

SUPPLEMENTAL SAFETY EVALUATION REPORT
DOCKET NO. 50-346
DAVIS BESSE UNIT 1
GENERIC LETTER 83-28, ITEM 4.3
REACTOR TRIP BREAKER AUTOMATIC SHUNT TRIP

Generic Letter 83-28 entitled, "Required Actions Based on Generic Implications of Salem ATWS Events" was issued by the NRC on July 8, 1983. By letter dated December 9, 1983, Toledo Edison Company (TED) submitted a response to Item 4.3 of Generic Letter 83-28. The submittal included a response of the TED's design for the reactor trip breakers at Davis Besse Nuclear Power Station Unit 1. Also, the submittal included responses to plant specific questions identified in the NRC evaluation of the ANO-1 design. The ANO-1 design was endorsed by the B&W Owner's Group as a generic design modification. Subsequent to the review of TED's submittal, the staff issued a safety evaluation report (SER) indicating the acceptable and unacceptable aspects of the design and requested TED to resubmit it for the staff's approval. By letter dated June 22, 1984, TED resubmitted the proposed design for the incorporation of the automatic actuation of the shunt trip attachments for the reactor trip breakers.

The staff has reviewed the licensee's proposed design for the automatic actuation of the reactor trip breaker shunt trip attachments and finds it acceptable.

The licensee intends to implement this modification during the 1984 refueling outage.

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EVALUATION

The staff identified the following concerns in its safety evaluation report of Davis Besse Unit 1 issued on April 30, 1984:

- (a) Confirmation of the seismic qualification of the UV sensor (ITE-27H-211B).

The licensee notes that the modified design no longer contains the ITE-27H-211B UV sensor. The new sensor is Model ITE-27H-211R which is the same model as in the AP&L design. The licensee will assure, prior to use, that the seismic qualification of this relay envelops the RTB's seismic requirements. We find this commitment to be acceptable.

- (b) Confirmation that the breakers with ac shunt trip coils are seismically qualified.

The licensee notes that the modified design no longer uses ac shunt trip coils and as such this question is not applicable. The dc shunt trip coils will be seismically qualified, prior to use. We find this commitment to be acceptable.

- (c) Designation of the automatic shunt trip circuits as safety related and incorporation of design features as defined in items 4 and 5.

The licensee notes that the shunt trip attachments are now designated as safety related and has provided the schematics for the reactor trip breakers. The UV and shunt trip circuits for each breaker are in the same safety channel and, therefore, do not introduce a separation problem. Channel separation is maintained in the cable routing of the shunt and undervoltage trip circuits. Isolation of non-safety related source interruption device circuits from safety related circuits is provided through the coil to contact isolation of a Class 1E relay. Therefore, a fault in the source interruption circuit would not prevent operation of the safety related shunt trip circuit. This is in accordance with R.G. 1.75 and is, therefore, acceptable.

- (d) Incorporation of status indicating lights in the design and submission of revised test procedures as defined in item 6.

The licensee has included the additional status indicating lights in the modified design and submitted the revised test procedures.

Based on our review of the outline of revised test procedures, we conclude that it includes the appropriate steps to independently confirm the operability of the shunt and undervoltage trip circuits and is, therefore, acceptable.

(e) Submission of revised technical specifications as defined in item 7.

The licensee notes that existing technical specifications governing operability and surveillance of the reactor protection system and control rod drive trip breakers envelop operability and surveillance requirements for the shunt trip. As such no changes to the existing technical specifications are deemed necessary. We require that technical specifications explicitly note that the testing independently confirms the operability of the shunt and undervoltage trip attachments.

(f) Submission of revised electrical schematics to reflect the changes defined in items 4, 5 and 6.

The licensee submitted the revised electrical schematics for the shunt and UV trip circuits. Based on our review of the schematics for these circuits,

we find that they adequately reflect the description of the proposed changes and are, therefore, acceptable.

CONCLUSION

Based on the review of the licensee's responses to the concerns identified in the staff's evaluation of the plant specific questions, we find that the design modifications are acceptable. The staff requires that the licensee submit confirmation that the seismic qualification of the shunt trip attachment has been successfully completed. Further, the staff requires that the proposed technical specification be submitted as noted in item (e) following implementation of this modification.

ICSB SALP INPUT

PLANT: Davis Besse Unit 1

SUBJECT: Review of Design for Automatic Shunt Trip for Reactor Trip Breakers

| EVALUATION CRITERIA | PERFORMANCE CATEGORY | BASIS |
|-----------------------------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Management Involvement | 2 | Communication was established with the licensee which permitted prompt and responsible actions to resolve the concern. |
| 2. Approach to Resolution of Technical Issues | 2 | An understanding of the issue was demonstrated. |
| 3. Responsiveness | 2 | The licensee was asked to resubmit the design modification for the staff's review. Responses to NRC initiatives were made to effect a timely resolution. |
| 4. Enforcement History | N/A | No basis for assessment. |
| 5. Reportable Events | 2 | The re-submission of the design for automatic shunt trip for reactor trip breakers was complete and timely. |
| 6. Staffing | N/A | No basis for assessment. |
| 7. Training | N/A | No basis for assessment. |