



Carolina Power & Light Company

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Mr. John G. Davis  
Deputy Director for Field Operations  
Directorate of Regulatory Operations  
Office of Regulation  
U. S. Atomic Energy Commission  
Washington, D. C. 20545

Dear Mr. Davis:

H. B. ROBINSON UNIT NO. 2 <sup>1</sup> ~~2~~ <sup>11</sup> ~~12~~  
LICENSE DPR-23  
RO INSPECTION OF AUGUST 20-23, 1974

50-261

This letter is in reply to your letter of November 12, 1974, regarding violations identified during the August 20-23, 1974, inspection conducted at the H. B. Robinson Plant Site. This reply addresses each item listed in the Appendix A, Notice of Violation, of that letter. As authorized during our discussions on December 3, 1974, in Bethesda, Maryland, the reply to your letter has been delayed to incorporate the points discussed in our meeting.

Item I - Failure to Initiate Normal Shutdown When Limiting Condition for Operations Were Not Met

Each particular item under this heading is considered with the inclusion of an explanation of the actions taken and the associated circumstances. This explanation is followed by a study of the general points of contention and a statement of our management position.

Your concern in each of the instances cited has involved a failure to initiate normal shutdown immediately or failure to take alternate action in a timely manner. With this in mind, the specific time frames involved are reviewed.

Item I.A - Failure to Initiate Shutdown Immediately When Boron Injection Tank Contents Were Out Of Specified Limits

At 1115 on July 1, 1974, it was reported that the boron injection tank boron concentration was 646 ppm above the limit permitted. As reported this is a Limiting Condition for Operation violation and requires initiation of shutdown. Reactor shutdown was initiated at 1201. This constitutes a delay of 46 minutes from the inception of the problem until load was reduced on the plant.

In this case 37 minutes were spent in evaluation of the problem by the plant management and 11 minutes by the operator in final preparations for shutdown. This evaluation was necessary due to the fact that the validity of the sample was questionable. The question arose because the boron injection tank had been recirculated with a boric acid tank which was known to be within specified limits prior to obtaining the boron injection tank sample. However, even though the sample result was believed to be in error (an additional sample taken one hour later confirmed the tank to be within specifications) it was plant management's decision to proceed with plant shutdown. This decision was conservatively based on the assumption that a Limiting Condition for Operation was violated although logically no violation could exist under the existing circumstances.

It is believed that in this event the time utilized in evaluating the situation to assure the problem was properly defined, was justified, and that the proper action was taken. However, in order to avoid this type of citation in the future, the Shift Foremen have been instructed to initiate plant shutdown on reliably reported information and take parallel action to confirm the validity of the sample result.

This is an appropriate point to address the repetitive violation concerning Item I.A. It is correctly pointed out that the boron injection tank boron concentration has been out of specification on several previous occasions. Corrective action has been specified and instituted following each occurrence but violations have persisted. On each occasion more stringent administrative controls have been implemented to preclude the event and to assure immediate detection if the problem recurs. Following the January 3, 1974 incident, controls were increased to require the following:

- a. Sampling the boron injection tank and the boric acid storage tanks on a daily basis (six days per week).
- b. Immediate investigation following any unanticipated tank level changes.
- c. Sampling of the tanks following safety injection pump operation and following any unexpected tank level change.

It is believed that these stringent management measures demonstrate a responsible concern by the management staff.

On each previous occasion the boron concentration violation has resulted from different plant evolutions. Valve seat leakage compounded by clogging of piping runs due to boric acid crystalization have been the principal causes. The present boric acid line heat tracing system has been modified and improved. Leaking valves have been identified and repaired. These actions coupled with additional monitoring of the

system have effectively corrected the line blockage problems. Nevertheless, a potential continues to exist for future concentration violations in the event of equipment malfunction irrespective of management administrative procedures.

The most recent occurrence was not conclusively identified as a boron concentration violation at the time of the incident. As discussed in Item I.A there was evidence to support the conclusion that the sample could be in error. Nevertheless, a conservative approach was taken and the incident was reported and appropriate action taken. Further action has been taken to resample the tanks on a continuous schedule any time a tank is found outside required limits. The sampling and analysis of a highly concentrated boric acid solution is difficult due to precipitation as temperatures are reduced. The narrow range of the required boron concentration also is a complicating factor. An analysis has been made regarding the safety implications of reducing the concentration lower limit to 15,000 ppm, and it has been concluded that this reduction imposes no safety problem. A Technical Specification change was submitted on August 30, 1974, requesting the revised limit for a limited period of time. This change will provide time for evaluation and correction before a Limiting Condition for Operation (LCO) must be declared.

In this case and all others regarding repetitive violations the plant management's position has been one of concern for the problem and its safety implications. Action has been taken as deemed appropriate to rectify the situations and prevent further occurrences. Even though this action has not always proved to be the final solution it is not indicative of an ineffective control system. When a violation does recur it has often been the result of a set of conditions that were not previously apparent. In such cases efforts are made to tighten the controls and visualize any other variable that may not be obvious. It is our intent to continue to fully evaluate each and every violation to the extent required to assure ourselves that all factors under our control have been considered and appropriate action taken to prevent future problems.

#### I.B - Failure to Initiate Shutdown with Two Diesel Generators Out of Service

On July 16, 1974, at 0853 "B" emergency diesel was test run satisfactorily in preparation for disabling "A" emergency diesel for maintenance on a temperature indicator. "A" diesel was then taken out of service at 0855. An ensuing test of "B" diesel at 0900 to confirm its operability resulted in failure of that unit to start. Therefore, both diesels were out of service and a Limiting Condition for Operation was violated. Immediate action was taken to return the "A" diesel to service since it was known to be reliable. This was accomplished by 0919. Therefore, there was a period of 19 minutes in which a Limiting Condition for Operation was violated and plant shutdown was not initiated.

It was apparent that the Limiting Condition for Operation (LCO) was violated at 0900. However, in this case it was known that the "A" diesel was reliable and could be returned to service by cancellation of the clearance and opening the air start isolation valves. The diesel had not been mechanically disabled. The question then was reduced to a comparison of the times involved in returning the diesel to operation versus initiating plant shutdown. The plant management made the decision that the "A" diesel could be returned to service in less time than required for a planned shutdown of the plant. In retrospect, if a normal plant shutdown had been initiated, the reactor power would have been reduced only a few percent during the time required to return the "A" diesel to service. Stable plant conditions were better suited to the situation than subjecting the plant to a load transient unnecessarily with both diesels out of service.

It is believed that in this event the action taken was appropriate and timely. If the "A" diesel had failed to meet its operability requirements when attempting to return it to service, an immediate plant shutdown would have been initiated. However, in order to avoid this type of citation in the future, the Shift Foremen have been instructed to initiate plant shutdown in parallel with action such as restarting the "A" diesel in this event.

I.C - Failure to Timely Reduce Power Range High Flux Setpoint and Shutdown the Reactor Immediately During Power Tilt Ratio of 1.172

The occurrence began at 0521 on July 18, 1974, when control rod L-5 dropped during a periodic test exercise of the control rods. An automatic load runback was initiated by the dropped rod which immediately reduced load to less than 70%.

With this load reduction of 30%, the Technical Specification requirement that core power level be reduced by two percent of rated value for every one percent of indicated power tilt exceeding 1.0 was automatically implemented for a power tilt up to 15%.

As the radial tilt increased, reactor power was further reduced to remain in compliance with the Technical Specification power limits. A radial tilt ratio of 1.172 was identified at 0546. Instrumentation and Control Technicians were called to the site to change the high flux setpoints.

Actual changing of the setpoints began at 0741, which is a time lapse of 1 hour and 55 minutes. This time is not considered excessive since it represents time required for the tilt to develop, for deliberate evaluation of the problem, for I&C technicians to arrive on-site, and for obtaining the proper approvals required by Technical Specifications prior to making a setpoint change. By the time that the setpoint change was physically begun the time limit for correcting the tilt had expired and plant shutdown had been initiated. Reactor shutdown was initiated within the two-hour time limit required by the Technical Specifications.

We believe that the reactor was operated within the limits of the Technical Specification requirements during this event. The citation indicates that the Technical Specification requires that the power range high flux setpoints be reduced within two hours. There is no time element specified in accomplishing the subject setpoint change. In this case the action to accomplish the change was immediately set into motion. The reactor operator and the reactor engineer (who had also been called into assist) monitored the radial tilt and power level to ensure compliance with the reactor power limit during the course of events. The citation also indicates that the Technical Specification requires that the reactor be shutdown immediately if the high flux setpoints are not reduced. The Technical Specification does not state this as an either/or condition but does require that the reactor be shutdown if the tilt condition is not corrected within two hours. This shutdown requirement was accomplished as specified.

The high flux setpoints cannot be reduced immediately. In order to prevent recurrence of this violation, a Technical Specification revision will be submitted prior to January 1, 1975, which will clarify the time limit for continued operation prior to power reduction if the high flux setpoints have not been reduced.

It is not believed that this item is a reflection on effective management control since the plant was operated within the requirements of the Technical Specification.

#### Item I Summary

The alleged ineffectiveness of management in regard to these violations has been defined in your letter as a failure to take immediate required action and failure to take timely remedial action. We do not believe that this is a valid conclusion. As explained above, it is our opinion that effective, logical management control and action was taken in the three cases cited.

It is our philosophy that deliberate problem determination is a prerequisite of safe plant operation and is the prime responsibility of plant management and in particular the Shift Foremen, the Operating Supervisor and the Plant Manager. The Shift Foreman, who is totally responsible for the safe plant operation during his watch, is instructed to notify the Operating Supervisor when a problem exists and a Limiting Condition for Operation violation could result. When a Limiting Condition for Operation is identified there is no question that the Shift Foreman is to initiate plant shutdown.

It should be recognized that the identification of a problem may not be obvious at the time of the occurrence and that a reasonable time may be required to make an adequate deliberate determination. In contrast

to the implied irresponsibility it is believed that this is the only responsible way to conduct safe plant operations and indeed is an effective management control system.

The safe operation of the plant and the welfare of the general public is of utmost concern to our Company and such operation takes priority over all other considerations. To take immediate precipitous action to put the plant in a transient condition at the inception of a questionable situation would in our opinion be irresponsible and could lead to unsafe conditions.

The revised instruction to the Shift Foremen to clarify his responsibility to initiate plant shutdown when a reliable report is received that a Limiting Condition for Operation is not being met should prevent this type of violation in the future. This revised instruction places the full responsibility for confirmation of reported questionable information on the Shift Foreman and eliminates communication with the Operating Supervisor and/or Plant Manager prior to initiating plant shutdown in cases such as high concentration of boric acid reported by laboratory personnel to the Shift Foremen. This revision will reduce the time between reported potential problems and initiation of plant shutdown if required.

#### Item II - Failure to Secure Containment (High Radiation Area)

A previous violation involving maintaining the containment security had occurred on one other occasion (February 5, 1974) and corrective action taken at that time was thought to be sufficient. This did not prove to be the case. However, the similar violation which you referenced as having occurred on October 27, 1972, is out of context. That violation involved briefly opening both air lock doors to permit exiting of two workmen who were trapped in the containment due to a malfunction of the inner air lock door. This incident did not constitute a failure to lock a high radiation area and should not be considered, in our opinion, a lack of adequate management control.

A second violation (June 27, 1974) involving failure to lock the containment pointed out a need for further corrective action. The action consisted of the addition of a second self-closing door for access to the containment. This provides a redundant means of securing the area and a positive locking feature. Additionally, the importance of securing the area and the entrance procedures were reviewed with all plant personnel. We believe that the addition of these positive locking features will alleviate the problem where the administrative controls alone had previously not sufficed. This action was completed in July, 1974, and in our opinion will prevent future occurrence of the same violation.

Item III - Failure to Adhere to Approved Procedures for Operation of Systems and Components

Each item under this heading will be addressed by a description of the circumstances leading up to the alleged violation and an explanation of the actions taken by the responsible personnel.

Item III.A - Failure to Take Corrective Action When Test Readings are Out of Specification

The Periodic Test Procedure PT-1.3, Nuclear Instrumentation - Source and Intermediate Range, is a test which is performed for administrative purposes only as a conservative operating practice. PT-1.3 is not a requirement of the Technical Specifications, as opposed to Periodic Test Procedure PT-1.1, Nuclear Instrumentation - Source, Intermediate and Power Range, which fulfills the Technical Specification test requirements of Table 4-1. The purpose of PT-1.3 is to provide additional verification of the response of the circuitry to test signals. It verifies the proper operation of bistable actions related to alarms and reactor trips. It is performed biweekly during power operation and prior to reactor shutdown. The Acceptance Criteria in PT-1.3 only require specified tolerances on those actions related to bistable actions. In each of the nine tests referred to in the citation, the specified acceptance criteria were met demonstrating proper bistable operation and that the test was acceptable in accordance with the purpose of the procedure. The value cited as being out of specifications was not out of specification as outlined in the appropriate technical manual supplied by the vendor.

The test procedure will be modified to clarify the requirements of the test.

Item III.B - Failure to Set Particulate Monitor Alarm Setpoint at a Value Consistent with Requirements

For the period August 19 to 22, 1974, the alarm setpoint for R-11 was incorrectly set as stated in the citation resulting in a violation of the requirements of Plant Standing Order No. 4. This standing order contains procedures for adjusting all Radiation Monitoring Setpoints. As a result of the above violation, Health Physics Procedure No. 15 has been revised to require that the Radiation Control and Test Technician notify the Shift Foreman when the Containment Vessel atmosphere samples are analyzed so that R-11 and R-12 setpoints may be readjusted. The Shift Foremen were notified in writing on November 25, 1974, of the need to strictly adhere to Standing Order No. 4 in all respects. The requirements of the Order will remain under the close scrutiny of plant supervision to avoid future violations of this nature.

Item III.C - Inadequate Maintenance of Shift Records of Operations

During the exit interview following this inspection, the general comment of the inspectors was that the plant operating logs, in particular the Control Operator's Narrative Log, should be more complete and that more detailed information should be supplied. The Control Operator's Log is not intended to contain all changes such as generator output, reactor power level, and control rod position. These items are included on other official records maintained by the control operator on strip charts or hourly logs.

The jumper log contained records of several jumpers which had been removed. None of these affected nuclear safety. The jumper log was reviewed and made current on August 22, 1974.

We have and shall continue to emphasize to our operating personnel the importance of the logs as records and as indicators of the quality of our operations. The Operating Supervisor has discussed these points in detail with the Shift Foreman in group sessions, emphasizing their responsibility toward maintenance of adequate and correct shift records in accordance with the Plant Administrative Instructions. By stressing and re-emphasizing these needs and concerns, management expects the quality of the logs to continue to improve, and will place this program under closer management scrutiny to ensure such improvements are indeed taking place.

Item IV - Failure to Maintain Records of all Calculations of Estimated Critical Position

During the morning of August 12, 1974, three approaches to criticality were performed following a reactor trip from 100% power. On the first two startups, criticality had not been achieved when the control rods were 500 pcm past the estimated critical position (ECP). As directed by approved procedures, in each case, the reactor was returned to hot shutdown, and the ECP was recalculated. On the third startup, criticality was successfully achieved, and the plant was returned to power. The shift personnel incorrectly assumed that the ECP's for the first two startups were void and discarded them, retaining only the final ECP under which criticality was attained.

Operating personnel have been notified that records of this type are official plant records and the requirement for retention of all official plant records has been re-emphasized. Shift Foremen have been instructed to increase their review and supervision of all shift records.



December 17, 1974

However we do not agree that retaining of the ECP's for five years is a Technical Specification requirement. Technical Specification 6.5.1.a states that records of normal plant operation, including power levels and periods of operations at each power level be retained for five years. The ECP form is used as an administrative aid to the operators and was not developed to meet a Technical Specification requirement. We agree that the ECP's should have been retained as good operating practice, however, we disagree that discarding the two ECP's in question is a violation of the Technical Specification.

In conclusion, Carolina Power & Light Company is fully cognizant of the significance of not accomplishing actions required by the Technical Specifications in an immediate or timely manner following violations of Limiting Conditions for Operation. However, we disagree with the Commission that the incidents cited in Section I and II above are a sign that our management control system to prevent repetitive occurrence of violations is ineffective, as you state, and we object to the implication that we are irresponsible in our methods of preventing deficiencies that lead to LCO's. We are confident that the action taken will strengthen our administrative processes and assure the continued safe operation of our plant.

Yours very truly,



E. E. Utley  
Vice-President  
Bulk Power Supply

NBB:mvp

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