

Docket No. 50-346

License No. NPF-3

Serial No. 1130

March 29, 1985



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Director of Nuclear Reactor Regulation  
Attn.: Mr. John F. Stolz  
Operating Reactor Branch No. 4  
Division of Licensing  
United States Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Stolz:

By letter dated November 7, 1983 (Serial No. 1000), Toledo Edison Company submitted the Davis-Besse Nuclear Power Station, Unit No. 1 response to Generic letter 83-28 (Log No. 1322), entitled "Required Actions Based on Generic Implications of Salem ATWS Events." Within that submittal, Toledo Edison provided detailed responses to each specific item identified in Generic Letter 83-28.

In your letter, "Reactor Trip Breaker's Preventative Maintenance Program; Items 4.2.1 and 4.2.2, Generic Letter 83-28", (Log No. 1685), dated January 30, 1985, additional information was requested to continue your review. Per telecon with Mr. A. DeAgazio on February 28, 1985, Toledo Edison received an extension to March 29, 1985, to submit the requested information.

Within your letter (Log No. 1685), for Generic Letter Item 4.2.1, it was stated the Davis-Besse, Unit 1 periodic maintenance program for the reactor trip breakers should include the 13 items listed on a six month interval basis. Your letter further stated the licensee is to confirm that the periodic maintenance program includes these 13 items at the specified interval or commit to their inclusion.

As stated in our letter of November 7, 1983, reactor trip breaker maintenance is performed in accordance with Maintenance Procedure MP 1405.05, 480V Type AK Circuit Breaker Maintenance and Testing, which is presently based on the General Electric Instruction GEI-50299, Service Advice 175-9.3S and Service Advice 175-9.20. Attachment I provides a response to the 13 items relating to a periodic maintenance program for Davis-Besse.

In your letter of January 30, 1985, for Generic Letter Item 4.2.2, it was stated the licensee is to commit to inclusion of (1) trip torque, (2) breaker response time, (3) dropout voltage for undervoltage trip, and (4) breaker insulation resistance as trending parameters. The licensee should

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also identify the organization which will perform trend analysis, how often the analysis will be performed, and how the information derived from the analysis will be used to affect periodic maintenance.

At Davis-Besse, data has been accumulated since July, 1982, for trending of breaker response time from loss of signal to the undervoltage device, trip shaft operating torque, undervoltage device pickup voltage, and undervoltage device dropout voltage. As a participant in the B&W Owners Group Reactor Trip Reliability Monitoring Program, data from these parameters has been included in the program since January, 1984. Breaker insulation resistance data is taken and used as acceptance criteria during preventative maintenance, however, breaker insulation resistance was not selected as a trending parameter that provides useful information for the Reliability Monitoring Program.

The Davis-Besse Maintenance Department is assigned to collect the data from these parameters on a six month interval, per MP 1405.05. Data from these parameters is given to the B&W Owners Group Availability Group for trending and analysis for the duration of the Reliability Monitoring Program.

Upon completion of the Reliability Monitoring Program, an analysis will be performed to evaluate the interval for performing periodic maintenance. If the analysis indicates a period greater than 12 months is warranted, TED will perform breaker periodic maintenance using the 12 month interval recommended by General Electric, the breaker manufacturer, and B&W, the breaker supplier. If analysis indicates a period less than 12 months is warranted, we will then determine the appropriate conservative interval for performing this maintenance.

Toledo Edison recognizes the importance of the reliability of the reactor trip breakers and contends the actions outlined above are sufficient to ensure their reliability.

Very truly yours,

*R P Crouse*

RPC:DLM:JSH:SGW:nlf  
encl. cc: DB-1 NRC Resident Inspector

### Reactor Trip Breaker Periodic Maintenance

Request: The licensee is to confirm that the periodic maintenance program includes the following 13 items at the specified interval or commit to their inclusion:

1. Verification of breaker cleanliness and insulation structure; all foreign materials, such as paint, dust, or oil, should be removed to prevent electrical breakdown between points of different potential.

Response: MP 1405.05 includes inspections in accordance with General Electric Instruction GEI-50299.

2. Verification of breaker physical condition, including wiring insulation and termination, all retaining rings, pole bases, arc quencher, stationary and movable contacts, and tightness of nuts and bolts.

Response: MP 1405.05 includes a verification of breaker physical condition.

3. Verification of proper manual operation of the breaker, including checks for excessive friction, trip bar freedom, latch engagement, operating mechanism alignment and freedom, and undervoltage trip (UVT) device armature freedom.

Response: MP 1405.05 includes inspections in accordance with General Electric Instruction GEI-50299.

4. Verification of the optimum freedom of the armature as specified in General Electric Service Advice 175-9.3S, item #S1.

Response: MP 1405.05 includes this verification in accordance with General Electric Service Advice 175-9.3S.

5. Verification of proper trip latch engagement as specified in Service Advice 175-9.3S, item #S2.

Response: MP 1405.05 includes this verification in accordance with General Electric Service Advice 175-9.3S.

6. Verification of undervoltage pick-up setting, as specified in Service Advice 175-9.3S, item #S3, and dropout voltage.

Response: MP 1405.05 includes this verification in accordance with General Electric Service Advice 175-9.3S.

7. Verification that the trip torque required on the trip shaft is less than 1.5 pound-inches, as specified in Service Advice 175-9.3S, Item #S4; "Before" and "After" maintenance torque values should be recorded.

Response: MP 1405.05 includes this verification in accordance with General Electric Service Advice 175-9.3S.

8. Verification of positive tripping by checking the adjustment between the UVT device and trip paddle as specified in Service Advice 175-9.3S, item #S5.

Response: MP 1405.05 includes this verification in accordance with General Electric Service Advice 175-9.3S.

9. Verification of proper trip response time as specified in Service Advice 175-9.3S, item #S6.

Response: MP 1405.05 includes this verification in accordance with General Electric Service Advice 175-9.3S. The breaker response time acceptance criteria, specified by Babcock & Wilcox, based on the Safety Analysis is 100 msec.

10. Lubrication of trip shaft and latch roller bearings with Mobil 28 lubricant.

Response: At Davis-Besse, the latch roller and trip shaft bearings have been replaced with bearings lubricated with Mobil 28 grease.

11. Shunt Trip Attachment (STA) operation verification.

Response: MP 1405.05 includes this verification in accordance with General Electric Instruction GEI-50299.

12. Examination and cleaning of breaker enclosure.

Response: Examination and cleaning of the breaker enclosure is performed on a refueling outage basis per procedure and includes the recommendations of CEI-90890.

13. Functional test of the breaker prior to returning it to service.

Response: Functional testing of the breaker prior to returning it to service is performed in accordance with Surveillance Test ST 5030.12, Channel Functional Test of the Reactor Trip Module Logic and Control Rod Drive Breakers.