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85 SEP 18 A9:41

September 13, 1985

Dr. J. Nelson Grace, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Subject: McGuire Nuclear Station
Docket Nos. 50-369, 50-370

Reference: RII:WTO
NRC/OIE Inspection Report 50-369/85-10, 50-370/85-11

Dear Dr. Grace:

Pursuant to 10 CFR 2.201, please find attached responses to violations which were identified in the above referenced Inspection Report.

Very truly yours,

H.B. Tucker/bs

Hal B. Tucker

WHM/hrp

Attachment

cc: Mr. W. T. Orders
NRC Resident Inspector
McGuire Nuclear Station

IE01 1/1

Duke Power Company
McGuire Nuclear Station
Responses to Violations in IE Inspection Report
50-369/85-10 and 50-370/85-11

Violation 50-369/85-10-03 & 50-370/85-11-03, Severity Level IV

Technical Specification (TS) 3.8.2.1 requires that all four DC sources be operable in Modes 1, 2, 3, and 4.

TS 4.8.2.1.2b states that once per 92 days each 125-volt battery connected cell demonstrate that the float voltage is greater than or equal to 2.13 volts. TS 4.8.2.1.2a requires the float voltage be checked for each pilot cell each seven days.

TS 4.8.2.1.2d states that each 18 month each 125-volt battery bank be demonstrated operable by verifying that it will supply a dummy load of at least 440 amperes for 60 minutes.

Contrary to the above:

1. Contrary to TS 3.8.2.1 and TS 4.8.2.1.2b, battery EVCA was technically inoperable from May 29, 1982 until February 5, 1985 because the actual battery float voltage was not monitored for cells 29 and 45. The apparent surveillance discrepancies were identified on February 1, 1985 and corrective action on battery EVCA was not initiated until February 5, 1985.

2. Contrary to TS 3.8.2.1 and TS 4.8.2.1.2d, on February 7, 1985, all four Vital DC sources were found to be technically inoperable because surveillance testing performed failed to demonstrate system operability in that the March and April 1984 service discharge tests for batteries EVCA, EVCB, EVCC, and EVCD were not performed at the current and time specified by TS 4.8.2.1.2d.

Response to Part 1:

1. Admission or denial of the alleged violation:

   Duke Power agrees that the violation occurred as stated.

2. Reasons for the violation:

   This violation occurred due to a procedural inadequacy in that it did not specifically address removing single cell chargers prior to conducting surveillances.

   Single cell charging of cells 29 and 45 did affect the equilibrium voltage which was normally present across these cells under float conditions. Quarterly surveillance tests, particularly for individual cell voltages, were biased by the single cell charger output voltage, thus tending to invalidate the surveillances for cell 29 and 45.

   Single cell chargers were being used in an effort to improve low specific gravity readings identified during surveillances. The possibility of the chargers invalidating individual cell voltage surveillance readings was not realized.

3. Corrective steps which have been taken and the results achieved:

   Single cell chargers have been removed and surveillance requirements satisfied.

4. Corrective steps which will be taken to avoid further violations:

   Procedure changes have been made which require chargers to not be in service when surveillance readings are taken.

5. Date when full compliance will be achieved:

   McGuire Nuclear Station is presently in full compliance.

Response to Part 2:

1. Admission or denial of the alleged violation:

   Duke Power agrees that the violation occurred as stated.

2. Reasons for the violation:

   The service discharge tests as specified were not performed at the current and time as specified by TS 4.8.2.1.2d due to an inadequate procedure. However, the tests as performed were adequate to demonstrate the acceptability of the battery to meet the current Technical Specification requirement.

3. Corrective steps which have been taken and the results achieved:

   The service discharge test requirements have again been demonstrated by the performance discharge test (as allowed by TS 4.8.2.1.2e) in May and June, 1985.

4. Corrective steps which will be taken to avoid further violations:

   The service discharge test procedure has been rewritten to reflect the present TS 4.8.2.1.2d requirements.

5. Date when full compliance will be achieved:

   McGuire Nuclear Station is presently in full compliance.

Violation 50-369/85-10-01 & 50-370/85-11-01, Severity Level IV

Technical Specification 6.8.1 requires that procedures be established, implemented and maintained covering the operation and maintenance of safety-related equipment.

Installation drawing MCM 1350.01-1, Rev. A, dated March 12, 1976, specifies a minimum clearance of one-eighth inch between the end cells and the battery rack.

Contrary to the above, procedures related to battery surveillance and maintenance were inadequate in that:

1. Instructions/guidance relevant to monitoring and duration of single cell charging were not provided resulting in the battery being charged at a voltage higher than recommended by the Vendor for a period of two years.

2. Procedure IP-0-A-3061-01, 125 Volt Vital Battery Weekly/Monthly Inspection and Prevention Maintenance, provided inadequate guidance which allowed the inclusion of an unattached cell in battery EVCA six-cells average temperature calculation on February 23, 1984 and May 19, 1984.

3. Procedure IP-0-A-3061-01 was not followed on January 17, 1985, when the temperature variance of six cells varied by 9F, exceeding the 5F acceptance criteria of the procedure, and corrective action was not taken. Additionally, water was added to battery EVCA and an equalizing charge was not performed as specified.

4. Procedure IP-0-A-3061-18, Installation and Removal of Jumpers on Battery Cells, was inadequate in that post-modification testing of the newly configured battery was not specified. Additionally, the procedure referred to Drawing MC 1705-01 for technical justification for jumper installation. Drawing MC 1705-01 had been revised in July 1984 and was no longer applicable.

5. Batteries were installed and/or maintained such that end cells were pressing against the battery rack end plate and did not have the 1/8-inch clearance specified by MCM 1350.01-1.

Response to Part 1:

1. Admission or denial of the alleged violation:

   Duke Power agrees that the violation occurred as stated.

2. Reasons for the violation:

   This violation resulted from inadequate communication between various levels of management within the Instrumentation and Electrical (IAE) Group, "intentions" that were not turned into actual corrective actions, and failure to implement certain procedural controls.

3. Corrective steps which have been taken and the results achieved:

   The single cell chargers have been removed and new replacement cells installed.

4. Corrective steps which will be taken to avoid further violations:

   A total rewrite of the procedure which provides guidance for use of single cell chargers is occurring.

5. Date when full compliance will be achieved:

   Presently no single chargers are in use at McGuire. The procedure revision will be complete by October 1, 1985. McGuire Nuclear Station is presently in full compliance.

Response to Part 2:

1. Admission or denial of the alleged violation:

   Duke Power agrees that the violation occurred as stated.

2. Reasons for the violation:

   The procedure was inadequate to cover the jumpering of a cell.

3. Corrective steps which have been taken and the results achieved:

   Subsequent temperature readings have been taken only on connected cells.

4. Corrective steps which will be taken to avoid further violations:

   Procedure changes have been made to ensure temperature readings are taken for cells in service.

5. Date when full compliance will be achieved:

   McGuire Nuclear Station is presently in full compliance.

Response to Part 3:

1. Admission or denial of the alleged violation:

   Duke Power agrees that the violation occurred as stated.

2. Reasons for the violation:

   Surveillance on 1/17/85 included cell 29 as a pilot cell when taking cell temperature readings. This resulted in a temperature variance of 9°F due to single cell charging of cell 29.

   The procedure states "if maximum differential temperature exceeds 5°F, investigate cause. Document corrective action on the work request".

   The cause was known to be that single cell charging of cell 29 was underway. The corrective action was that the responsible I&E Supervisor and planner had already made plans to change the marginal cell during the back to back Unit 1 and Unit 2 outages. This corrective action should have been documented on the work request but was not.

3 Corrective steps which have been taken and the results achieved:

The single cell battery charger has been removed and the cell replaced.

4. Corrective steps which will be taken to avoid further violations:

Corrective action has been taken to resolve issues involving procedure adherence identified in the NRC inspection report.

5. Date when full compliance will be achieved:

McGuire Nuclear Station is presently in full compliance.

Response to Part 4:

1. Admission or denial of the alleged violation:

Duke Power denies in part this portion of the alleged violation. It is Duke's philosophy that retest requirements are best handled on a case by case basis and not required by the procedure. The battery at the time of question was declared inoperable due to a low specific gravity reading for one cell only. The cell in question was then jumpered out and the intercell connection resistance checks were made to check the link and the battery then returned to service.

It was felt that repeating the quarterly surveillance again was not required because the status of the other cells was not in question and would not have been adversely affected by removing cell 9 from service by jumpering it out.

In regard to the reference to drawing MC 1705-1, Duke Power admits this portion of the violation.

2. Reasons for the violation:

The I&E group at McGuire failed to revise the procedure when the drawing was revised in July 1984.

3. Corrective steps which have been taken and the results achieved:

The procedure was not used after the drawing was revised to install a jumper. The jumper had been installed earlier.

4. Corrective steps which will be taken to avoid further violations:

The procedure has been revised to prevent any further violations.

5. Date when full compliance will be achieved:

McGuire Nuclear Station is presently in full compliance.

Response to Part 5:

1. Admission or denial of the alleged violation:

   Duke Power agrees that the violation occurred as stated.

2. Reasons for the violation:

   The minimum 1/8" clearance was a maintenance convenience and not a seismic concern. A maximum allowed clearance was determined necessary to be no more that 1/4" to ensure integrity of the battery/rack system is maintained during a seismic event.

3. Corrective steps which have been taken and the results achieved:

   MCM 1350.01-1 has been changed after the determination was made by the manufacturer.

4. Corrective steps which will be taken to avoid further violations:

   Changes to procedures have been made to require inspection of the clearances of the battery/rack.

5. Date when full compliance will be achieved:

   McGuire Nuclear Station is presently in full compliance.

Violation 50-369/85-10-02 & 50-370/85-11-02, Severity Level IV

10 CFR 50.59 requires written safety evaluations of changes in the facility as described in the Safety Analysis Report which provides the bases for the determination that the change does not involve an unreviewed safety question.

Contrary to the above, the written safety evaluation performed for Operation of Single Cell Battery Charger, that was employed for attaching single cell chargers to cells 29 and 45, was deficient in that it did not include the bases for seismic considerations, maintaining voltage at higher potential than recommended by the vendor, or maintaining independence of class IE equipment. This information was necessary to determine whether an unresolved safety question was present.

Response:

1. Admission or denial of the alleged violation:

   Duke Power agrees that the violation occurred as stated.

2. Reasons for the violation:

   The written safety evaluation was deficient. At the time of preparation of the procedure, an evaluation was made but was not documented.

3. Corrective steps which have been taken and the results achieved:

   Safety evaluations have been made in areas questioned and an unresolved safety question was determined not to be present.

4. Corrective steps which will be taken to avoid further violations:

   A complete rewrite of the single cell charger procedure is being performed and a full written safety evaluation will be completed.

5. Date when full compliance will be achieved:

   Corrective actions will be complete by October 1, 1985. McGuire Nuclear Station is presently in full compliance.

McGUIRE NUCLEAR STATION
RESPONSE TO DEVIATION
50/369/85-10-04 & 50/370/85-11/04

Deviation:

The following deviation was identified during an inspection conducted on February 7 - July 3, 1985.

Final Safety Analysis Report, Section 8.3.2, states that battery performance discharge tests will be conducted in accordance with IEEE 450-1972.

IEEE 450-1972 requires that performance discharge tests be conducted at a determined discharge rate until the battery reaches a minimum voltage determined by the number of connected cells and the minimum voltage per cell identified in the vendor manual.

Industry Standard IEEE 450-1972 and the battery vendor manual recommends an equalizing charge be conducted when the specific gravity of any individual cell drops 0.010 or more below the average of all cells, or the individual cell voltage (ICV) of any cell varies by 0.04 volts or more from the average ICV within the battery or any cell ICV is below 2.13 volts.

Contrary to the above:

1. Performance discharge tests conducted in January 1980 on all four vital and Instrument Control Batteries discharged the batteries at only a one-hour rate for one hour.

2. Equalizing charges have not been conducted on the Vital and Instrument Control Batteries in the past two years except as restoration from a service discharge test. Battery EVCA met the reference criteria for requiring an equalizing charge in nearly all months in the past two years.

Response:

1. Performance discharge tests have been rewritten in accordance with IEEE 450-1972 and IEEE 450-1980 (FSAR is being changed from IEEE 450-1972 to IEEE 450-1980). Tests have been performed on all four vital batteries using the newer procedure (in accordance with IEEE 450-1972 and IEEE 450-1980). The rewritten procedure will prevent this deviation from reoccurring. The procedure was rewritten on 5/17/85. The tests were performed in May and June 1985.

2. Equalizing charging has since been performed on battery EVCA. Procedure changes to prevent further deviations have been written and are presently being approved. The changes will be incorporated by 10/1/85.

McGUIRE NUCLEAR STATION
RESPONSE TO NRC CONCERN
ON MANAGEMENT CONTROL SYSTEM

Concern:

In addition to the need for corrective action regarding these specific violations, we are concerned, as we stated during the Enforcement Conference, about the implementation of your management control systems that permitted their occurrence. Additionally, a particular concern was management's delay of verifying the operability of battery EVCA after being informed of the apparent surveillance and maintenance discrepancies on February 1, 1985. Consequently, in your reply, you should describe in particular those actions taken or planned to improve the effectiveness of your management control system.

Response:

Issue of management controls which permitted occurrence of vital battery violations:

Station management has realized the need to improve management controls as a result of the vital battery violations.

Additional management controls or changes to existing controls include:

* Increased emphasis on technical concerns (versus administrative) issues in weekly IAE staff meetings.

* Daily 8:15 station status meeting to identify technical problems and define accountability and priority.

* Daily 8:40 IAE status meeting to discuss needed follow-up on specific IAE concerns (This meeting immediately follows the 8:15 station status meeting.)

* Increased emphasis on procedural adherence concerns including emphasis by station manager. IAE engineer's personal involvement with individual IAE crew meetings and IAE shop meetings to discuss issues of communication, procedural adherence concerns, etc.

* Increased emphasis on review of open (pending action) work requests (single cell charging of EVCA occurred for > 2 years under an open work request).

* Additional station specific training being developed on vital batteries to address lessons learned.

* Systematic training & qualification program (ETQS) being developed to ensure qualification of personnel as well as identify training deficiencies.

* Additional station training to be given to address requirements of qualified reviewer (includes additional emphasis on performing adequate safety evaluations).

* IAE engineer and coordinator have counseled with specific supervisor concerning inadequate job performance and inadequate communication.

* Lessons learned to be shared with all IAE personnel.

Issue of management delay of verifying operability of EVCA after being informed of apparent violations.

Background: Feb. 1, 1985 (Friday) - Surveillance concerns identified
Feb. 5, 1985 (Tuesday)- Single cell chargers removed.

Response: Two courses of action were instituted in parallel upon notification of concerns by NRC PAT Team:

1) Assessment of the many technical concerns brought up by inspection team. This assessment was complicated by such items as:

   * Discussions with battery vendor.
   * Discussions with Duke Design Engineering & equipment engineers and General Office.
   * Lack of industry guidance concerning single cell charging of a battery in service.
   * The number of individual concerns that required addressing.
   * Time span enveloped a weekend (station personnel worked through weekend addressing identified concerns, including discussions with resident NRC inspector).
   * Review of maintenance practices and procedures of concern.

2) Evaluation of availability of spare cells in case needed.

In hind sight things could have been done differently, however there were many complicated issues which required evaluation and input from many diverse sources in order to develop a sound course of action. Only recently have all the technical issues which were identified by the inspection been fully understood.

Technical analysis by Design Engineering has further supported decisions made during the time frame in question. This is evidenced by the fact that EVCA was shown capable of fulfilling its design requirements during the time frame in question.

The NRC's concern over timely action is understood and will be an "experience" factor in future action on similar concerns.