



ARKANSAS POWER & LIGHT COMPANY

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April 23, 1985

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R E I S S U E D

Mr. Hugh Thompson
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Arkansas Nuclear One - Unit 1&2
Docket No. 50-313 and 50-368
Licensee Nos. DPR-51 and NPF-6
Amended Response to GL 83-28

Gentlemen:

In response to your letter dated December 7, 1984, (0CNA128408) the following information is provided.

Item 1.1 Criteria for Evaluating Compliance with Item 4.2.1

The ANO Units 1 and 2 Reactor Trip Systems utilize General Electric AK-2A circuit breakers. The primary criteria for an acceptable maintenance program for this breaker are contained in Maintenance Instruction GEI-50299EI*, "Power Circuit Breakers, Types AK-2/2A-15, AK-2/3/2A/3A-25, AKU-2/3/2A/3A-25," and Service Advice 9.3S and 9.20, by General Electric. The NRC Staff, Equipment Qualification Branch, has reviewed these items and endorsed the maintenance program they describe. More specifically, the criteria used to evaluate compliance include those items in the General Electric instructions and advisories that relate to the safety function of the breaker, supplemented by those measures that must be taken to accumulate data for trending. The acceptable maintenance activity interval is six months.

Response - ANO-1&2:

Currently procedures require preventative maintenance to be performed at a 6 month interval. Reliability of RTB operation, with the new Mobil 28 lubricated trip shaft bearings, will be evaluated for a complete cycle of operation. With satisfactory performance during that period, it is anticipated the maintenance interval will be extended to 12 months consistent with GE, B&W, and CE Service Advisories.

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Item 1.2 Issues Relating to Item 4.2.1

The licensee response states that preventative maintenance on the Reactor Trip Breakers is performed at six month intervals and is in accordance with procedures which meet vendor recommendations for lubrication, housekeeping and adjustments. The referenced procedures were not included with the submittal.

The ANO Unit 1 and 2 periodic maintenance program for the reactor trip breakers should include, on a six month basis:

Item 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 - ANO-1&2

Plant procedures require steps consistent with this item.

Item 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 - ANO-1&2

Plant procedures require steps consistent with this item.

Item 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 - ANO-1&2

Plant procedures require checks for proper manual operation of the breaker and trip devices consistent with this item.

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

Response - ANO-1&2

Plant procedures contain checks of armature freedom for the UV device consistent with this item.

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

Response - ANO-1&2

Plant procedures contain instructions for proper trip latch engagement consistent with this item.

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

Response - ANO-1&2

Plant procedures contain instructions for UV pickup and dropout voltage consistent with this item.

Item 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 - ANO-1&2

Plant procedures contain instructions to verify trip shaft torque is less than 1.5 pound-inches consistent with this item. We are evaluating use of 20 oz.-in. instead of 24 oz.-in. consistent with the recommendations of the B&W Owners Group.

Item 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 - ANO-1&2

Plant procedures provide instruction for checking adjustment of the trip paddle consistent with this item.

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

Response - ANO-1&2

Plant procedures provide instructions for verifying trip response time consistent with this item.

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

Response - ANO-1&2

Reactor Trip Breakers are presently being revitalized with WD-40 or CRC5-56 (if previously revitalized) per prior GE instruction.

However, there is a program in place at this time to systematically replace the trip shaft and latch roller bearings with bearings lubricated with Mobil 28 lubricant. Currently the ANO-1 RTBs have completed the changeout. The ANO-2 RTBs are being changed during the current refueling outage. The changeout, complete with procedure revisions, is anticipated to be complete for both units by July 1, 1985.

Item 11. Shunt Trip Attachment (STA) operation verification;

Response - ANO-1&2

Plant procedures contain instruction for shunt trip operation consistent with this item.

Item 12. Functional test of the breaker prior to returning it to service.

Response - ANO-1&2

Plant procedures contain instruction for functional testing consistent with this item.

Item 2.1 Criteria for Evaluating Compliance with Items 4.2.2

Four parameters have been identified as trendable and are included in the criteria for evaluation. These are (1) undervoltage trip attachment dropout voltage, (2) trip torque, (3) breaker response time for undervoltage trip, and (4) breaker insulation resistance.

Response - ANO-1&2

ANO is participating in the B&W Owners Group (BWOG) activities relative to this issue. (Please see BWOG Amendment 1 response to GL 83-28 dated April 8, 1985, Mr. J. T. Enos to Mr. H. Thompson)

Item 2.2 Issues Relating to Item 4.2.2

The licensee submittal states that the licensee "has participated in and supports the activities of the B&W Owners Group for a Reactor Trip Breaker (RTB) Reliability Monitoring Program." The B&W Owners Group response to GL 83-28, dated November 4, 1983, proposes "monitoring of critical performance parameters (particularly response time)" to identify the need for maintenance or replacement of breakers. It is not clear whether the response time is for a shunt or undervoltage trip.

The licensee is to commit to inclusion of trip torque, breaker response time and dropout voltage for undervoltage trip and breaker insulation resistance as trending parameters. The licensee should 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.

Response - ANO-1&2

Please see our above response to Item 2.1

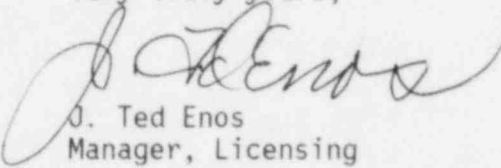
Mr. Hugh Thompson

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AP&L is participating in the activities of the BWOOG relative to GL 83-28. We hereby reference the latest submittal (Amendment 1 to GL 83-28 response, dated April 8, 1985, Mr. J. T. Enos to Mr. H. Thompson) as applicable to AP&L.

Very truly yours,

A handwritten signature in cursive script, appearing to read "J. Ted Enos".

J. Ted Enos
Manager, Licensing

JTE:ds