



Commonwealth Edison

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September 3, 1986

Mr. James G. Keppler
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Dresden Station Units 2 and 3
Response to Inspection Report Nos.
50-237/86015 and 50-249/86017
NRC Docket Nos. 50-237 and 50-249

Reference: C. J. Paperiello letter to Cordell Reed
dated June 30, 1986.

Dear Mr. Keppler:

The referenced letter documents the results of a special safety inspection conducted by Messrs. M. Ring, A. Dunlop, Z. Falevits, W. Key, J. Bjorgen and and P. Eng of your office on May 19 through May 23, 1986, of activities at Dresden Nuclear Power Station Units 2 and 3.

During the course of that inspection, certain activities appeared to be in noncompliance with NRC requirements. Attachment A to this letter contains our response to the violation and unresolved item mentioned in the above referenced document.

The referenced letter also identified a number of deficiencies regarding modification installation on Unit 2. Attachment B to this letter summarizes the actions we've taken in response to those findings.

If there are any further questions regarding this matter, please contact this office.

Very truly yours,

M. S. Turbak
Operating Plant Licensing Director

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Attachment

cc: NRC Resident Inspector - Dresden

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Attachment A
Commonwealth Edison Company
Response to Notice of Violation

Violation #1

10CFR 50, Appendix B, Criterion VI, as implemented by Commonwealth Edison Quality Assurance Manual, Quality Requirement 6, requires that a document control system will be used to assure that documents such as drawings are reviewed for adequacy and approved for release by authorized personnel. Also, this system includes as-built drawings and provisions to assure as-built drawings are kept updated, properly maintained, and controlled.

Contrary to the above, examples of drawings have been found that do not reflect proper control of as-built drawings and assurance that as-built drawings are being kept updated to reflect the condition of the plant (237/86015-01(DRS); 249/86017-01(DRS)). This violation is similar to a previous violation (237/86001-02(DRS); 249/86008-01(DRS)) and a previous open item (237/86005-001(DRS); 249/86008-01(DRS)) issued at Dresden.

Discussion

The inspector's review of drawings in the field as mentioned in Section 4 of the Inspection Report gave examples of drawing problems:

4.a.

Drawing problems occur because modifications are not completed in chronological order.

4.a.(1)

The drawings for M12-2-84-8 should have been listed as "Completed Hold File" in the record retention vault but due to inadequate communications with the Modification Group the drawings were still marked "For Construction Only".

4.a.(2)

Drawing 12E-2697 showed an internal conductor connecting terminal EE-10 to device CPT but this conductor was not installed in the field.

4.a.(3)

Drawing 12E-2697 showed only one internal conductor attached to terminal EE-13, however, field inspection found a second conductor attached to terminal EE-13.

4.a.(4)

Drawing 12E-2758B shows a jumper between terminals DD-19 and DD-20 but the inspector did not see it.

4.a.(5)

From a sample of four Critical Drawings, drawing 12E-3437A, Rev. P, did not reflect the as-built plant condition.

4.a.(6)

Drawing 12E-2758B, Rev. AB, shows a jumper between points 7 and 9 of relay 1530-202, however, no jumper was found between these spare contacts.

4.a.(7)

Drawing 12E-2758B, Rev. AB, shows wire FF-71 on both sides of terminal block DD-21 and wire FF-72 on both sides of terminal DD-22, however, only the internal sides of DD-21 and D-22 are wired.

4.a.(8)

Drawing 12E-2758B, Rev. AB, shows AQ-2 connected to point DD-54 but field inspection found AH-2 connected to DD-54.

4.b.(2)

The inspector felt that the drawing control system for 12E-2697 was too complicated to ascertain the as-built drawing.

4.b.(2)(a)

An improper green conductor splice was found on Cable No. 22839 approximately 18 inches away from point EE-7 on drawing 12E-2697.

4.b.(2)(b)

On panel 902-3, the metal protective cover over device "GHC" was observed to be in contact with exposed resistor and capacitor.

4.b.(3)(a)

Conductors terminated to points DD-89 and DD-90 on drawing 12E-2758B were observed to be very loose.

4.b.(3)(b)

Loose lug on point DD-84 of drawing 12E-2758B.

4.b.(3)(c)

Per drawing 12E-2758B, Cable No. 22646 red conductor was found terminated to point DD-80 in panel 902-33, however, the red conductor on Cable No. 22646 is a spare conductor.

4.b.(4)

Per drawing 12E-3437, a balloon including a portion of the LPCI pump start circuitry which was removed faded such that it was confusing as to whether this circuitry was removed.

Corrective Action Taken and the Results Achieved

4.a

To assure that out-of-service modification installations are thoroughly reviewed and controlled, DAP 2-7, which controls drawing revisions which might impact outstanding modifications, has been revised. Attachment B of DAP 2-7 notifies the modification engineer that a drawing revision which may impact a currently outstanding modification has been received by Central File. This form requires that the engineer review the revised drawing(s) and determine whether it could potentially impact the installation of his modification. If it does, DAP 2-7 requires that the

Tech Staff Supervisor assign a second, independent engineer to conduct an additional review of the affected drawings and modifications. This process will ensure that out-of-sequence modifications are thoroughly reviewed by the appropriate technical personal prior to installation.

4.a.(1)

A change to DAP 2-3, "Operation and Control of the Central and Satellite Files", has been initiated to eliminate verbal communications between Central File and the Modification Group regarding status of a modification. A form to document status will be issued to Central File instead of a verbal communication.

4.a.(2)

A DCR was written to remove CPT designation on drawing. CPT was a device removed in the early days of the plant.

4.a.(3)

A DCR was written to add a jumper from EE-13 to EE-14 as in the field.

4.a.(4)

After re-check of the terminals, a flat metal jumper was found but was hidden from view by other wiring. The drawing is correct.

4.a.(5)

Drawing 12E-3437A, Revision P did not match the field installation because a previous modification (reflected by drawing revision K) had not yet been installed. The portion of the drawing modified by revision K should have been "greened out" on the current critical drawing (Revision P) to indicate the modification was not yet completed. A new, corrected critical drawing has been provided in the control room.

4.a.(6)

A DCR was written to remove the jumper from the drawing.

4.a.(7)

Following verification that the field wiring was correct, a DCR was written to correct the drawing for terminal blocks DD-21 and DD-22.

4.a.(8)

Per Modification M12-2-84-8, drawing 12E-2758B was changed under Revision "AH" to have point DD-54 connected to relay AH-2. Therefore, the actual installation in the field is correct and consistent with the current drawing, Revision "AH".

4.b.(2)

We understand that the existing drawing control system is complex and somewhat cumbersome to use. However, when used correctly, the current drawing control system fulfills the requirements of 10 CFR 50, Appendix B, Criterion VI.

4.b.(2)(a)

The green conductor was replaced with a white conductor and a new splice was made according to current procedures per a work request package.

4.b.(2)(b)

Per a work request, the cover on circuit board GHC was removed. This cover is not necessary for the proper operation of the circuit board.

4.b.(3)(a)

Per a work request, terminal screws DD89 and DD90 were tightened.

4.b.(3)(b)

A work request was written and the questionable lug on terminal DD84 was replaced.

4.b.(3)(c)

A work request was written and the red conductor on cable 22646 on terminal DD80 was lifted and made spare as on the drawing.

4.b.(4)

A new DCR was submitted to better reflect on the drawing the portion of circuitry removed in the balloon of a previous drawing change.

Corrective Action To Be Taken To Avoid Further Noncompliance

The specific actions taken for the previous items discussed adequately address those drawing problems and resolution is complete. However, to prevent further noncompliance for this violation and previous associated violations extra measures have been or will be taken.

- 1) A review of all the critical electrical drawings involved with multiple modifications in progress was conducted to insure modifications out of sequence would not constitute a safety concern. A review of the drawings discovered 3 occasions where caution needs to be exercised and qualified engineers have been assigned to closely monitor the progress of the modifications and drawings affected. Although completion of modifications out of sequence could have resulted in improper installation of wiring, any discrepancies would have been discovered through post-modification testing or through station surveillances that are routinely performed. For these reasons, the safety significance of these items has been considered minimal.
- 2) A field verification for all modifications is now required to look for obvious type errors utilizing the installation documents as a reference. Additionally, for electrical items, the above verification would be supplemented by a wiring termination verification against the wiring diagrams.
- 3) Critical drawings will be enhanced in the following manner:
 - a) The latest revision will be used as the critical drawing hung in the Control Room.
 - b) When a part of the critical drawing is "greened-out" or "red-in" the modification, DCR, etc. that changed the drawing will be referenced on the critical drawing.

- c) If the critical drawing has a revision pending then the drawing will be stamped "Revision Pending".
- 4) A new S&L Drawing Index revision will be issued by the end of October to correct errors found on the existing drawing index.
 - 5) Station Nuclear Engineering Department is reviewing drawing problems that have occurred recently due to efforts to enhance the usability of drawings. Corrective Actions to be taken will be recommended by SNED.
 - 6) Training will be given to personnel in the Station Modification Group to ensure that changes to critical drawings will be performed correctly.
 - 7) A 100% audit of all the critical drawings will be performed to ensure the accuracy of the drawings and to include any corrections resulting from item 5) above. This action will be completed by the end of November of this year.

Date When Full Compliance Will Be Achieved

All the actions mentioned to prevent recurrence of this violation will be completed by the end of November, 1986.

Discussion of Unresolved Item (249/86017-02(DRS))

During the review of work request 47867 for replacement of the Unit 3 Emergency Core Cooling System (ECCS) keep full pump in the west corner, it was noted that a non-safety related motor was installed in the safety-related application. Although the appropriate form, DAP 11-5a, was included in the package, the acceptance criteria utilized to upgrade the motor application was not readily apparent in the data. The needed technical comparison and evaluation of the original installation specifications versus the part being utilized was not included in the package.

Resolution

Resolution to Work Request 47867 (ECCS keep full pump motor) was accomplished by obtaining motor specifications of the original motor from the original equipment manufacturer. Comparison of data revealed equivalent motor specification between the current and original pump motor. The Technical Staff Supervisor discussed this item with the NRC Resident Inspector and at this time the station feels this item is closed.

Attachment B
Commonwealth Edison Company
Response to NRC Concerns

The following paragraphs outline the Station's response/corrective action for items resulting from the special safety inspection conducted on May 19 through 23, 1986 and detailed within the inspection report to Mr. Cordell Reed on June 30, 1986.

Modification Package M12-2-84-27 and M12-2-84-28

Item 3.a.1

The applicable incorrect drawings that detailed the air actuator lines were corrected for both Unit 2 and Unit 3. The safety significance was minor as the valves were installed and tested to function in the proper configuration on Unit 2 while the Unit 3 installation and testing was not yet complete.

Item 3.a.2

The solenoid manufacturer's recommendations allow for a horizontal mounting and this was incorporated into the Unit 2 package to reflect the as installed condition (horizontal). The Unit 3 package was changed and installed with the solenoids in a vertical position. The safety significance was minimal as the equipment will operate properly in both orientations.

Item 3.a.3

The stroke time measurement had been included within the existing test for Unit 2. The Unit 3 modification test was enhanced to include this timing requirement. The safety significance was minor as an operational surveillance prior to unit startup would have verified proper valve operation.

Item 3.a.4

The specific splices on the solenoid valves were re-done and are now considered acceptable.

Item 3.a.5

A Discrepancy Report was initiated to document the improper welds. The welds were re-worked per a work request and weld instructions. The safety significance was minor as the valves were not yet in service.

Item 3.a.6

The Unit 3 test was enhanced to incorporate the testing of the valve failure position on a loss of air. The Station considers the Unit 2 test as performed contained adequate instruction detail to insure proper performance.

Modification M12-2-84-49 and M12-2-84-50

Item 3.b.1

Consultation with Raychem revealed the acceptability of braiding penetrating the heat shrink as long as it does not protrude into the break-out part. Therefore the splices are environmentally qualified.

Item 3.b.2

The damaged motor lead was repaired per Work Request #54531.

Item 3.b.3

A seismic analysis is available showing the LPCI room cooler and motor installation have adequate margin to withstand seismic accelerations calculated for the specific structural area.

Item 3.b.4

No concerns documented.

Modification Packages M12-2-85-50 and M12-2/3-85-31

Item 3.c.1

It was confirmed that the ISI coordinator was aware of this new system boundary and the valve tags were confirmed to be in place.

Item 3.c.2

A memo of clarification with a sketch confirming the as-built condition was added to each package to document what was actually done. In addition, the appropriate red tags for safety-related materials were verified to be in the package.

Item 3.c.3

Discussions with the parties involved have not produced conclusive documentation that the date was recorded in error. However, we still believe that the date was recorded incorrectly.

Modification M12-2-84-9

Item 3.d

The installation of this modification was found acceptable by the Region III inspector.

Modification M12-2-83-29

Item 3.e

No concerns documented.

Item 3.f

No concerns documented.

Modification M12-2-84-14

Items 3.g.1 and 3.g.2

Sargent and Lundy reviewed the 150 psig flanges and determined that they will have no effect on the analysis or design of the system. The affected drawings were consequently changed to reflect the 150 psig flanges.

Item 3.g.3

The sheet gaskets used in this installation were determined to be acceptable by Sargent and Lundy.

Additional concern regarding material traceability

A memo was placed into the modification package detailing that seven 300 psig flanges were left in place. Only one 300 psig flange was replaced and the material red tag was included within the package.

Modification M12-2-83-40

Item 3.h

No concerns documented.

Modification M12-2-83-57

Item 3.i

No concerns documented.

Modification M12-2-84-8

Item 3.J.1

For the Unit 3 package, the Maintenance/Modification Procedure was rewritten to correct and simplify the method of installing the jumper. Modification M12-3-82-27 (which was to remove the jumper upon completion) had specific instructions on the drawing to avoid any possibility of disabling any safety system logic.

Item 3.J.2

A drawing change request was initiated to correct the discrepancies found during field inspection.

Item 3.J.3

The construction test was re-signed and dated to indicate which method was used to perform the work. The incident was thoroughly discussed with those involved.

Additional concerns in Section 3.J

In Modification M12-3-84-8, all leads that were new or in any way disturbed during the installation of modification were tested through Dresden Instrument Procedure 1400-5 and 1500-5.

The Station Nuclear Engineering Department conducted a review concerning the condition of the wiring cabinet in regards to spare wires not adequately identified. It was determined that the wiring should be supported at intervals of approximately 15-24 inches in a neat and organized manner to concur with IEEE Standard 420-1973. All unmarked spares were marked, the wiring was checked for adequate support and all loose wires taped.

Item 5 Work Requests and MO 2-1301-1

The eight work packages that were reviewed for appropriate use of "as-built" drawings were all red "safety-related" packages. These packages were completed after all instructed work was complete and appropriate testing/surveillances were performed. All work performed and applicable drawings are documented within the packages. It is the Station's position that the work performed within these packages were in accordance with Station procedures and no additional actions are required.

Motor Operated Valve 2-1301-1

The connection drawing for Motor Control Center was submitted for a drawing change to reflect the wiring discrepancy.

Item 5.a

The small oil leak through the torque switch housing gasket that allowed grease to cover a few wires did not impact on the environmental qualification or operation of the valve. The oil has been cleaned up and the gasket leak repaired.

Item 5.b

Prior to the Unit 2 startup, the power and control cables were replaced under Work Request #54615.

Item 5.c

Prior to the Unit 2 startup, the rotor contacts for the limit switches were thoroughly cleaned and will be re-inspected during the next refueling outage.

Item 5.d

Prior to the Unit 2 startup, all damaged and broken lugs found during the inspection of the valve were repaired.

Item 5.e

Same as 5.b.

Item 5.f

Same as 5.b.

Item 5.g

The short splices on the two wires in MCC 28-1 were replaced with proper sized and color coded wire per Work Request #54596.