



PERRY NUCLEAR POWER PLANT

10 CENTER ROAD
PERRY, OHIO 44081
(216) 259-3737

Mail Address:
PO. BOX 97
PERRY, OHIO 44081

Michael D. Lyster
VICE PRESIDENT - NUCLEAR

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PY-CEI/NRR-1497 L

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Perry Nuclear Power Plant
Docket No. 50-440
Response to NRC Safety Evaluation
on Station Blackout (TAC No. M68584)

Gentlemen:

By letter PY-CEI/NRR-0995 L, dated 4/17/89 we provided a 4 hour station blackout (SBO) coping evaluation and proposed plant/procedure modifications for NRC review. We subsequently reconfirmed that our evaluation was performed in accordance with NUMARC 87-00, and that diesel generator target reliability of 0.95 would be maintained, in letter PY-CEI/NRR-1159L, dated 3/30/90. In a telephone conference on 2/8/91, several additional NRC questions concerning our blackout evaluation were addressed, and these were subsequently documented by letter PY-CEI/NRR-1329L, dated 3/15/91.

The NRC Safety Evaluation, dated 4/23/92, was based on these three submittals. It concluded that full conformance with the SBO Rule (10CFR50.63) was subject to implementation of several recommendations. These recommendations are addressed in Attachment 1 to this letter, and should allow resolution of this issue for the Perry Nuclear Power Plant.

We originally proposed to complete plant modifications and procedure changes within one year of NRC notification that our proposed actions conformed with 10CFR50.63. The SBO rule allows two years for completion from such notification. We are now proposing to complete SBO actions within two years from receipt of the SER, which is 4/28/94, to allow for plant modifications during our next refueling outage and associated operator training.

If you have any questions, please feel free to call.

Sincerely,

Michael D. Lyster

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MDL:WJE:ss
Attachment

cc: NRC Project Manager
NRC Resident Inspector
NRC Region III

Operating Companies
Cleveland Electric Illuminating
Toledo Edison

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PDR ADDCK 05000440
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IMPLEMENTATION OF STAFF RECOMMENDATIONS
TO CONFORM WITH STATION BLACKOUT RULE

The subject NRC Safety Evaluation contains recommendations which, the NRC cover letter notes, "if implemented will result in full conformance with the SBO rule." PNPP implementation of each recommendation will be completed as described below.

(1) "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 submittals that is to be maintained by the licensee."

As further clarified in a 5/13/92 teleconference with the NRC staff, the concern is future use of Unit 2 equipment. The Unit 2 batteries are dedicated to Unit 1 service in accordance with PNPP Unit 1 Technical Specification 3.8.2.1, which is equally applicable to both Unit 1 and 2 batteries. In the event Unit 2 battery status changes in the future, a license amendment would be required to change the Unit 1 Technical Specifications, with attendant requirements for prior NRC review.

(2) "The licensee should make permanent connections with proper disconnect devices between the Division 3 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 lesser (sic) 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 submittals."

For clarification purposes, our previous letters described a crosstie to be made between MCC EF1E-1 and MCC EF1C07, rather than between the diesel itself and two separate MCC's, as implied in the NRC recommendation.

A permanent crosstie between spare buckets in the HPCS Division 3 motor control center EF1E-1 and the Division 2 motor control center 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 late 1993). During normal operation of the plant, physical and electrical separation of Divisions 2 and 3 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 beyond-design-basis SBO event, the Division 2 loads will be crosstied to Division 3 by use of the cable described above.

Based on the NRC review and recommendations in Section 2.5 of the SER, it is the Perry Nuclear Power Plant position that this design change will not involve an unreviewed safety question as described in 10CFR50.59, and

therefore this design change will be implemented without the need for further NRC approval of the design.

(3) "The licensee should provide discussion and determine which [HPCS] switchgear room temperature condition is correct and include the correct value in the documentation supporting the SBO submittals. The licensee should include the basis of operability of the equipment if the room temperature goes over 104°F."

The HPCS switchgear room temperature is not expected to go over 104°F. The temperature profile for the HPCS switchgear room is being reverified, based on an initial room temperature of 75°F which is routinely checked on plant rounds. We will make a determination of equipment operability, based on reverified results of room heatup calculations, by 10/92 and incorporate this evaluation in the documentation supporting SBO equipment operability.

(4) "The licensee should perform an analysis for the D. 1 and 2 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."

These calculations will be performed by 10/92, and the results incorporated in the documentation supporting the SBO response.

(5) "The licensee should include in the procedure a provision to open the 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."

Appropriate SBO procedures will be implemented by 11/93 to open control room cabinets within 30 minutes. In addition, control room heatup calculations will be reverified by 10/92 and the results included in supporting documentation.

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

As confirmed with the NRC staff during the 5/13/92 teleconference, the time interval for turning off inverters will be analytically determined by 10/92 and included in procedures and supporting SBO documentation.

(7) "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."

No valves in the steam tunnel need to be operated during station blackout to isolate the containment. The crosstie described in item (2) above will allow isolation of required lines with the inboard MOV, from a remote location, which eliminates the need to operate isolation valves in the steam tunnel. These inboard MOV's are qualified for the expected drywell temperatures, because they are qualified for the bounding full-break LOCA, saturated steam environment.

(8) "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."

Most SBO coping equipment is installed safety class, and RG 1.155 Appendix A does not apply to safety-class equipment. Non-safety systems and equipment used to meet the requirements of 10CFR50.63, and not already explicitly covered by 10CFR50 Appendix 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 1/93.

(9) "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 submittals."

NUMARC 87-00 is recognized as acceptable guidance for meeting the requirements of 10CFR50.63 in RG 1.155 C, "Regulatory Position." NUMARC 87-00 Rev. 1, section 3.2.4 invokes Appendix D guidelines to maintain target EDG reliability at the level used to determine coping duration category. As of 1/92 PNPP has implemented a program which monitors EDG reliability data using NUMARC 87-00 Rev. 1 Appendix D guidelines.

CLARIFICATION OF AAC CLASSIFICATION

Although not necessary to meet 10CFR50.63, PNPP's original submittal (PY-CEI/NRR-0995L) had classified the HPCS diesel as an alternate AC (AAC) power source. The NRC Safety Evaluation did not assign this classification to the HPCS diesel because the crosstie would not be connected to "one (or both) of the full safety divisions to power the required SBC loads." The staff further clarified in the 5/13/92 teleconference that since the HPCS diesel excess capacity would not be used to power systems such as Division 2 battery chargers and ventilation fans, that it did not meet the minimally capable AAC source criterion. The staff felt that PNPP had justified a coping analysis, rather than an AAC analysis. The Safety Evaluation does recognize that the HPCS diesel can assist in coping during an SBC event, with reactor vessel injection and the permanent crosstie to the Division 2 loads including containment isolation valves and suppression pool makeup valves. Along with implementing the recommendations contained in the SER, PNPP still demonstrates the coping capability to conform with 10CFR50.63.

IMPLEMENTATION SCHEDULE

10CFR50.63(c)(4) requires implementation of plant modifications and procedure changes within two years of NRC Safety Evaluation receipt, which for PNPP is 4/28/94. Consistent with schedule dates provided above, plant modifications described in this and earlier SBO letters (tabulated below) will be installed by the end of the fourth refueling outage, and procedure changes similarly described will be implemented (i.e. operator training complete) by 4/28/94. These completion dates assume that the Safety Evaluation recommendations are satisfied by this letter, and that the NRC can therefore conclude that PNPP is in full conformance with the SBO rule pending completion of these actions.

REMAINING PNPP SBO COMMITMENTS

DATE

Hardware Changes

- | | |
|--|--------|
| 1. Permanent crosstie between HPCS Division 3 and Division 2 Motor Control Centers | RFO-4* |
| 2. DC lighting for Switchgear Rooms and manually operated equipment | RFO-4 |

Engineering Analyses

- | | |
|---|-------|
| 1. HPCS switchgear room temperature profile reverification and operability assessment | 10/92 |
| 2. Division 1 and 2 switchgear room heatup | 10/92 |
| 3. Time interval for turning off inverters | 10/92 |
| 4. Control room heatup reverification | 10/92 |

Procedure Changes

- | | |
|---|----------|
| 1. Station blackout response per NUMARC 87-00, Section 4.2.1: ONI-S11, Loss of Off-site Power, and ONI-R10-1, Station Blackout (HPCS) | |
| - Opening HPCS Switchgear Room door | 11/93 |
| - Contingency actions if condensate storage tank level sensing line freezes | 11/93 |
| - Unit 2/Unit 1 battery system crossties | 11/93 |
| - Opening of control room instrument cabinet doors within 30 minutes | 11/93 |
| - If calculated temperature requires, turning off reactivity control system inverters | 11/93 |
| - Division 3 crosstie for pool make-up and containment isolation if needed | 4/28/94 |
| - Closing of necessary isolation valves one at a time, and confirming normally closed MOV's are closed | 4/28/94 |
| - Suppression pool make-up | 4/28/94 |
| 2. AC power restoration: ONI-S11 | 11/93 |
| 3. Severe weather: ONI-ZZZ-1 | In place |

Reliability Program

1. Target reliability of 0.95 will be maintained In place

QA Program

1/93

References

- (1) PY-CEI/NRR-0995., "Response to Station Blackout Rule Using HPCS Division III as Alternate AC Power," 4/17/89.
- (2) PY-CEI/NRR-1159L, "Supplemental Response on Station Blackout." 3/30/90.
- (3) PY-CEI/NRR-1329L, "Supplemental Response on Station Blackout," 3/15/92.
- * RFO-4 is end of the fourth PNPP refueling outage, scheduled late 1993.