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Docket Number 50-346

License Number NPF-3

Serial Number 2662

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United States Nuclear Regulatory Commission
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Subject: Response to Request for Additional Information Regarding License Amendment
Application to Revise Technical Specification (TS) 3/4.3.2.1, Safety Features Actuation
System Instrumentation, and Associated Bases
(License Amendment Request No. 98-0005; TAC No. MA6361)

Ladies and Gentlemen:

On September 7, 1999, the FirstEnergy Nuclear Operating Company (FENOC) submitted an application for an amendment to the Davis-Besse Nuclear Power Station (DBNPS), Unit Number 1, Operating License Number NPF-3, Appendix A Technical Specifications, regarding Technical Specification (TS) 3/4.3.2.1, Safety Features Actuation System Instrumentation, and associated Bases 3/4.3.1 and 3/4.3.2, Reactor Protection System and Safety System Instrumentation. The proposed amendment (DBNPS letter Serial Number 2586) would revise Table 3.3-4, Safety Features Actuation System Instrumentation Trip Setpoints, to remove the "Trip Setpoint" values for Instrument String Functional Unit "b", Containment Pressure - High, and Functional Unit "c", Containment Pressure - High-High, and also modify the "Allowable Values" entry for these same Functional Units, consistent with updated calculations using current setpoint methodology.

On March 15, 2000, during a conference call with the NRC staff, FENOC was requested to provide a written response to the issues discussed. Enclosure 1 provides the response to this request for additional information.

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Should you have any questions or require additional information, please contact
Mr. David H. Lockwood , Manager - Regulatory Affairs, at (419) 321-8450.

Very truly yours,

A handwritten signature in black ink, appearing to read "S. P. Sands". The signature is stylized with a large "S" and a distinct "M" at the end.

MKL/laj

Enclosures

cc: J. E. Dyer, Regional Administrator, NRC Region III
S. P. Sands, NRC/NRR Project Manager
D. J. Shipley, Executive Director, Ohio Emergency Management Agency,
State of Ohio (NRC Liaison)
K. S. Zellers, NRC Region III, DB-1 Senior Resident Inspector
Utility Radiological Safety Board

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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
REGARDING
LICENSE AMENDMENT REQUEST (LAR) 98-0005
FOR
DAVIS-BESSE NUCLEAR POWER STATION
UNIT NUMBER 1

In License Amendment Request 98-0005, the Containment Pressure – High setpoint analysis was updated in accordance with the standard Instrument Society of America (ISA) – S67.04 – 1994, "Setpoints for Nuclear Safety Related Instrumentation." The NRC request for additional information is in regards to whether the calculation supporting the license amendment request complies with Regulatory Guide (RG) 1.105, "Setpoints for Safety-Related Instrumentation," Revision 3, December, 1999, specifically Section C, "Regulatory Position." Section C of RG 1.105 states that conformance with Part 1 of Instrument Society of America (ISA)-S67.04-1994, "Setpoints for Nuclear Safety-Related Instrumentation," provides a method acceptable to the NRC staff for satisfying the NRC's regulations for ensuring that setpoints for safety-related instrumentation are established and maintained within the technical specification limits, subject to four listed exceptions and clarifications. The four individual exceptions and clarifications to ISA – S67.04 - 1994, taken verbatim from RG 1.105, are listed below, along with the Davis-Besse Nuclear Power Station (DBNPS) response for each.

Regulatory Position C.1

Section 4 of ISA-S67.04-1994 specifies the methods, but not the criterion, for combining uncertainties in determining a trip setpoint and its allowable values. The 95/95 tolerance limit is an acceptable criterion for uncertainties. That is, there is a 95% probability that the constructed limits contain 95% of the population of interest for the surveillance interval selected.

Response to Regulatory Position C.1

The 95/95 tolerance limit methodology is not applied directly to calculations at the DBNPS regarding confidence in equipment uncertainties. Much of the instrumentation is of a vintage that the equipment manufacturer specifications do not include uncertainty confidence data. This is the case for the Consolidated Controls Corporation model 6N81 bistable in the Safety Features Actuation System (SFAS) containment pressure trip string. Another major component in this instrument string is a Rosemount model 1153 pressure transmitter. Rosemount and Eaton (the Consolidated Controls Corporation successor) were contacted, but were unable to confirm a

specific value for uncertainty confidence for their equipment. Rosemount indicated that they were in the process of formulating a company position regarding uncertainty confidence values for their equipment.

As an alternative, a sample of historical calibration data was reviewed for this license amendment request to establish an acceptable confidence in uncertainty values for the SFAS containment pressure instrument string. Channel 1 calibration records were included in the review sample. For 100% of the sample, the as-found readings were within the allowable tolerance of the as-left values, such that the instrument string did not require any adjustment. These results demonstrate that even if equipment uncertainty values were higher than assumed in the setpoint calculation, this effect would be at least partially offset by the margin available from the calibration tolerance which is included in the instrument string calculation.

Another factor of note is that in order to provide additional margin and to account for field setting tolerances, a setpoint tolerance is established. Margin is gained because the field device is rarely calibrated with the setpoint at the maximum allowed field setting. Any difference between the maximum allowed field setting and the actual field setting results in increased margin from the analytical limit.

The setpoint verification presently done for channel calibration is accomplished by applying a pressure at the transmitter and reading a pressure value from the gauge at the transmitter when the bistable trips. This setpoint verification encompasses the entire string (i.e. the transmitter, analog amplifier and bistable) and, therefore, provides a high confidence in the accuracy of the trip setpoint setting.

In summary, the intended end result of establishing a tolerance limit criterion for uncertainties (such as 95/95) to ensure an accurate instrumentation response, is met at the DBNPS by means of the calculation methods, instrument string calibration, and setpoint verification.

Regulatory Position C.2

Sections 7 and 8 of Part 1 of ISA-S67.04-1994 reference several industry codes and standards. If a referenced standard has been incorporated separately into the NRC's regulations, licensees and applicants must comply with that standard as set forth in the regulation. If the referenced standard has been endorsed in a regulatory guide, the standard constitutes a method acceptable to the NRC staff of meeting a regulatory requirement as described in the regulatory guide. If a referenced standard has been neither incorporated into the NRC's regulations nor endorsed in a regulatory guide, licensees and applicants may consider and use the information in the referenced standard if appropriately justified, consistent with current regulatory practice.

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Response to Regulatory Position C.2

Of the standards listed in Section 7 of Part 1 of ISA-S67.04-1994, Standard ANSI/ISA-S51.1, "Process Instrumentation Terminology," is not known to be incorporated separately into the NRC's regulations nor endorsed in a regulatory guide. However, since this standard addresses only terminology, and has negligible impact on the technical content of the submittal and its associated calculation, its use does not require further justification. None of the other standards listed in Section 7 and none of the standards listed in Section 8 of Part 1 of ISA S67.04-1994 are used as part of the basis for the license amendment application.

Regulatory Position C.3

Section 4.3 of ISA-S67.04-1994 states that the limiting safety system setting (LSSS) may be maintained in technical specifications or appropriate plant procedures. However, 10 CFR 50.36 states that the technical specifications will include items in the categories of safety limits, limiting safety system settings, and limiting control settings. Thus, the LSSS may not be maintained in plant procedures. Rather, the LSSS must be specified as a technical-specification-defined limit in order to satisfy the requirements of 10 CFR 50.36. The LSSS should be developed in accordance with the setpoint methodology set forth in the standard, with the LSSS listed in the technical specifications.

Response to Regulatory Position C.3

In accordance with Section 4.3 of Part 1 of ISA S67.04-1994, the purpose of a LSSS is to assure that protective action is initiated before the process conditions reach the analytical limit. In addition, the LSSS may be the allowable value, the trip setpoint, or both. The limiting safety system settings are developed in accordance with the setpoint methodology and maintained in the DBNPS Technical Specifications as allowable values. (Note: This license amendment request directly affects the Limiting Condition for Operation portion of the Technical Specifications and not the LSSS portion of the Technical Specifications).

Regulatory Position C.4

ISA-S67.04-1994 provides a discussion on the purpose and application of an allowable value. The allowable value is the limiting value that the trip setpoint can have when tested periodically, beyond which the instrument channel is considered inoperable and corrective action must be taken in accordance with the technical specifications. The allowable value relationship to the setpoint methodology and testing requirements in the technical specifications must be documented.

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Response to Regulatory Position C.4

The allowable value relationship to the setpoint methodology and testing requirements in the technical specifications is documented in the setpoint calculation. The setpoint calculation is maintained as part of plant records.

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COMMITMENT LIST

THE FOLLOWING LIST IDENTIFIES THOSE ACTIONS COMMITTED TO BY THE DAVIS-BESSE NUCLEAR POWER STATION (DBNPS) IN THIS DOCUMENT. ANY OTHER ACTIONS DISCUSSED IN THE SUBMITTAL REPRESENT INTENDED OR PLANNED ACTIONS BY THE DBNPS. THEY ARE DESCRIBED ONLY FOR INFORMATION AND ARE NOT REGULATORY COMMITMENTS. PLEASE NOTIFY THE MANAGER – REGULATORY AFFAIRS (419-321-8450) AT THE DBNPS OF ANY QUESTIONS REGARDING THIS DOCUMENT OR ANY ASSOCIATED REGULATORY COMMITMENTS.

COMMITMENTS

DUE DATE

None

N/A