



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)  
CATAWBA NUCLEAR STATION  
DOCKET NOS. 50-413 AND 50-414

1.0 INTRODUCTION

The NRC staff's Safety Evaluation (SE) pertaining to the licensee's initial response to the Station Blackout (SBO) Rule, 10 CFR 50.63, was transmitted to the licensee by letter dated January 10, 1992. The staff found the licensee's proposed method of coping with an SBO to be acceptable, subject to the satisfactory resolution of six recommendations which were itemized in the staff's SE. The licensee responded to the staff's SE, and specifically to the recommendations, by letter from M. S. Tuckman, Duke Power Company, to the Document Control Desk, U.S. Nuclear Regulatory Commission, dated February 28, 1992.

2.0 EVALUATION

The licensee's response to the staff's recommendations are evaluated below.

2.1 Class 1E Battery Capacity (SE Section 2.3.2)

SE Recommendation

The licensee needs to ensure that: (1) the Class-1E vital I&C battery loads that could occur during an SBO event would not exceed those measured during the blackout test; (2) the batteries have sufficient capacity for closing of the necessary circuit breakers to restore offsite power; and (3) the EDG batteries have sufficient capacity for EDG field flashing. The licensee should retain all supporting documentation in the SBO file.

Licensee Response

The licensee states that they are evaluating the actions that need to be accomplished in order to fully address this recommendation. The licensee concludes that all actions pertaining to this recommendation will be completed by December 31, 1992.

Staff Evaluation

Based on its review and the licensee's commitment, the staff finds the licensee's response acceptable. However, this acceptance is based upon the licensee being in full compliance with the SBO Rule within 2 years after receipt by the licensee of this SSE. Therefore, the staff recommends that

these calculations be completed and appropriate actions taken based on these calculations to bring the licensee into full compliance with the SBO Rule. The licensee should retain all supporting documentation in the SBO file for possible future NRC audit/verifications.

## 2.2 Compressed Air (SE Section 2.3.3)

### SE Recommendation

The licensee should ensure the accessibility to the steam generator PORVs and auxiliary feedwater flow control valves and the habitability in the areas where these valves are located during an SBO event.

### Licensee Response

The licensee states that the steam generator PORVs are located in the doghouses at Catawba. These doghouses are not a dominant area of concern since they are vented to the outside environment and are not provided with forced ventilation. The licensee also states that the SBO environment would not be different from the normal operating environment. The licensee concludes that the portion of the recommendation pertaining to the steam generator PORVs has been fully addressed and is, therefore, closed. Regarding the auxiliary feedwater flow control valves, the valves for steam generators A and D are located in the auxiliary feedwater pump room, while the valves for steam generators B and C are located in the mechanical penetration room. The licensee states that per calculation CNC-1240.00-00-0006, a maximum temperature of 135°F was assumed in the auxiliary feedwater pump room during an SBO event, hence this area is habitable. The licensee concludes that the habitability of the mechanical penetration room is still being evaluated and this portion of the recommendation will be completely addressed by December 31, 1992.

### Staff Evaluation

The staff finds the licensee's response pertaining to the steam generator (S/G) PORVs and auxiliary feedwater flow control valves for S/G A and D to be acceptable. The staff understands that the calculated temperature, not the assumed temperature, in the auxiliary feedwater pump room is 135°F. However, for the auxiliary feedwater flow control valves for S/G B and C, the licensee has committed to a complete evaluation of the habitability of the mechanical penetration room by December 31, 1992. The staff finds this commitment acceptable. However, this acceptance is based upon the licensee being in full compliance with the SBO Rule within 2 years after receipt by the licensee of this SSE. Therefore, the staff recommends that these calculations be completed and appropriate actions taken based on these calculations to bring the licensee into full compliance with the SBO Rule. The licensee should retain all supporting documentation in the SBO file for possible future NRC audit/verification.

## 2.3 Effects of Loss of Ventilation (SE Section 2.3.4)

### 2.3.1 AFW Pump Room & Turbine-Driven AFW Pump Pit (SE Section 2.3.4.2)

#### SE Recommendation

The licensee should verify that power will be available for the turbine-driven auxiliary feedwater pump pit ventilation fan during an SBO event.

#### Licensee Response

The licensee states that the electrical drawings indicate that this ventilation fan is a Standby Shutdown Facility (SSF) load powered from the SSF diesel generator. The licensee also states that it can be taken credit for in exhausting air from this area and maintaining pit temperature at or below 160°F.

#### Staff Evaluation

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

### 2.3.2 Control Room (SE Section 2.3.4.3)

#### SE Recommendation

The licensee should provide a procedure which will require the operators to open instrument cabinet doors within 30 minutes following an SBO in accordance with the guidance described in NUMARC 87-00.

#### Licensee Response

The licensee states that EP/1,2/A/5000/03, Loss of All AC Power, contains instructions for opening instrument cabinet doors within the required 30-minute period.

#### Staff Evaluation

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

### 2.3.3 Annulus, Mechanical Penetration Rooms and Doghouses Inboard/Outboard) (SE Section 2.3.4.5)

#### SE Recommendation

The licensee should verify that no manual operation of SBO response equipment in the annulus and mechanical penetration rooms is required during an SBO event. The licensee should also verify that the calculation for the McGuire mechanical penetration room is applicable to Catawba.

#### Licensee Response

The licensee stated that additional analysis is required to fully address this recommendation. The licensee further states that all required work will be completed by December 31, 1992.

#### Staff Evaluation

Based on its review and the licensee's commitment, the staff finds the licensee's response acceptable. However, this acceptance is based upon the licensee being in full compliance with the SBO Rule within 2 years after receipt by the licensee of this SSE. Therefore, these calculations should be completed, and appropriate actions taken based on these calculations to bring the licensee into full compliance with the SBO Rule. The licensee should retain all supporting documentation in the SBO file for possible future NRC audit/verification.

#### 2.4 EDG Reliability Program (SE Section 2.7)

##### SE Recommendation

The licensee should provide confirmation and include in the documentation supporting the SBO submittals that a program meeting as a minimum the guidance of Regulatory Guide 1.155, Position 1.2, is in place or will be implemented.

##### Licensee Response

The licensee states that Catawba currently has in place a program which is designed to maintain the reliability of the emergency power sources. This program includes, among other things, maintenance, testing, surveillance, and root cause investigation. Additionally, the licensee is closely following the process of Generic Issue B-56. Upon resolution of this Generic Issue, the licensee will review its emergency power source reliability program and make changes as necessary.

##### Staff Evaluation

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

#### 3.0 SUMMARY AND CONCLUSION

The staff has reviewed the licensee's response to the staff's SE pertaining to the SBO Rule (10 CFR 50.63) in their transmittal letter dated February 28, 1992. The licensee's confirmations and commitments to the staff's SE have been evaluated in this SSE. Additional evaluations are required to confirm battery capacity adequacy and habitability in the annulus and mechanical penetration room. The licensee has committed to perform by December 31, 1992, additional evaluations for these items. The staff's final regulatory assessment of the issues is documented in this SSE (Sections 2.1, 2.2, and 2.3.3). Therefore, no further submittals will be required on these issues. It is the staff position that the licensee must be in full compliance with the SBO Rule within 2 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 complete compliance with the SBO Rule as indicated in the SE and this SSE. The documentation related to these analyses and actions required should be included with the other documentation to be maintained by the licensee in support of the SBO Rule implementation for future NRC audit.

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