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DUKE POWER

June 30, 1994

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Subject: Catawba Nuclear Station
Dockets Nos. 50-413 and 50-414
Reply to Notice of Violation
Inspection Report Nos. 50-413/94-11 and 50-414/94-11

Attached is Duke Power's response to the one (1) Level IV violation cited in the Notice of Violation of Inspection Report 50-413/94-11 and 50-414/94-11.

This violation involved errors which were made during performance of Power Range Nuclear Instrumentation testing and were not identified and corrected by the job supervisor prior to returning the channels to service.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'D. L. Rehn'.

D. L. Rehn

\KEN:RESP94.11

xc: S. D. Ebnetter
Regional Administrator, Region II

R. E. Martin, ONRR

R. J. Freudenberger
Senior Resident Inspector

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Product not recycled paper

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REPLY TO NOTICE OF VIOLATION
413,414/94-11-01

Notice of Violation

During an NRC inspection conducted on April 3, 1994 - May 7, 1994, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Action," 10 CFR Part 2, Appendix C, the violation is listed below:

Technical Specification 6.8.1, Procedures and Programs, requires, in part, that written procedures be established, implemented and maintained covering the activities referenced in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, which includes licensee procedures controlling the performance and Job Supervisory reviews of analog channel operational tests on Power Range Nuclear Instrumentation.

Procedure IP/2/A/3240/04H, Power Range - N41 Analog Channel Operational Test, step 10.3.28.G, requires the "As Found" setpoint for the Neutron Flux High Trip bistable to be adjusted within the calculated allowable setpoint range. Similar procedures for Power Range Channels N42, N43, and N44, IP/2/A/3240/04I through K, step 10.1.19, require use of a tolerance of +0.0 and -0.01 volts DC for calculation of the allowable setpoint range for the Neutron Flux High Trip Setpoint.

Maintenance Management Procedure 1.0, Work Request Preparation, Section 4.10.1, requires the responsible Job Supervisor of maintenance work to review and sign Work Requests, indicating that all acceptance criteria have been met and entries have been correctly entered in the procedures used in the associated Work Request, prior to returning the component to service.

Contrary to the above, on April 29, 1994, licensee personnel failed to adequately implement procedures IP/2/A/3240/04H through K and MMP 1.0. The Neutron Flux High Trip bistable for channel N41 was not adjusted to within the allowable range during the performance of procedure IP/2/A/3240/04H. An incorrect tolerance was used when calculating the allowable setpoint range for Neutron Flux High Trip Setpoints for channels N42, N43, and N44 during the performance of procedures IP/2/A/3240/04I through K. In addition, the Job Supervisor reviews of the completed Work Requests, performed the same day, did not identify the procedural errors prior to returning the channels to service. These problems resulted in the Neutron Flux High Trip Setpoint for channels N41 and N44 being left slightly above the required allowable trip setpoint range for approximately eight hours.

This is a Severity Level IV Violation (Supplement I).

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RESPONSE:

1. Reason for Violation

- a) The Neutron Flux High Trip bistable for channel N41 was not adjusted to within the allowable range during performance of procedure IP/2/A/3240/04H.

This violation is attributed to personnel error and inattention to detail. The technicians performing this task failed to properly perform the actions specified by procedure IP/2/A/3240/04H. The stated allowable range for the N41 channel setpoint was 4.573 to 4.583 volts. The as found value of 4.587 volts was recorded by the technicians and they did not take action to place the setpoint within the required range. The Job Supervisor did not give sufficient attention to detail during review of the Work Request package to verify all acceptance criteria of procedure IP/2/A/3240/04H were met. Specifically, the Job Supervisor's review did not identify the recorded setpoint of 4.587 volts for the N41 channel as being outside the allowable range of 4.573 to 4.583 volts.

Management expectations are that the individuals performing setpoint adjustment or verification will ensure that all as left values are within the allowable range and that an additional verification of the acceptance criteria will be performed during the Job Supervisor's review. These expectations were not met by either the technicians or the Job Supervisor involved with the N41 channel work.

- b) An incorrect tolerance was used when calculating the allowable setpoint range for Neutron Flux High Trip Setpoints for channels N42, N43, and N44 during performance of procedures IP/2/A/3240/04I through K.

This violation is attributed to personnel error and inattention to detail. The technicians performing this task failed to properly perform the actions specified by procedure IP/2/A/3240/04I through K. The procedures required calculation of a setpoint for the Neutron Flux High Trip for channels N42, N43, and N44, based on the reduced power conditions in effect at the time. The procedures specified a tolerance of +0.0 and -0.01 volts to be applied to the calculated setpoint. In performing

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the calculation, the technicians applied a tolerance of +0.01 and -0.01 volts, which is the normal tolerance for the setpoint calculation at full power operation as shown in the procedure. This error resulted in a calculated setpoint range of 4.573 to 4.593 volts rather than the correct range of 4.573 to 4.583 volts. Each procedure requires a sign-off and separate verification of the calculation for the associated channel. Based on the simplicity of the calculation it is apparent that the error occurred as a result of inattention to detail.

Some "human factors" concerns with the format of the procedures and calculation have been identified as possible contributing factors to the errors that were made. Though these "human factors" items could have contributed to the errors made in performing the calculations, these do not appear to be the primary cause. The same individuals had properly performed the calculation for channel N41 just prior to making the errors in calculations for channels N42, N43, and N44. A review of two additional previous uses of these procedures also did not indicate any problem with the proper performance of the calculations.

- c) The Job Supervisor reviews of the completed Work Requests did not identify the procedural errors prior to returning the channels to service.

The reason for this error on channel N41 is an inadequate review by the Job Supervisor for the reasons as previously stated in Item a) above. The setpoint of 4.587 volts measured and recorded by the technicians was outside the allowable range of 4.573 to 4.583 as specified by procedure IP/2/A/3240/04H, and this error should have been identified by the Job Supervisor during review of the Work Request package. The technicians performed this work outside their normal work schedule and their regular supervisor was not available to perform the Work Request review and sign-off. The Work Request sign-off for the N41 channel was performed by the duty shift Maintenance Supervisor who was not as familiar with the technical details of the task that was performed. Our review of this situation indicated that the duty shift Maintenance Supervisor did not fully understand the expectations for performing the review of this work, and further discussions with other Maintenance Supervisors also indicated that the expectations may not have been

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well understood. However, we have concluded that Maintenance Supervisors have the necessary skills, training, and/or work experience to perform an adequate review of Work Request packages, regardless of their specific technical background. The review process is the same regardless of the job performed, and Job Supervisors are expected to discuss the task with the technicians and seek any additional assistance as necessary to obtain an adequate understanding of the scope of work performed. Verification of acceptance criteria requires only a comparison of the recorded values against the stated tolerance, and does not require a detailed technical knowledge of the activity being performed.

For channels N42, N43, and N44, the calculation was not performed correctly by the technicians. Also, they did not properly perform the required separate verification of this calculation. The management expectation is that the technicians' actions of performing and separately verifying calculations of this type are adequate to ensure their correct implementation. The technicians performing these tasks are both qualified and competent to properly perform the actions, and an additional review of the calculation by the Job Supervisor is not necessary.

The technicians performing the work for channels N42, N43, and N44 signed off the completed Work Request packages due to a misinterpretation of a Catawba Nuclear Station's Instrument And Electrical (IAE) Maintenance policy for Job Supervisor review and sign-off. Although this was not the approved method for performing the Job Supervisor sign-off, it is not considered a primary cause for the incorrect calculation, since the Job Supervisor review is not intended to verify calculation steps that have already undergone a separate verification by the technicians who performed the work.

2. Corrective Actions Taken and Results Achieved

- a) The Neutron Flux High Trip bistable for channel N41 was not adjusted to within the allowable range during performance of procedure IP/2/A/3240/04H.
- b) An incorrect tolerance was used when calculating the allowable setpoint range for Neutron Flux High Trip Setpoints for channels N42, N43, and N44 during

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performance of procedures IP/2/A/3240/04I through K.

The technicians involved have been counseled on the importance of verifying that data is within the tolerance range as specified by the procedure, and on the importance of properly performing and verifying calculations. Each individual was given a detailed explanation of the Management expectations related to adequate attention to detail and the potential problems of plant safety and reliability that could result from errors of this type. The actions taken are in accordance with our administrative process.

- c) The Job Supervisor reviews of the completed Work Requests did not identify the procedural errors prior to returning the channels to service.

In response to the issue of expectations for Job Supervisor review requirements, Maintenance Management conducted a review of the Company, Station, and Maintenance group guidelines and policies related to the review and sign-off of Work Request packages. From our review we have concluded that the stated expectations are consistent with management expectations, and are well defined in the controlling documents. The expectations are being recommunicated to all individuals involved with the conduct, review, or sign-off of Maintenance Work Request packages.

3. Corrective Actions to be Taken to Avoid Future Violations

- a) The Neutron Flux High Trip bistable for channel N41 was not adjusted to within the allowable range during performance of procedure IP/2/A/3240/04H.
- b) An incorrect tolerance was used when calculating the allowable setpoint range for Neutron Flux High Trip Setpoints for channels N42, N43, and N44 during performance of procedures IP/2/A/3240/04I through K.

Based on review of past uses of this procedure by these and other individuals, and given the past performance history of the individuals involved, the inadequate adjustment and incorrect calculations are considered as isolated incidents caused by personnel error and lack of attention to detail. A Management expectation is that adjustments will be made correctly during performance of a procedure or task, and that a secondary review of the

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acceptance criteria will be performed by the Job Supervisor during review and sign-off of the Work Request package. Another Management expectation is that individuals performing tasks with a separate verification requirement are fully responsible for the proper performance and verification of that task. The individuals involved in this incident have been made fully aware of these expectations. Similar communications will be made to all members of the Maintenance group by August 1, 1994, which will reiterate the individual roles and responsibilities for performing these tasks, the importance of proper implementation, and the potential consequences for not meeting expectations in this area.

Procedure enhancements are being considered for the methods of performing and recording the calculations for Neutron Flux High Trip setpoints for each of the power range channels. Based on our review of past uses of procedures IP/2/A/3240/04H through K, the current calculation is adequate, however there are possible enhancements that can be made to minimize the potential for additional errors. These enhancements will be evaluated by August 1, 1994.

-) The Job Supervisor reviews of the completed Work Requests did not identify the procedural errors prior to returning the channels to service.

A formal recommunication of the Job Supervisor responsibilities for review of completed Work Request packages will be made to all individuals involved with the conduct, review, or sign-off of Maintenance Work Requests. This communication will include identification of the controlling documents and policies related to Work Request review and sign-off and the associated roles and responsibilities of each individual. This communication will be made by each level of Maintenance Management to their direct reports. Communication has already been made to the majority of affected individuals, and will be made to all remaining individuals by August 1, 1994. This implementation schedule will allow sufficient time to cover those individuals on a shift rotation schedule.

4. Date of Full Compliance

Duke Power Company is now in full compliance.