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DUKE POWER

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

Subject: Catawba Nuclear Station, Units 1 and 2
Docket Nos. 50-413 and 50-414
NRC Inspection Report No. 50-413, 414/90-17
Reply to a Notice of Violation

Gentlemen:

Enclosed is the response to the Notice of Violation issued July 23, 1990 by the NRC. The Violation involves the inadvertant transfer of reactor coolant water to the Refueling Water Storage Tank. I have also provided a response that describes the status of the overall program to improve the character of operations at Catawba.

Very truly yours,

Hal B. Tucker

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MHH/59/lcs

xc: Mr. Stewart D. Ebnetter
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DUKE POWER COMPANY
REPLY TO A NOTICE OF VIOLATION
413/90-17

Technical Specifications 6.8.1 requires that written approved procedures shall be established, implemented, and maintained covering applicable activities recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978.

Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, recommends procedures for surveillance tests. Test procedure PT/1/A/4200/57, FW and ND Check Valve Full Stroke Test, requires that valve 1ND-33 be closed prior to opening valves 1ND-36B, 37A, 32A, and 1NI-178B.

Contrary to the above, on June 11, 1990, during performance of test procedure PT/1/A/4200/57, FW and ND Check Valve Full Stroke Test, the Unit 1 control room operator failed to verify that manual valve 1ND-33 had been closed as required by the procedure before proceeding with subsequent procedure steps. This resulted in an inadvertent diversion of 5,000 gallons of reactor coolant to the Refueling Water Storage Tank, violations of the pressurizer cooldown and heatup limitations, an inadvertent operating Mode change, and momentary loss of residual heat removal capability.

Response

1. Admission or Denial of Violation

Duke Power admits the violation.

2. Reasons for Violation if Admitted

The control room operator became confused and committed a human error by proceeding with the procedure.

3. Corrective Actions Taken to Avoid Further Violations and Results Achieved.

Some of the following corrective actions have already been addressed in our description of our overall plan for Human Performance Improvement.

Augmenting our shift resources during critical plant evolutions, such as entry to Mode 4, to allow more direct supervisor involvement with the operators is presently being tested. This has resulted in closer supervisor/operator interface thus increasing communications and preventing needless errors.

On-going:

Catawba Nuclear Station has in place a Human Performance Program. Management action has been taken in the areas of procedure enhancement, facility of communications, and configuration control. Those parts which came into play for this event included; (1) a tailgate session conducted prior

to running the test to understand expectations and requirements, (2) activities ongoing during the test were limited to reduce Operator distractions, (3) a testimonial training session for other Operations shifts is being conducted by the individuals involved to explain the event from their perspective. With the above measures in place immediate corrective actions were not complicated or compromised by misunderstanding or confusion.

We are providing continuous reinforcement of the "Back to Basics" philosophy to our operators, such as using repeat backs, verbalizing annunciators when they alarm, and working as a team in the control room, etc. This reinforcement is not only taking place in the control room but also on the plant simulator with our instructors helping us with emphasizing these principles in the simulator. These proven principles will reinforce to our operators the attention to detail which is expected and is necessary to eliminate needless errors.

CNS has, as a pilot study, instituted a program designed to enhance Operator alertness. Part of this study will be to determine what activities or physical exercises contribute to the overall effectiveness of the Operations shift team. Exercise equipment has been put in place near the control room and guidelines have been developed describing a 20 to 30 minute break for the control operators between the hours of midnight and five a.m. and to encourage them to use the exercise equipment during the break. The thought here is to increase the operators alertness during this time period.

Observations and audits from external groups are in progress. They are looking at the way we conduct business not only in the control room but also the plant. We have already received audits from Quality Assurance and SRO's from other Duke locations. This information will be evaluated and factored into our programs as applicable.

4. Corrective Actions to be Taken to Avoid Further Violations

- a. Evaluate the need for additional team training to be provided for the Operations Shift team and the Shift Managers by 10/31/90.
(Operations)
- b. A review will be conducted to determine if there is a category of infrequently run procedures that need to have additional verification controls inserted where there is a higher degree of risk for loss of Reactor Coolant by 12/31/90.
(Operations)

c. Training will be provided for all shift members on each individuals purpose and vision. It also will address breaking down barriers between individuals, and taking personal responsibility for creating the desired results. The date of completion for this training is targeted for 8/31/91.
(Operations Training)

d. A fully documented Westinghouse evaluation will be completed with respect to Pressurizer cooldown/heatup by 12/1/90.
(Design)

5. Date of Full Compliance

Duke Power Company is now in full compliance.

In response to your request for a status report on the implementation of corrective actions to improve the overall character of operations at Catawba the following information is provided.

Catawba Nuclear Station is now fully embarked on a path to improve nuclear safety and plant reliability through improved human performance. The path includes CNS involvement in Duke Power Company corporate programs for improving human performance through better communications and a Nuclear Production Department Human Performance Excellence Team. Several Catawba specific action plans are also well underway to reduce the incidence of human error in plant operations. All of these programs and their status are summarized in the following paragraphs dealing with four broad topic areas; (1) Management Actions, (2) Communications, (3) Configuration Control, and (4) Procedural Adherence and Adequacy.

Management Actions

- . Two on-site meetings have been conducted with all Site Managers and Supervisors. The message that Quality is the first and most important measure of Performance at Catawba has been clearly communicated. Every manager and supervisor has committed to carry this message to their work teams and to utilize the "quality in work tools" discussed in the meetings. CNS will continue to be clear on the expectation of quality first through several ongoing training programs designed to improve human performance. In addition "Rewards" for quality work have been or are being initiated. These include preferential parking, recognition in station publications and luncheons for quality teams.
- . An additional level of internal customer training for station work teams has been established. This is continuation of a corporate program previously completed by all station personnel. It provides a forum for two work teams to address and resolve conflicts in their working relationship. An example of this recently was a session held with Instrument and Electrical workers, Control Room shift operators, and Human Resource personnel to resolve problems with Control Room access. Understanding of the issue and an action plan to resolve future conflict was the result.
- . The Duke Power Company self verification training "Please Listen" has been completed by the majority of station personnel. Additional sessions are on-going to allow everyone an opportunity to receive the training. The program addresses the art of communication and the thought process for self verification actions to be taken before, during, and after a work activity to ensure that it was done with Quality.

- . Exercise equipment has been put in place near the Control Room and guidelines have been developed describing a 20 to 30 minute break for the Control Room operators between the hours of midnight and 5:00 AM. They will be encouraged to use the exercise equipment during the break. This is intended to increase the operators alertness during this critical time period.
- . A corporate program to provide "Team Training" to management and supervisory personnel is being implemented at Catawba Nuclear Station. This training stresses relationship and communication skills needed by groups attempting to accomplish common goals. This training has been received by most "manager" title individuals and we have as a goal that all Operations supervisors will receive this training by the end of August 1991.
- . On shift resources are now being augmented during critical plant evolutions, such as mode changes, to allow more direct supervisor involvement with the operators.
- . Additional audits by the QA organization and other DPC nuclear station SRO's have been conducted of the methods the Operations group is using to conduct business. Results are being evaluated as they are received for incorporation into Operations Management Policy.

Communications

- . Control Room briefings between the Control Room Operators and Support Groups preparing to carry out work activities and testing are now routine. This is providing better clarification to the operators of expected alarms and conditions to be created as a result of the activity.
- . The program of asking individuals who have committed personnel errors to share their thoughts and mind sets (testimony) with others in their work groups is now ongoing. This is being done in a sensitive and professional manner and has been well received.
- . Additional re-enforcement of proper communications techniques by operators is being conducted in the Control Room and on the plant simulator. These include use of "repeat backs", verbalizing annunciators when they come in, and working as a team in the control room. This is being done under a program called "back to basics".

Configuration Control

- . Five additional review points have been added to the plan controlling mode and condition changes of a unit

during an outage. These checks will better ensure proper system and component operability prior to their operational requirement. These new check points are now being successfully used during the unit two refueling outage.

. Additional emphasis is now placed on the operational effects of a modification to the plant. A dedicated meeting focusing on how the modification will impact plant operations is now held prior to it's implementation.

. A work control center has been established during refueling outages to ensure every outstanding work request is identified and tracked. This is already in place for the unit two refueling outage now in progress.

Procedural Adherence and Adequacy

. Procedure Review Teams are being developed in the Performance, and Chemistry Groups. These teams will work to improve procedures by incorporating human factors lessons as well as verification and validation guidelines. The review team in the Performance Group is already in place and has provided an interdisciplinary critique of key periodic tests to be run in the current unit two outage. "Tailgate" packages for these key Performance procedures have been developed for use just prior to conduct of the test to improve communications with the operating shift and reduce errors.

. Peer Evaluation Teams have been established to facilitate feedback on needed procedure improvements. These teams meet weekly and prioritize procedure improvement needs. "Hot Lines" using tape-recorder phones to make the process of reporting procedure problems easier have been established.

. A Human Performance Excellence Team plan has been established which includes all three DPC nuclear stations. This is a two year effort to study and incorporate human factors engineering lessons into nuclear operations procedures. A multi-department Human Performance Excellence Team has been formed and has received formal training in human factors engineering at the University of Michigan. The team will now concentrate on establishing working relationships within the nuclear stations and other related industry groups. Procedure enhancements and departmental training will take place over the two year period.