



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SUPPLEMENTAL SAFETY EVALUATION

BY THE OFFICE OF NUCLEAR REACTOR REGULATION

STATION BLACKOUT RULE (10 CFR 50.63)

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, ET AL.

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

DOCKET NO. 50-440

1.0 INTRODUCTION

By letter dated April 23, 1992, the NRC staff transmitted its Safety Evaluation (SE) of the Cleveland Electric Illuminating Company's (the licensee) initial responses to the Station Blackout (SBO) Rule, 10 CFR 50.63, for the Perry Nuclear Power Plant (PNPP), Unit 1. The staff found the licensee's proposed method of coping with an SBO for PNPP Unit 1 to be in conformance with the SBO Rule, contingent upon the satisfactory resolution of the recommendations presented in the SE. The licensee responded to the staff's recommendations by letter dated May 28, 1992.

2.0 EVALUATION

The licensee's responses to each of the staff's recommendations are evaluated below:

2.1 Class 1E Battery Capacity (SE Section 2.3.2)

SE Recommendation

The licensee should provide confirmation that the Unit 2 batteries will be dedicated and always available to Unit 1. This confirmation should be included with the other documentation supporting the SBO submittal that is to be maintained by the licensee.

Licensee Response

The licensee stated that the Unit 2 batteries are dedicated to Unit 1 service in accordance with the PNPP Unit 1 Technical Specifications (TS), Section 3.8.2.1, which applies to both the Unit 1 and Unit 2 batteries. The licensee further stated that in the event the Unit 2 battery status changes in the future (i.e., if Unit 2 is granted an operating license), a license amendment would be required to change the Unit 1 TS, with attendant requirements for prior NRC review.

Staff Evaluation

Based on its review, the staff finds the licensee's response acceptable and therefore considers the SE issue related to the class 1E battery capacity during an SBO event at the PNPP Unit 1 resolved.

2.2 Effects of Loss of Ventilation (SE Section 2.3.4)

2.2.1 Division III/HPCS Operation (SE Section 2.3.4.1)

SE Recommendation

The licensee should provide discussion and determine which switchgear room temperature condition is correct and include the correct value in the documentation supporting the SBO submittal. The licensee should include the basis for operability of the equipment if the room temperature goes over 104°F.

Licensee Response

In its response, the licensee indicated that the temperature profile for the HPCS switchgear room was being reverified based on an initial room temperature of 75°F, which is routinely checked on plant rounds, and that the HPCS switchgear room temperature was not expected to go over 104°F. The licensee further indicated that the determination of equipment operability during an SBO event will be made by October 1992 based on the reverified results of room heat-up calculations, and that the evaluation will be included in the SBO supporting documentation.

Staff Evaluation

Based on its review and the licensee's commitment, the staff finds the licensee's response acceptable and considers this SE issue related to the effects of loss of ventilation in the HPCS switchgear room resolved.

2.2.2 Control Room (SE Section 2.3.4.2)

SE Recommendation

The licensee should include in the procedure a provision to open cabinet doors in the control room within 30 minutes of the onset of an SBO event in accordance with the NUMARC 87-00, Supplemental Questions and Answers, dated January 4, 1990, independent of the temperature in the control room.

Licensee Response

The licensee indicated that appropriate SBO procedures will be implemented by November 1993 to open the control room cabinet doors

within 30 minutes. In addition, control room heat-up calculations will be reevaluated by October 1992 and the results will be included in the SBO supporting documentation.

Staff Evaluation

Based on the licensee's commitments, the staff finds the licensee's response acceptable and considers this SE issue related to the effects of loss of ventilation in the control room during an SBO event resolved.

2.2.3 Main Steam Tunnel (SE Section 2.3.4.4)

SE Recommendation

The licensee should verify that there are no valves in the steam tunnel which would be required to operate should containment isolation be necessary. If the licensee determines that there are some valves which must be closed for containment isolation, then the licensee should provide in the procedures for the closure of these valves early in the SBO event before the main steam tunnel significantly heats up, or ensure that the valves will be able to be closed at the expected steam tunnel temperature.

Licensee Response

The licensee indicated that no valves in the steam tunnel need to be operated during an SBO event to isolate the containment.

Staff Evaluation

Based on its review, the staff finds the licensee's response acceptable and considers this SE issue related to the effects of loss of ventilation in the steam tunnel during an SBO event resolved.

2.2.4 Cable Spreading Room (SE Section 2.3.4.5)

SE Recommendation

The licensee should establish a procedure for turning off the reactivity control system inverters early in the SBO event, such as within 30 minutes of the onset of an SBO. This information should be included in the documentation supporting the SBO submittal that is to be maintained by the licensee.

Licensee Response

The licensee indicated that the time interval for turning off inverters will be analytically determined by October 1992 and included in procedures and supporting SBO documentation.

Staff Evaluation

Based on the licensee's commitment, the staff finds the licensee's response acceptable and considers this SE issue related to the effects of loss of ventilation in the cable spreading room during an SBO event resolved.

2.2.5 Switchgear Room (SE Section 2.3.4.6)

SE Recommendation

The licensee should perform an analysis for the Division I and II switchgear rooms to confirm that there will be no appreciable temperature rise. The analysis should be documented as part of the documentation supporting the SBO Rule response.

Licensee Response

The licensee indicated that these calculations will be performed by October 1992 and the results will be incorporated in the documentation supporting the SBO response.

Staff Evaluation

The staff finds the licensee's commitment acceptable.

2.3 Proposed Modifications (SE Section 2.5)

SE Recommendation

The licensee should make permanent connections with proper disconnect devices between the Division III EDG and the two motor control centers (MCC EF1E-1 and MCC EF1C07), so that during an SBO, the procedure to make these connections will be simpler and a lesser burden on the operators. The licensee should include a full description of the proposed modifications in the documentation to be maintained by the licensee in support of the SBO submittal.

Licensee Response

In response to above recommendation, the licensee clarified that a crosstie will be made between MCC EF1E-1 and MCC EF1C07, rather than the diesel itself and the two separate MCC's, as implied in the NRC recommendation. The licensee stated that a permanent crosstie between spare buckets in the HPCS Division III MCC EF1E-1 and the Division II MCC EF1C07 will be installed to allow necessary isolation valve and suppression pool make-up system valve manipulations, rather than the temporary cable that had previously been proposed. Battery powered lighting will also be provided. Design change documents will be prepared by May 1993, with installation by the end of the fourth

refueling outage (presently scheduled for late 1993). During normal operation of the plant, physical and electrical separation of Divisions II and III will be maintained employing two design features of the crosstie: 1) normally open, fused disconnect switches at both ends of the crosstie, and 2) fuses normally stored out of the circuit. During the postulated SBO event, the Division II loads will be crosstied to Division III by use of the cable described above. The licensee further indicated that this design change will not involve an unreviewed safety question as described in 10 CFR 50.59, and therefore this design change will be implemented without the need for further NRC approval.

Staff Response

Based on its review, the staff finds the licensee's response acceptable and considers this issue related to the proposed modification resolved.

2.4 Quality Assurance and Technical Specifications (SE Section 2.6)

SE Recommendation

The licensee should verify that the SBO equipment is covered by an appropriate QA program consistent with the guidance of RG 1.155. Confirmation that such a program is in place or will be implemented should be included as a part of the documentation supporting the SBO Rule response.

Licensee Response

The licensee stated that most SBO coping equipment is installed as safety class. Non-safety systems and equipment used to meet the requirements of 10 CFR 50.63, and not already explicitly covered by 10 CFR Part 50 Appendices B or R, will be included in a QA program which conforms with RG 1.155, Appendix A. This program will be incorporated in the Perry Plant Quality Assurance Plan by January 1993.

Staff Evaluation

Based on its review and the licensee's commitment, the staff finds the licensee's response acceptable and therefore considers this SE issue resolved.

2.5 EDG Reliability Program (SE Section 2.7)

SE Recommendation

It is the staff's position that an EDG reliability program should be developed in accordance with the guidance of RG 1.155, Section 1.2, and the November 1987 version of the NUMARC 87-00, Appendix D. Confirmation

that such a program is in place or will be implemented should be included in the documentation that is to be maintained by the licensee in support of the SBO submittal.

Licensee Response

The licensee stated that as of January 1992, PNPP has implemented a program which monitors EDG reliability data using NUMARC 87-00, Rev. 1, Appendix D guidelines.

Staff Evaluation

The staff has recognized NUMARC 87-00, Appendix D, published in November 1987, as a document consistent with RG 1.155, Section 1.2. The staff accepts the licensee's statement regarding the EDG reliability program, provided the licensee confirms that NUMARC 87-00, Rev. 1, Appendix D contains the same elements as in RG 1.155, Section 1.2. This confirmation should be included as a part of the documentation supporting the SBO Rule response.

3.0 SUMMARY AND CONCLUSION

The NRC staff's Safety Evaluation (SE) pertaining to the licensee's initial responses to the Station Blackout (SBO) Rule, 10 CFR 50.63, was transmitted to the licensee by letter dated April 23, 1992. The staff found the licensee's proposed method of coping with an SBO for PNPP Unit 1 to conform with the Rule, contingent upon the satisfactory resolution of the recommendations presented in the SE. The licensee's responses to the staff's recommendations have been evaluated in this Supplemental Safety Evaluation (SSE) and are acceptable. The licensee has committed to complete heatup calculations, design changes, and procedure changes by April 28, 1994. This SSE documents the NRC's final regulatory assessment of the licensee's proposed conformance to the SBO Rule; therefore, no further submittal is required. It is the staff's position that the licensee must be in full compliance with the SBO Rule within two years after receipt by the licensee of this SSE, in accordance with 10 CFR 50.63(c)(4). Therefore, the licensee should take the necessary actions to ensure full compliance with the SBO Rule as indicated in the staff's SE and this SSE. Also, the licensee should retain all supporting documentation in the SBO file.

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