support its concern, or to support its generic recommendation for either a blanket replacement of applicable transmitters or implementation of an on-line monitoring system.

It has been our experience that the enhanced monitoring and trending approach, when properly implemented, is an effective alternative to either of these approaches, particularly considering the fact that the failure mechanism involved, a very slow rate leak of sensor fill fluid at the glass-to-metal seal, is generally understood to cause a gradual deterioration of transmitter performance and not sudden failure. Based on the operational data obtained to date under our enhanced monitoring and trending program, which has been applied to all Rosemount transmitters installed in Technical Specification applications at the Perry Plant, we have achieved a high degree of confidence in the adequacy of our program to determine the trend of transmitter drift, to identify degraded transmitters and to enable replacement prior to transmitter failure. The operational data obtained to date under our monitoring and trending program confirms the effectiveness of cumulative trending of calibration data to identify and predict oil loss before transmitter failure. We also agree with the NUMARC position that sufficient performance data has been compiled to establish failure rates that can be used by licensees to determine appropriate surveillance intervals.

We agree with the staff's assessment of the diminished importance of suspect versus non-suspect lot classification relative to pressure applications or time-in-service. This assessment has been confirmed by Perry Plant operational experience and enhanced surveillance program results. Consequently, we believe that all such transmitters (pre-July 11, 1989 Model 1153 Series B, Model 1153 Series D and Model 1154 transmitters) should be given increased attention, and that depending on safety function, enhanced monitoring should be used to assess performance capability. As communicated to the staff in our December 6, 1991 letter, our enhanced surveillance program for the Perry Plant encompasses all Rosemount transmitters installed in Perry Plant Technical Specification applications. By this means we are able to ensure the performance capability of all Rosemount transmitters installed in Technical Specification applications, instead of just "suspect lot" transmitters. However, we continue to adhere to the position that replacement should not be required until such time that declining performance is demonstrated.

In the Discussion section of the draft Supplement, the staff states that "[t]o achieve a high functional reliability, a transmitter must have a low probability of failing while it is operating" and subsequently concludes that "actions requested by the previous bulletin are insufficient to ensure the transmitters achieve the desired high functional reliability" and "low probability of failing". However, the staff has not defined or clarified the terms "high functional reliability" and "low probability of failure". Nor does the staff provide the basis for its conclusion. As explained above, it is CEI's position that the actions taken in response to the original Bulletin i.e., enhanced monitoring and trending and timely replacement upon identification of symptoms of fill oil loss, have effectively addressed the generic oil loss concerns. As shown by the NUMARC data collection efforts, a direct result of industrywide implementation of enhanced monitoring and trending is an increase in transmitters identified with symptoms of fill oil loss. Consequently, the number of transmitters included on suspect lists has risen accordingly. The fact that additional transmitters have been identified with symptoms of fill oil loss following the implementation of enhanced monitoring and trending activities industrywide is evidence of the success of these activities in identifying this failure mechanism.

Over the long term the number of transmitters identified with symptoms of fill oil loss can be expected to decline as the population of concern (pre-July 1989 transmitters in service) both declines and matures. Therefore, we question the staff's conclusion regarding actions taken in response to the original Bulletin.

We also offer the suggestion that the scope of transmitters identified in the Conclusions and Requested Actions be clarified to exclude transmitter used for functions not significantly impacted by oil loss, e.g., standby, indication-only, and applications classified as safety-related due only to the pressure boundary function.

In conclusion, it is the Cleveland Electric Illuminating Company's position that the enhanced surveillance programs implemented at Perry and throughout the industry are appropriate and effective in resolving the Rosemount transmitter concerns. Therefore, Requested Action 1(b) of the draft Supplement should be revised to recognize the enhanced surveillance programs for the BWRs in the same manner they are recognized for PWRs.