

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-315/85016(DRP); 50-316/85016(DRP)

Docket Nos. 50-315; 50-316

Licenses No. DPR-58, DPR-74

Licensee: American Electric Power Service Corporation
Indiana and Michigan Electric Company
Columbus, OH 43216

Facility Name: Donald C. Cook Nuclear Power Plant, Units 1 and 2

Inspection At: Donald C. Cook Site, Bridgman, MI

Inspection Conducted: May 21, 1985 through June 24, 1985

Inspectors: B. L. Jorgensen

J. K. Heller

C. L. Wolfson

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Approved By: *John F. Suermann*
G. C. Wright, Chief
Reactor Projects Section 2A

July 23, 1985
Date

Inspection Summary

Inspection on May 21, 1985 through June 24, 1985 (Reports No. 50-315/85016(DRP); 50-316/85016(DRP))

Areas Inspected: Routine unannounced inspection by the resident inspectors of licensee actions on previous inspection findings; operational safety surveillance; maintenance; licensee event reports; and design changes and modifications. The inspection involved a total of 325 inspector-hours by four NRC inspectors including 38 inspector-hours off-shift.

Results: Of the six areas inspected, no violations or deviations were identified in five areas; one violation was identified in the remaining area (failure to follow/comply with the requirements of a Request For Change (RFC) - Paragraph 7).

DETAILS

1. Persons Contacted

*W. G. Smith, Jr., Plant Manager
*B. Svensson, Assistant Plant Manager
*T. Kriesel, Technical Superintendent-Physical Science
*A. Blind, Assistant Plant Manager
*K. Baker, Operation's Superintendent
*J. Stietzel, Quality Control Superintendent
T. Beilman, Quality Assurance Superintendent
J. Allard, Maintenance Superintendent
R. Tella, Maintenance Engineer
T. Kossack, Performance Engineer
A. Guzicki, Shift Supervisor
L. Boone, Shift Supervisor
L. Smith, Shift Supervisor
L. Gibson, Technical Superintendent-Performance
E. Murphy, Production Supervisor
G. H. Caple, Administrative Compliance Coordinator - Quality Control Department.
D. F. Krause, Administrative Compliance Coordinator - Operations Department
J. Feinstein, Manager of Nuclear Safety and Licensing
R. Hennen, Nuclear Section Head

The inspector also contacted a number of licensee and contract employees and informally interviewed operation, technical and maintenance personnel during this period.

*Denotes personnel attending exit interview on July 2, 1985.

2. Licensee Actions on Previously Identified Items

- a. (Closed) Violation (315/81-28-01; 316/81-32-01(DRP): Failure to maintain "N" List up-to-date. The inspector verified that the short term and long term commitments made by the licensee in their response of February 2, 1982 were implemented. A revised "N" List (Revision 2) was issued on March 31, 1982. Various memoranda addressed to R. F. Kroeger, indicated that departments with input to the "N" List reviewed the "N" List for completeness and took action to correct, or add items to, the "N" List. In addition, the inspector reviewed AEPSC General Procedure No. 3.2 "Control and Maintenance of the D. C. Cook Nuclear Plant "N" List" (Revision 0, dated May 11, 1982) and found that it adequately addressed the concerns that led to the violation. The procedure has provisions addressing the review and maintenance of the "N" List and has assigned responsibilities for these actions to various department heads/cognizant engineers.

Publication and distribution of the "N" List is required on an annual (minimum) basis and this requirement was being met (up to and including the currently published revision). In addition, the items identified as missing in 1982 were listed in the current (Revision 5, July 31, 1984) "N" List (Reference Pages 13-15). This item is considered closed and there are no further questions on this matter.

- b. (Closed) Violation (315/82-11-01; 316/82-11-01): Safety related components not on the "N" List; illustrative of a repetitive problem of failing to take effective and timely corrective action to prevent recurrence. The inspector confirmed that the formerly missing item (the containment divider barrier seal) is currently shown on the "N" List (Reference Revision 5, dated July 31, 1984; Unit 1 Page 5 and Unit 2 Page 12). In addition, the inspector confirmed that the supplier of the seal (Uniroyal Co.) is listed in the current Qualified Suppliers List (QSL) (Reference Revision 14, dated January 3, 1985). With regard to the failure to take effective and timely corrective action, the inspector noted the following: the licensee issued a new revision of the "N" List (Revision 3, dated September 30, 1982) within three months of the 1982 inspection finding; subsequent revisions to the "N" List, per procedure, have been issued each year since then; and AEPSC General Procedure 3.2 had been issued as Revision 0, dated May 11, 1982, just prior to the inspection taking place and the procedure was in its initial application phase. The procedure included provisions for maintaining the "N" List in a current form and also assigned "N" List item identification responsibilities to certain individuals. In addition, the procedure required Quality Assurance Department review of purchase orders and contracts for possible new additions to the "N" List. Per AEPSC General Procedure No. A.P. 5.1, AEPSC General Procedure 3.2 is reviewed periodically and updated as required. Internal memoranda addressed to R. F. Kroeger, corporate QA department, from late 1982 through early 1985 reflect that the applicable departments did review the "N" List as required for completeness, needed revisions, or correctness. In addition, the memoranda indicate an awareness on the part of the department personnel that the updating of the "N" List is a recurring and procedurally required process. This item is considered closed and there are no further questions.
- c. (Closed) Open Item (315/83-02-04): 80°F RWST temperature was used for part of the ECCS analysis instead of the Technical Specification required 70°F. Subsequent to the identification of the item in March 1983 as a result of a prompt licensee Event Report, Unit 1 entered a refueling outage on July 16, 1983. The fuel reload involved continuing the transition from Exxon fuel to Westinghouse fuel. As a result of using two different fuel types in the core, the licensee had to use two separate ECCS analyses. Due to waning contractual commitments with the Exxon company, the licensee made a decision not to have Exxon do a new ECCS analysis (considering the small number of fuel assemblies left in the core). Instead, the

licensee (with PNSRC approval) chose to administratively limit the minimum RWST temperature allowed to a value of 80°F. This is a more conservative value than the Technical Specification temperature of 70°F and, hence, is an allowable action on the part of the licensee. The administrative imposition of the 80°F RWST temperature was implemented by Standing Order No. PMSO-074 Unit 1 "Refueling Water Storage Tank Minimum Water Temperature" (dated September 24, 1982). Per discussion with J. Feinstein, Corporate Manager of Nuclear Safety and Licensing, the inspector was informed that the licensee intends to maintain PMSO-074 in effect so long as Exxon fuel is used in the core. The ECCS analysis for the Westinghouse fuel used the 70°F temperature stated in the Technical Specification (Reference Section 3.5.5) and the Technical Specification does not have to be changed. The inspector confirmed the RWST temperature of 70°F agrees with that stated in Table 14.D-1, Page 14.D-14, of the updated Final Safety Analysis Report, dated July 1984. The PMSO was implemented by Plant Procedure (1-OHP 4030 STP.030; Data/Signoff sheet 6.4, Page 2 of 3, Revision 13). Due to the small number of Exxon fuel assemblies remaining in the core (approximately 30) and the administrative controls in place to monitor the RWST temperature, the inspector concluded the item is closed and there are no further questions on this matter.

- d. (Open) Violation (316/83-04-01) and Open Item (316/83-04-04): The test program could not demonstrate Containment Spray Additive System operability. In correspondence from NRR (Varga to AEPSC Dolan dated November 26, 1984) NRR concluded that the five year surveillance requirement for the spray additive system was inadequate and should be revised. In correspondence from AEPSC to NRR (AEP:NRC:0914 and 0914B dated January 15, 1985 and May 31, 1985) the licensee documented a justification for continued plant operation and stated a vendor is performing an analysis to justify removal of the spray additive system. This analysis was expected to be completed by the end of year with an appropriate Technical Specification change request made by October, 1985. The inspector contacted the NRR project manager and requested a response to the licensee request for continued plant operation.
- e. (Open) Open Item (315/83-11-04, and 316/83-12-05): Fire system piping required more support. At the request of a Region III Fire Protection Specialist the resident inspector verified that an additional pipe hanger was installed for the fire system piping in the auxiliary building at the contractor access controlled entry and exit station. The inspector verified that a jack type support was installed but noted that the base plate was not secured to the floor. This information was provided to the Region III Specialist with a recommendation that this item not be closed until a determination was made pertaining to the fastening requirements of the base plate.

- f. (Closed) Violation (315/83-12-03; 316/83-13-02(DRP)): Failure to document QA program element in the form of written procedures to certify personnel according to ANSI Standard N45.2.6-1978. The inspector reviewed the following documents: PMI-7090 "Plant Quality Control Program" (Revision 0, effective 3/10/84); QHI-7091 "Qualification and Certification for Quality Control Technicians" (Revision 0 effective January 1, 1985); 12 QHP 7091 QC.001 "Qualification and Certification for Quality Control Technicians" (Revision 1, effective 3/13/85); QC Surveillance Report No. QC AEP-85-0769 (approved 6/21/85); and AEPSC General Procedure No. 2.3 "Qualification and Certification of Inspection, Test, Examination, Audit and NDE Personnel" (Revision 0, effective April 3, 1985. These documents now reflect the formal requirements to be met by plant and offsite personnel in order to be certified and qualified. The inspector noted that 12 QHP 7091 QC.001, by virtue of its being issued three months before the issuance of General Procedure No. 2.3, will require revision to conform with the more detailed requirements of the general procedure. The licensee is aware of this and has agreed to revise the plant procedure. The procedures reviewed address the concerns raised in the inspection finding in sufficient detail to resolve the violation as noted. The implementation of the program requirements imposed by the procedures will not be complete until early January 1987. This fact, is known to Region III, USNRC, and is being followed separately by Violation (315/84-16-02A;316/84-18-02A(DRS)). In view of this, the item as originally cited is considered closed and there are no further questions.
- g. (Open) Violation (315/84-16-02A; 316/84-18-02A(DRS): Untimely corrective action on identified quality problems. The violation resulted from the licensee's failing to meet their commitment date for having procedures in place to correct the problem noted in Violation (315/83-12-03; 316/83-13-02(DRP)), discussed previously in this report. The licensee's general and plant procedures were issued subsequent to the findings being made in 1984 (see procedure dates noted in preceding item of this report). The procedures note that full compliance (with regard to their implementation) will not be achieved until January 1987. The compliance date, and the measures to be taken in the interim, are discussed in more detail in the licensee's response to Inspection Report No. 315/84016; 316/84018 which was dated November 1984. The QC Superintendent at the plant was of the opinion that the violation probably could not be closed out until implementation of the certification/qualification was completed. The inspector reviewed the procedures currently in place and discussed the current status of the violation with the Region III Quality Assurance Section Chief on June 21, 1985. A decision was made to continue to follow the resolution of this item until the implementation process is completed. This item will remain open and be followed by Region III QA personnel.

No violations or deviations were identified.

3. Operational Safety Verification

- a. The inspector observed control room operation including manning, shift turnover, approved procedures and LCO adherence; and reviewed applicable logs and conducted discussions with control room operators during the inspection period of May 21, through June 24, 1985. Observations of the control room monitors, indicators, and recorders were made to verify the operability of emergency systems, radiation monitoring systems, and nuclear and reactor protection systems. Reviews of surveillance, equipment condition, and tagout logs were conducted. Proper return to service of selected components was verified. Tours of the auxiliary building, Unit 1 containment, and screenhouse were made to observe accessible equipment conditions, including fluid leaks, potential fire hazards, and control of activities in progress.
- b. By observation, review of corrective action documents and direct interview the inspector found two examples that showed the Physical Security Plan was not being implemented. These examples were identified to Region III security specialists and became the subject of a special inspection (315/85018(DRS); 316/85019(DRS)).
- c. During a tour of the 633 foot level of the lower containment at approximately 1000 hours on June 18, 1985 the inspector found a quart container of neolube (flammable liquid) in a tool chest next to the pressurizer. The neolube was in its original container which was not an approved safety container equipped with a self-closing lid and flame arrestor. The inspector discussed this with the Fire Protection Coordinator who: confirmed that neolube was a flammable liquid; took steps to have the neolube removed; and, issued a Condition Report. Plant Managers Instructions 2271 "Control of Combustible Material" at Paragraph 4.2.2 requires that flammable liquid shall be stored in approved safety containers and the containers shall be UL or FM approved with a self-closing lid and an interior flame arrestor. Unit 1 Technical Specification 6.8.1.f requires that written procedures shall be implemented for fire protection. Failure to comply with PMI-271 as described above is a violation of Technical Specification 6.8.1.f. A notice of violation was not issued for this item because the licensee's response to a similar notice of violation (315/85014-01; 316/85014-01(DRP)) is not due until July 6, 1985. At the exit interview this item was discussed and the licensee encouraged to consider this item when responding to the notice of violation for 315/85014-01; 316/85014-01(DRP).
- d. The inspector independently surveyed a radwaste truck awaiting shipment on June 12, 1985 using a Xetex 305B digital exposure ratemeter (serial number NRC 7852). The inspector's readings were in agreement with the licensee's readings; all readings complied with Department of Transportation requirements.

- e. The inspector performed a walkdown/review of the systems listed below to verify that: each accessible flowpath valve and associated instrumentation was in its correct position and properly labelled and, no condition existed that degraded the system.
- (1) Unit 1 Feedwater and Main Steam systems inside containment using prints 1-5105-15 and 1-5106-14.
 - (2) Unit 1 Emergency Core Cooling System inside containment using print 1-5143-8.
 - (3) Unit 1 Containment Spray System inside containment using print 1-5144-6.
- f. While leaving the auxiliary building control area exit point on June 11, 1985 at approximately 1400 hours the inspector observed a worker attempt to leave the exit point without frisking and using the REM computer. The worker informed the Rad Pro Technician at the exit point that the REM computer was not working at the Contractor Access Control (CAC). The CAC is a second entry/exit point to the auxiliary building used during outages. The worker stated he was informed by the Rad Pro Technician at the CAC that since the REM computer was inoperable it was permissible not to use the REM computer provided he was only going to the auxiliary building control area exit point. The Rad Pro Technician at the auxiliary building control area exit point required the worker to frisk and use the portal monitor but did not require the worker to use the REM computer. While the inspector questioned the Rad Pro Technician on the use of the REM computer the worker frisked and left the area. The inspector informed the Radiation Protection Supervisor and Environmental Supervisor of this item, as it apparently deviated from plant procedures for controlled area entry and exit, which require use of the REM computer system.
- g. Prior to a diver entering the refueling cavity, the inspector verified by interview and review of records that a survey of the work area had been performed and exclusion areas established.
- h. A review of control room logs to verify compliance with Limiting Conditions for Operations, with one emergency diesel out of service, led to a discussion concerning applicability of the 25% "grace period" for completion of required surveillance testing as provided for by Technical Specification 4.0.2 (both Units). The licensee considers the 25% "grace period" to apply when a Technical Specification Section 4 surveillance is being performed at an accelerated frequency pursuant to instruction of an Action Statement of Section 3, and has formalized this position at Paragraph 3.5 of PMI-4030 "Technical Specifications". The inspector has requested an interpretation through NRC channels concerning the validity of the licensee's position. This is considered an Open Item (315/85016-01; 316/85016-01).

One violation (not cited) and no deviations were identified.

4. Monthly Surveillance Observation

The inspector reviewed Technical Specifications required surveillance testing on the systems listed below and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that limiting conditions for operation were met, that removal and restoration of the affected components were accomplished, that test results conformed with Technical Specifications and procedure requirements and were reviewed by personnel other than the individual directing the test, and that deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

**2 THP 4030 STP.117 Steam Generator Water Level Protection Set III
Surveillance Test (Monthly).

**2 THP 4030 STP.118 Steam Generator Water Level Protection Set IV
Surveillance Test (Monthly).

**2 THP 4030 STP.120 Steam Generator 3 & 4 Mismatch Protection Set I
 Surveillance Test (Monthly).

**2 THP 4030 STP.121 Steam Generator 1 & 3 Mismatch Protection Set II
Surveillance Test (Monthly).

No violations or deviations were identified.

5. Monthly Maintenance Observation

Station maintenance activities of safety related systems and components listed below were observed and/or reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides and industry codes or standards and in conformance with Technical Specifications.

The following items were considered during this review: the limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; and activities were accomplished using approved procedures.

The following maintenance activities were observed:

**12 MHP 5021.032.001I Maintenance Procedure for Removal and Inspection of Emergency Diesel Engine Cylinder Liner and Piston. Unit 1 CD Diesel Low Speed Tests were performed using **12-OHP 4021.032.001 Starting, Paralleling, loading, and Shutting Down the Emergency Diesel Generators.

JO 92123
**1 MHP SP.093

Preoperational Test Procedure for 1 CD
Battery.

JO 82832

Repair of leakage from Steam Generator
No. 2 Safety Relief Valve.

No violations or deviations were identified.

6. Licensee Event Reports

Through direct observation, discussions with licensee personnel, and review of records, the following Event Reports were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with Technical Specifications. The following LER's are considered closed:

Unit 1

RO 315/82091-03

A containment airlock door equalizing valve was leaking due to adjusting nut wear. The valve was repaired and a requirement added to the preventive maintenance instructions to provide for replacement of the nylon-lined nuts each refueling cycle.

RO 315/83032-03

Loose articles in containment: The licensee has developed appropriate specific controls for containment cleanliness and verification inspection thereof including "Guidelines For Loose Objects Inside Containment" as an attachment to Procedure 1 OHP 4030.001.002, "Containment Closeout Inspection".

RO 315/83078-03

A completed design change left the pressurizer ventilation system with apparently inadequate tie-down features. A report under 10 CFR Part 21 also addressed this matter. Adequate tie-downs were installed prior to unit operation.

RO 315/83084-03

Due to a drawing error, routine breaker cleaning resulted in de-energizing the pump for ERS-1400 when it was required "operable". The drawing error was corrected and a generic corrective review process initiated under Condition Report No. 12-09-83-0806; an effort which ultimately yielded "enhanced" one-line, drawings for all AC and DC distribution of 4 KV or below (all safety related).

RO 315/83087-03
RO 315/83088-03

Radiation monitors ERS-1400 and ERS-1300 respectively were rendered inoperable by defective input/output (I/O) cards. The I/O cards were replaced. Generic upgrading of the I/O system was addressed via assistance request AR-786, which resulted in instrument enclosure to improve cooling and prevent dirt accumulation. The defective I/O cards were re-worked and have performed reliably.

RO 315/83090-03

The West Centrifugal Charging Pump failed to meet acceptance criteria for flow during flow balance testing. The pump was rebuilt, an orifice installed on the East (opposite) pump, and the flow balance test was successfully completed.

RO 315/83092-03

The Set 4 overtemperature and overpower delta-T bistable tripped unexpectedly during an unrelated surveillance test (incore/excore calibration) due to a defective (vibration oversensitive) isolation amplifier. The defective amplifier was replaced. Similar amplifiers on Sets 1 through 3 did not exhibit the same defect.

Unit 2

RO 316/83041-03

Loose articles in containment: the licensee's actions were as discussed with the associated item for Unit 1 above. (RO 315/83032-03)

RO 316/81023-03
316/81024-03
316/81033-03
316/81043-03
316/81059-03
316/82017-03
316/83013-03

These events each involve pressurizer low pressure conditions resulting from mismatched primary versus secondary power levels. Each occurred briefly during "transient" conditions and a variety of causes contributed in individual cases. A common contributor was low pressurizer heater capacity/availability to respond to temporary power mismatches. Pressurizer heater breakers of greater capacity have been installed (1984). Further, the Technical Specifications have been revised to make the pressure limit inapplicable during certain step and ramp power changes. Finally, pressure transients recovered in less than two hours (as in these events) are no longer reportable matters.

RO 316/81031-03

Reactor coolant system Tavg decreased below 541 degrees. This item is related to those immediately above insofar as it occurred during the transient conditions of a plant startup; was brief (about 1 minute); and was identified and corrected by the control room operators on shift. The condition has not recurred, and would no longer be considered a reportable matter if it should recur.

RO 316/83105-03

Obstruction of two ice condenser doors by bracing installed for a plant design change unrelated to the ice condenser system. The obstruction was removed by replacement with modified bracing, prior to expiration of the associated Action Statement. The plant did change modes during the time the two doors were inoperable, which is a violation of Technical Specification 3.0.4; however, in accordance with NRC Enforcement Policy for less significant violations identified, corrected, and reported by the licensee, no Notice of Violation is being issued.

One violation (not cited) and no deviations were identified.

7. Design Change

The inspector reviewed the Request for Change (RFC) package for RFC 01-2764, "Replacement of Train A and B 250 Volt Batteries", to verify: that the change is being made in accordance with 10 CFR 50.59; that it had been reviewed in accordance with the Technical Specifications and the QA program; that the change was being conducted in accordance with written instructions which included appropriate inspections, test, and acceptance values or standards; and that change documentation was being properly developed.

The subject RFC involved removal of the two original batteries (consisting of 120 cells each supplied by Exide) and installation of new batteries (including supporting hardware) of 116 cells each, supplied by C&D Power System ("C&D"). At the time the inspection was begun on June 5, 1985 the licensee had installed one new train, declared the new battery "operable", and had the other train removed from service for replacement. The June 5 tour of the "new" battery showed the following were incomplete: one of two rack ground cables had not yet been cadwelded to the grounding bar; grouting under the rack baseplates had not been performed, and a number of leveling/support shims were loose; some spacers between cells were not yet installed; and, the racks had not been painted. Licensee procedures apparently permit restoring and declaring a modified system "operable" with work incomplete, but apparently does not require a listing of the incomplete work or a justification/analysis of the incomplete works affect on "operability". The new battery passed a functional surveillance

test prior to being declared operable, but not all design features (e.g. seismic qualification) are challenged by such a test. Thus, design controls must be relied upon for such features, to assure the battery would remain operable during a seismic event as assumed in accident analysis. The licensee's administrative controls in this area as described above (no formal "punch-list" with associated justifications) create a significant potential that a modified system could be prematurely declared operable. This was discussed at the Management Interview.

The inspector compared the "as-built" configuration to the instructions and drawings used for the installation, with the following findings:

- a. The gap between the baseplate and the floor, remaining to be grouted, ranged from about 3/4 to 1 1/4 inches, contrary to drawing 12-3434A-4, which specifies "1/2 inch grout - if required to level".
- b. The drawing list for the RFC referenced no drawing which specifically addressed where to place tie rods (identified in the vendor manual as supplied for "seismic" installation) on the rack overall; there is a vendor drawing which reportedly was used but the tie rods appeared to be spaced somewhat randomly and not as shown on the vendor drawing.

Concerning each of the above matters, the licensee apparently treated the identified drawings/specifications as "references", rather than as "requirements". This was of concern to the inspector because, as noted earlier, the functional test used to declare the new battery "operable" did nothing to verify the adequacy of seismic design or construction.

Appendix B to 10 CFR 50, at Criterion III "Design Control", requires measures be established to assure applicable design basis requirements are correctly translated in specifications, procedures, drawings and instructions. These measures must include provisions to assure quality standards are specified and deviations from such standards are controlled.

In the absence of any other controls, the specifications discussed above concerning baseplate-to-floor gap and placement of tie-rods must be considered quality standards relating to seismic qualification (i.e. acceptable deviations therefrom are not limitless); thus, the described deviations constitute field changes which were not subjected to appropriate review and approval, as also specified in Criterion III, which is considered a Violation (315/85016-02).

The licensee has completed a review which has verified the "as-built" baseplate-to-floor gap to be acceptable with respect to seismic qualification. "As-built" placement/spacing of the tie-rods has not been specifically analyzed. This is considered an Open Item (315/85016-03).

8. Open items

Open Items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. Open Items disclosed during this inspection are discussed in Paragraph 7 above.

9. Management Meeting

The inspector met with the licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on July 2, 1985 and summarized the scope and finding of the inspection.

The inspector asked those in attendance whether they considered any of the items discussed to contain information exempt from disclosure. No items were identified.