



Commonwealth Edison

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March 23, 1984

Mr. James G. Keppler
Regional Administrator
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Byron Generating Station Units 1 and 2
I&E Inspection Report Nos. 50-454/83-58
and 50-455/83-43

Reference (a): January 31, 1984 letter from J. F.
Streeter to Cordell Reed.

Dear Mr. Keppler:

Reference (a) provided the results of an inspection conducted by Messrs. M. Ring, D. Williams, C. VanDenburgh, and R. Nelson at Byron in December, 1983 and January, 1984. During that inspection certain activities were determined to be in noncompliance with NRC requirements. Attachment A to this letter contains Commonwealth Edison's response to the Notice of Violation appended to reference (a).

Three of the four examples of noncompliance cited in this Notice of Violation relate to a minor Test Change Request which was made during the reactor protection logic test. It should be noted that the NRC's inspection was conducted prior to completion of our reviews of this test. Our startup manual and other directives specifically require that we review minor TCR's for this type of deficiency. This process is designed to detect and correct problems such as this one without NRC involvement. The system functioned adequately in this particular instance. The issuance of a Notice of Violation is not particularly constructive in such circumstances.

Please address any questions you may have regarding this matter to this office.

Very truly yours,

T. R. Tamm
for

D. L. Farrar
Director of Nuclear Licensing

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ATTACHMENT A

Response to Notice of Violation

Violation

10 CFR 50, Appendix B, Criterion V, states in part, "Activities affecting quality shall be prescribed by documented instructions, procedures or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures or drawings". Criterion XI states in part, "A test program shall be established... identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents."

The Byron Startup Manual paragraph 3.5.4.1.2 states, "Any changes that alters the numerical value of an acceptance criteria," is defined as a major change. Paragraph 4.7.3.8 of the Startup Manual states, "All tests will normally be run to their completion...." Paragraph 4.7.4.1 states, "After test completion, the System Test Engineer will notify the Shift Engineer that the test is completed and advise him as to the system status."

Technical Staff Supervisor Memo dated March 18, 1982, states, "If the test data falls outside the specified range a testing deficiency must be written."

Contrary to the above:

- a) On November 28, 1983, while conducting RP-68-12 (sic), "Reactor Protection Logic Checks," at Step 9.6.9 the recorded voltage was outside the specified range and no deficiency was written.
- b) On November 28, 1983, while conducting RP-68-12 (sic), "Reactor Protection Logic Checks," at Step 9.6.9 the acceptance criteria were changed with a minor Technical Change Request (TCR) instead of a major TCR.
- c) The minor TCR authorized a value of 48 ± 10 VDC for the undervoltage coil which allowed a value in excess of the nominal voltage of 43 ± 2 VDC listed in the Westinghouse Solid State Protection System Technical Manual at Section 6.2.1.6. No justification was provided for this value.
- d) Preoperational test procedure CV 18.10, "Chemical and Volume Control-VCT and Charging Pumps," was completed, reviewed and accepted by the test engineer, the Test Review Board and Project Engineering without Steps 10.2 and 10.3 under Restoration having been signed for completion.

Comment on Items a and b

Items a and b incorrectly refer to preoperational test RP 68.12. The detailed inspection report correctly identifies the reactor protection logic test as 68.13.

Discussion of Items a, b, and c

Test RP 68.13 verifies, among other things, that pressurizer high level signals will cause a reactor trip when any two of the three channels are actuated above 10% power. To demonstrate the operability of this trip function of the reactor protection system, high level signals are simulated but the reactor trip breakers are not physically tripped open. Test RP 68.13 verifies a large number of reactor trip functions. To physically actuate the breaker every time would involve numerous breaker cycles and would cause unnecessary wear. Once it is established that the undervoltage trip assembly is functional, RP 68.13 only requires verification that the voltage drops to zero when various combinations of instrument signals are simulated.

To verify that a single high level signal does not cause a reactor trip, step 9.6.9 of test RP 68.13 states: VERIFY 48 VOLTS ON ALL FOUR UV COILS. Using a voltmeter, testing personnel check each coil and verify that they are all energized.

Step 9.6.9 is marked with an Acceptance Criteria flag. Verification of coil energization at this point is important because in a later step, de-energization of the coils will be verified. If the coils were not energized at Step 9.6.9, there would be something wrong. The specific voltage level is not a process parameter and is not particularly important here. It is measured for acceptability elsewhere in the test procedure.

Appendix D to RP 68.13, "Miscellaneous Information - Expected Values," identifies 48 ± 5 V and 0V as the coil voltages which were expected in energized and de-energized conditions, respectively. Actual voltage measurements taken ranged from 42 to 43 VDC. The manufacturer's equipment manual indicates that the nominal voltage should be 43 ± 2 VDC. The System Test Engineer (STE) did not consult the equipment manual, but he judged the measured voltages to be acceptable.

The purpose of this step of test RP 68.13 was to verify energization of the coils, basically an on-off parameter. The System Test Engineer made a change to the Appendix D expected voltage values using a minor test change request (TCR) to resolve the discrepancy. The expected voltage level in the energized coil was changed from 48 ± 5 VDC to 48 ± 10 VDC.

Because these criteria were to be used later in the test to accept or reject the coil voltage, this change should have been made via a major TCR instead of a minor TCR. Although the error should not have occurred, Byron administrative controls on test review provide assurance that it would have been detected.

During the post test review of preoperational test the Test Review Board (TRB) is required by the Startup Manual (SUM) to review and approve minor TCR's. The TRB is also required by Tech Staff Memo #10 to verify that test deficiencies are written when required and that recorded data is within expected range.

Corrective Action Taken and Results Achieved for Items a, b, and c

In reviewing test RP 68.13, the TRB independently determined that the minor TCR regarding the expected voltage range should have been a major TCR, requiring a higher level of review. The TRB requested that the Project Engineering Department (PED) review the revised voltage range for acceptability. The PED review will verify that the expected range is 43 ± 2 VDC, as described in the equipment manual.

Actions Taken to Avoid Further Noncompliance for Items a, b, and c

The need for a major TCR in this situation has been reviewed with the STE responsible for this test. The importance of consulting manufacturer's manuals during test writing and revision was also stressed with this individual.

Tech Staff Memo #9 was also revised to remind other STE's of their responsibility to consult manuals when writing or revising expected ranges.

The requirements for review of preoperational tests by the TRB appear to be adequate with regard to this event.

Date When Compliance Will Be Achieved for Items a, b, and c

February 27, 1984.

Discussion of Item d

Section 10.0 of Pre-operational Test CV 18.10 performs the restoration of the CV system. Step 10.2 functions to realign the CV system to the configuration requested by the Shift Engineer. Step 10.3 serves to inform the Shift Engineer that restoration has been completed and that the System Status Notice (SSN) has been updated. These steps were not completed because a portion of the test was not run and the STE erroneously beleived that Steps 10.2 and 10.3 were to be done only when the whole test was complete.

Corrective Action Taken and Results Achieved for Item d

As shown by the Sequence of Events Log, the Shift Engineer and the Shift Control Room Supervisor had been adequately briefed by the STE at the completion of the test.

Corrective Action Taken to Avoid Further Noncompliance for Item d

Technical Staff Memo #39 was written to clarify the intent of the Exiting Procedures and Restoration Section of preoperational tests.

The individuals involved in reviewing completed tests for the TRB and at PED are being reminded of their responsibility to assure that all test steps have been completed and signed off.

Date When Full Compliance Will Be Achieved for Item d

Tech Staff Memo #39 has been circulated. The test step signoff issue has reviewed with TRB personnel to remind them to review all sections of pre-operational tests for completeness. This was complete as of March 16, 1984.