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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
STATION BLACKOUT SUPPLEMENTAL EVALUATION
WISCONSIN ELECTRIC POWER COMPANY
DOCKET NOS. 50-266 AND 50-301

1.0 INTRODUCTION

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 October 9, 1990. The staff found the licensee's proposed method of coping with an SBO to be acceptable, subject to the satisfactory resolution of several recommendations which were itemized in the staff's SE. The licensee responded to the staff's SE, and specifically to the recommendations, by letter dated November 8, 1990.

2.0 EVALUATION

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

2.1 Proposed AAC Power Source

SE Recommendation: The licensee should demonstrate using actual test data that the Gas Turbine Generator (GTG) can obtain and maintain a reliability of 0.95 or better. This demonstration should be completed within a reasonable time period (approximately 2 years). If the demonstration does not indicate an acceptable reliability of 0.95 or better, the licensee should propose an alternative or install another AAC source to meet the guidelines of RG 1.155 and NUMARC 87-00. (By letter dated August 3, 1990 WEPCO advised NRC that two additional EDGs would be installed. That letter did not indicate how the installation would relate to planning for station blackout.)

The licensee should also complete the test to show that the AAC source (GTG) can power the SBO loads within 1 hour after the onset of the SBO.

Licensee Response: The licensee stated that blackout start testing of the GTG is continuing on a monthly basis to establish the data to determine its reliability in this mode. However, the licensee is replacing the high temperature trip circuitry on the GTG based on the manufacturer's recommendation resulting from a high temperature trip of the GTG during a June 15, 1990, test when the outside temperature was 55°F. The modification will not be completed until May 1991 and the acceptability of the modification cannot be verified until completion of an 8-hour test during the summer of 1991.

The staff finds that the licensee is making a bona fide effort to verify the reliability of the GTG. However, this issue remains open until the tests are

successfully completed and demonstrate the achievability of a 0.95 reliability index. The licensee did not discuss how the two EDGs that are being added would relate to the station blackout rule.

The licensee stated that when black-start tests are performed, the GTG is normally started and loaded within 1 hour. No information was provided as to what loads are being powered. Therefore, the licensee should verify and include with the documentation being maintained by the licensee in support of its SBO submittals that the loads being powered during the tests are representative of or envelope the loads required for an SBO. In particular, it should be demonstrated that the required operator actions required during an SBO are enveloped by the test.

2.2 Condensate Inventory For Decay Heat Removal

SE Recommendation: The licensee should revise the TS to specify a minimum condensate storage tank inventory of 13,000 gallons per unit to provide assurance that adequate water is available to cope with an SBO for the required 1-hour duration.

Licensee Response: The licensee states that a plant-specific calculation shows that the present technical specification (TS) limit is adequate for the 1 hour prior to when the AAC power source will power the service water pumps. However, the licensee agrees that additional inventory in the condensate storage tanks would provide more time to shift the suction of the auxiliary feedwater pumps to the backup source. Therefore, the licensee commits to implement the recommended TS change by submission of the change to NRC for approval by May 1991.

The staff finds this commitment to be acceptable.

2.3 Class 1E Battery

SE Recommendation: The licensee should complete the battery capacity calculations in conformance with RG 1.155, Section 3.2, and include the calculations and results in the documentation package supporting the SBO analyses. The licensee should develop and implement any modifications that are required to assure adequate battery capacity to power the needed equipment for an SBO event.

Licensee Response: The licensee states that the battery calculations are complete for all four station batteries, no modifications are required, and the supporting documentation for the SBO analysis has been updated to include the most current calculations.

The staff finds the licensee's response to be acceptable.

2.4 Effects of Loss of Ventilation

SE Recommendation: 1) The licensee should document additional information to demonstrate the acceptability of the methodology, assumptions, adjacent room

effect, and initial conditions used in the heat-up calculations. 2) The licensee also should confirm that the assumed initial temperatures for the control and computer rooms are maximum allowable values and not just typical values and, if necessary, the room heat-up calculations for these two rooms should be reanalyzed based on the higher initial temperature. 3) The licensee should document additional justification as to why it is not necessary to open cabinet doors in the computer room and the basis used for determining the number of and location of ceiling tiles that were removed in the control and computer rooms. 4) The licensee should describe the controls that are to be used to assure that the ceiling tiles are not replaced or reconfigured in the future. The licensee should maintain the additional information and any analyses performed as a result of these recommendations in the documentation supporting the SBO submittal.

Licensee Response: The licensee stated that these recommendations for verifying the loss of ventilation analyses will be implemented by May 1991, and if additional analyses are required, they will be complete by November 1991.

The staff finds the licensee's commitment to be acceptable.

2.5 Procedures and Training

SE Recommendation: The EOPs should be reviewed and modified accordingly if necessary to account for any changes made to the EDG/GTG configuration or the associated 13.8 kV system, and appropriate training should be implemented to ensure an effective response to the SBO.

Licensee Response: The licensee states that modifications to Point Beach are controlled by the use of Nuclear Power Procedures, and these procedures require the appropriate procedural reviews and operator training as part of the modification process.

The staff finds the licensee's response to be acceptable.

2.6 Proposed Modification

SE Recommendation: Installation of additional EDG capacity. The SBO coping duration and evaluation should be re-evaluated subsequent to the licensee providing information on the installation.

Licensee Response: The licensee stated that the SBO coping evaluations and analyses will be amended for the plant configuration changes.

The staff finds the licensee's commitment to be acceptable.

In addition to the above, the licensee has committed to incorporate equipment used to cope with an SBO and not covered by current QA programs into a QA program that meets the guidance of RG 1.155, Appendix A, by November 1991, and to establish an EDG reliability program that conforms to RG 1.155, Position 1.2, by November 1991. The staff finds these commitments to be in accordance with the SE.

The licensee also noted some minor corrections to the SE and to the attached TER. Although these do not change any of the results or conclusions of the SE or TER, the staff appreciates receiving these corrections to the record.

3.0 SUMMARY AND CONCLUSIONS

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 October 9, 1990. The staff found the licensee's proposed method of coping with an SBO to be acceptable, subject to the satisfactory resolution of several recommendations which were itemized in the staff's SE. The licensee responded to the staff's SE, and specifically to the recommendations, by letter dated November 8, 1990.

The licensee has made a number of commitments consistent with the recommendations contained in the staff's SE. The staff has reviewed these commitments and found them to be acceptable. However, the commitments are subject to future NRC audit, and particularly the issues pertaining to the reliability acceptability of the gas turbine generator (GTG), and the test to demonstrate that the GTG can power the required shutdown loads within 1 hour.

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