

DUKE POWER COMPANY

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October 25, 1984

Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: McGuire Nuclear Station
Docket Nos. 50-369

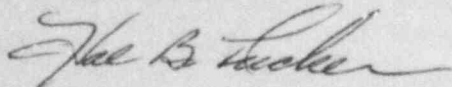
Reference: RII:WTO
NRC/OIE Inspection Report 50-369/84-10
Notice of Violation Concerning T. S. LCO -
Inoperable Charging Pump (EA 84-72)

Gentlemen:

Pursuant to 10CFR 2.201, please find attached a response to violation
50-369/84-10-01 which was identified in the above referenced inspection report.

Duke Power Company does not consider any information contained in this report to
be proprietary. Note that the event resulting in this violation was the subject
of NRC/OIE Information Notice 84-46.

Very truly yours,



Hal B. Tucker

PBN/mjf

Attachment

cc: Mr. J. P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W. Suite 2900
Atlanta, Georgia 30323

Mr. W. T. Orders
Senior Resident Inspector - NRC
McGuire Nuclear Station

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DUKE POWER COMPANY

McGuire Nuclear Station

Response to NRC/OIE Inspection Report 50-369/84-10

Violation 50-369/84-10-01, Severity Level IV:

Technical Specification (TS) 6.8.1.a requires that written approved procedures be established and implemented covering safety-related equipment control referenced by Regulatory Guide 1.33, Revision 2. This requirement includes de-energization and re-energization of Emergency Core Cooling and Chemical and Volume Control Systems. Station Directive 3.1.9 requires the licensee to verify operability of safety-related equipment on a daily basis.

License Condition, paragraph 2.c (11)(c), requires that the licensee provide and maintain adequate procedures to verify correct performance of operating activities, in accordance with NUREG-0737, Item I.C.6. Implicit in this requirement, is that the licensee maintain and follow equipment control procedures and perform independent verification on equipment important to safety. Operations Procedure OP-O-A-6100-0 and the Operations Management Procedure (OMP) 1-6 govern control of removal and restoration of station equipment and independent verification.

Technical Specifications 3.1.2.2, 3.1.2.4, and 3.5.2 require operability of both centrifugal charging pumps when the unit is in Modes 1 through 3. If only one centrifugal charging pump is operable, then the inoperable pump shall be made operable within 72 hours or the unit is to be in HOT STANDBY in the next six hours.

Contrary to the above, the TS requirements and the license conditions were not met, in that:

1. On February 13, 1984, when removing the centrifugal charging pump 1A from service, the licensee failed to use procedure OP-O-A-6100-09, Removal and Restoration of Station Equipment, when de-energizing the 4160 volt pump breaker as required by OMP 1-6.
2. On February 13, 1984, when returning the centrifugal charging pump 1A to service, the licensee failed to fully rack in the 4160 volt pump breaker to the "CONNECT" position to make electrical continuity. Furthermore, the licensee failed to perform local independent verification of the electrical breaker position following its intended restoration to service as required by OMP 1-6.
3. During routine daily checks performed between February 13, 1983 and February 20, 1984, as required by Station Directive 3.1.9, the centrifugal charging pump 1A electrical breaker was not properly verified to be in the "CONNECT" position.

Because Unit 1 was in power operation (Mode 1) when these violations occurred, the requirements of TS 3.1.2.2, 3.1.2.4, and 3.5.2 were not met in that the centrifugal charging pump 1A remained inoperable for a period in excess of 72 hours and the unit was not placed in HOT STANDBY as required.

Response:

1. Admission or denial of the alledged violations:

Duke Power Company admits the event occurred as initially reported in LER 369/84-03.

2. Reason for the Violations if admitted:

This violation is attributed to Personnel Error because the circuit breaker was improperly connected (was not in the fully "CONNECT" position - the breaker racking lead screw was approximately one half turn short of the "CONNECT" position) and independent verification of the breaker position was not properly performed while restoring the centrifugal charging (NV) pump to service after minor maintenance as described in the LER and NRC/OIE Inspection Report 50-369/84-15. The breaker was also improperly verified to be in the "CONNECT" position once a day by different Nuclear Equipment Operators (NEO's) during rounds.

NV Pump 1A breaker is a drawout circuit breaker that can be disconnected from the bus by moving the breaker physically away from the bus. This is done by turning a worm gear (racking screw) which rotates levers attached to the breaker. These levers push against the cubicle to move the breaker toward or away from the bus. To prevent moving a circuit breaker that is closed, or closing a circuit breaker that is being moved; a mechanical interlock is used. This interlock consists of a shaft and levers which must be actuated to move the breaker. When the racking release lever is moved to the left, which releases the racking screw, the breaker is mechanically tripped and prevented from closing. As the breaker is moved to one of the three discrete positions (CONNECT, TEST, DISCONNECT), the racking release lever moves to the right; locking the racking screw and freeing the trip mechanism. The racking release must be in the lower or right position for breaker operation.

The NV Pump 1A breaker was required to be disconnected to obtain a routine oil sample. Only one Nuclear Equipment Operator (NEO) was dispatched to disconnect the breaker and act as Personnel/Equipment protection. This appears to be contrary to Operation Management Procedure (OMP) Section 1-6, 7.2, which states "When independent verification is required for equipment that is removed from service, the two persons performing the task shall work together"

After the oil sample was removed, the Shift Supervisor notified the NEO to return the breaker to the 'CONNECT' position. The NEO then engaged the racking crank and pushed the racking release lever to the left, and rotated the racking crank clockwise until the racking mechanism automatically stopped at the 'TEST' position. The racking release lever was again pushed to the left and the racking crank was rotated clockwise until resistance was felt. The control power fuse was then replaced providing a closed status light to the Control Room. An Assistant Shift Supervisor and a Nuclear Control Operator independently verified the breaker to be in the 'CONNECT' position by the indication of status lights on the control board. This was an invalid verification due to the fact that control power is supplied to the circuit breaker through the secondary disconnecting device. This device consists of a sliding contact strip with one part

mounted on the circuit breaker and the other part mounted on the back of the cubicle at the floor. Contact between the two parts begins when the circuit breaker is moved to the 'TEST' position and continues as the breaker is moved to the 'CONNECT' position. When the operator in the Control Room verified that one of the status lights was lit, he could not say whether the breaker was in the 'TEST' or 'CONNECT' position, or somewhere in between. This appears to be a contrary to OMP Section 1-6, 8.2.B, which states "Verification of the availability of power to components powered from a 4160V, or 600V load center breaker will be done by checking the breaker and control power fuse position locally".

To perform a valid independent verification these four items must be ensured:

- (1) Indications on the floor of the circuit breaker housing correspond to the markings on the circuit breaker.
- (2) The racking release lever is in the correct position.
- (3) The spring motor disconnect toggle switch is in the "ON" position and the springs are charged.
- (4) The control power fuse is in place.

However, these four items were not specifically covered in existing procedures.

The NEO did not check the position of the racking release lever after the breaker was apparently placed in the 'CONNECT' position. If the racking release lever is not in its correct position, the breaker is in a tripped state and the contacts can not be closed.

The breaker was verified to be in the 'CONNECT' position once per day for seven days by NEOs performing the Nuclear Equipment Operator Turnover Checklist. This daily check failed to find that the breaker was not completely in the 'CONNECT' position.

A contributing factor was the lack of adequate training on the 4160V breaker racking mechanism for the NEOs. The NEO did not look at the racking release lever to ensure that it was in the correct position after racking the breaker to the 'CONNECT' position. The NEOs who completed rounds to verify the actual breaker to be in the 'CONNECT' position also did not look to ensure the position of the racking release lever. Another contributing factor may have been the lack of a procedure to cover the connecting/disconnecting of breakers.

Additional information on the root causes and contributing factors are in NRC/OIE Inspection Report 50-369/84-15.

3. Corrective Steps which have Been Taken and the Results Achieved:

The breaker was racked in to the 'CONNECT' position, the racking release lever verified to be in the correct position, and the pump tested and placed in service. Once it was determined that the 4160 V breaker was not properly racked in, verification that all other breakers were properly racked in was performed to determine that the same problem did not exist elsewhere.

It is Duke's standing practice to immediately verify the scope of any problem found at the plant to the extent we can at the time so our immediate corrective action will be effective. Duke will continue to emphasize this good practice. Further events of this type have not occurred. Additional corrective actions are described in NRC/OIE Inspection Report 50-369/84-15.

4. Corrective Steps Which Will be Taken to Avoid Further Violations:

This event has been thoroughly covered with all appropriate personnel, and personnel have been reminded of the importance of independent verification and daily verification. Disciplinary actions have been taken against appropriate personnel.

Procedures have been developed with sign off steps for operating safety related breakers.

Operation Management Procedures have been developed detailing operation and surveillance of breakers. A periodic test procedure has been developed to ensure breaker availability. An operating procedure has been developed to guide the operator through breaker operation (connecting/disconnecting).

Removal and Restoration Procedures shall be required for all safety related equipment to document independent verification even if the equipment is expected to be out of service for only a short period of time (Ref. the attached February 27, 1984 memorandum).

Duke currently integrates various test requirements to minimize the number of times equipment is removed and restored from service to some extent and will, through integrated scheduling, continue to combine tests where practical to reduce the opportunity for mistakes and to perform total testing more effectively.

The experience gained and corrective actions taken at McGuire to upgrade the independent verification program, its implementation and the level of employee awareness, has already or will be shared with Oconee and Catawba so their programs for independent verification will have an equivalent standard of excellence.

Additionally in response to the request made to address the adequacy of post-maintenance testing, it is felt that current post-maintenance testing as identified in applicable work requests at McGuire is adequate.

Additional Corrective Actions are Described in NRC/OIE Inspection Report 50-369/84-15.

5. Date when Full Compliance will be Achieved:

The station is presently in full compliance with the Technical Specification requirements and license conditions in this area.

February 27, 1984

MEMORANDUM

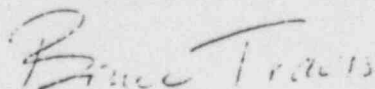
To: Shift Supervisors
Assistant Shift Supervisors
Nuclear Control Operators
Assistant Nuclear Control Operators
Nuclear Equipment Operators

Subject: Independent Verification

Recently a Centrifugal Charging pump was out of service for seven days without Operations being aware of this fact. The pump was removed from service for an oil analysis sample. Because of the short time period the pump was expected to be out of service, the operator acted as a red tag and no Removal and Restoration procedure was used. Proper independent verification was not used on either removal or restoration.

A procedure is required for all work on safety-related equipment. When a component is expected to be out of service for a short period of time (i.e. oil analysis sample, air handling unit belt tension check, etc.), an operator may act as a red tag to minimize the required paperwork; however, a Removal and Restoration procedure shall be used to identify and document independent verification.

Remember that each individual has an equally important part in making the independent verification program work. If you have any questions concerning independent verification and how it works, re-read Operations Management Procedure 1-6 "Independent Verification." If you still have questions, ask your supervisor or Bruce Travis. Your support is needed to make independent verification a method of improving the quality of safety-related activities.



Bruce Travis
Operating Engineer
McGuire Nuclear Station

BT/pc

CC: M. D. McIntosh
G. W. Cage
Duty Engineers
P. F. 9.2