U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-315/86022(DRP); 50-316/86022(DRP)

Docket Nos. 50-315; 50-316 Licenses No. DPR-58; DPR-74

Licensee: American Electric Power
Service Corporation
Indiana and Michigan
Electric Company
1 Riverside Plaza
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 13 through June 16, 1986

Inspectors: B. L. Jorgensen
J. K. Heller

Approved By: B. L. Burgess, Chief
Projects Section 2A

7/1/86
Date

Inspection Summary

Inspection on May 13 through June 16, 1986 (Reports No. 50-315/86022(DRP); 50-316/86022(DRP))
Areas Inspected: Routine unannounced inspection by the resident inspectors of licensee actions on previously identified items; operational safety verification; reactor trip; maintenance; surveillance; reportable events; regional requests; and miscellaneous inspection.
Results: Of the eight areas inspected, no violations or deviations were identified in seven areas. One violation (Level IV - procedure failed to properly restore system after test - Paragraph 6) was identified in the remaining area.

DETAILS

1. Persons Contacted

*W. Smith, Jr., Plant Manager
A. Blind, Assistant Plant Manager
B. Svensson, Assistant Plant Manager
*J. Rutkowski, Executive Staff Assistant
T. Kriesel, Technical Superintendent-Physical Sciences
J. Allard, Maintenance Superintendent
K. Baker, Operations Superintendent
J. Stietzel, Quality Control Superintendent
T. Beilman, Planning Supervisor
L. Gibson, Technical Superintendent-Engineering
J. Sampson, Operations-Production Supervisor
D. Wizner, Maintenance-Production Controller
*M. Horvath, Quality Assurance Supervisor
*J. Rischling, Administrative Compliance Coordinator-QC
R. Clendenning, Radiation Protection Supervisor
J. Fryer, Environmental Supervisor
T. Postlewait, Performance Supervisor
D. Draper, Operations Procedure Coordinator
*P. Jacques, Fire Protection Coordinator

The inspector also contacted a number of other licensee and contract employees and informally interviewed operations, maintenance, and technical personnel.

*Denotes personnel attending Management Interview June 13, 1986.

2. Licensee Actions on Previously Identified Items

(Closed) Open Item (315/85009-03; 316/85009-02): Emergency Operating Procedure (EOP) upgrade, including reactor coolant pump manual trip criteria and instructions for use of the Reactor Vessel Level Instrument System (RVLIS) in assessing core cooling adequacy. The subject procedures (43 per Unit) have been developed and issued. Criteria on manual reactor coolant pump trip are contained on the "fold out" to procedures 01- and 02- OHP 4023.E-0 "Reactor Trip and Safety Injection," which are referenced in numerous other EOPs via instruction to check whether reactor coolant pumps should be tripped. The criteria follow Westinghouse Owner's Group (WOG) recommendations. Instructions concerning RVLIS are primarily contained in two procedures (per Unit): 01- and 02- OHP 4023.FR-C1, "Response to Inadequate Core Cooling;" and 01- and 02- OHP 4023.FR-C2, "Response to Degraded Core Cooling."

No violations, deviations, unresolved items, or open items were identified.

3. Operational Safety Verification

a. The inspector observed control room operation including manning, shift turnover, approved procedures and Limiting Condition for Operation (LCO) adherence, and reviewed applicable logs and conducted discussions with control room operators during the inspection period. 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, as applicable. Reviews of surveillance, equipment condition, and tagout logs were conducted. Proper return to service of selected components was verified. Tours of the auxiliary building, turbine building, Units 1 and 2 containment buildings, and screenhouse were made to observe accessible equipment conditions, including fluid leaks, potential fire hazards, and control of activities in progress.

b. Unit 1 operated routinely at approximately 90 percent power until the reactor tripped on May 28, 1986. The reactor trip is discussed in Paragraph 4 below. The Unit then remained out of service for a variety of tests and repairs the rest of the inspection period. Unit start up is anticipated for late June.

c. Unit 2 remained in a scheduled refueling/maintenance and EEQ outage which began February 28, 1986. Original outage duration was estimated at approximately 90 days. Unanticipated additions to the scheduled activities, including substantial expansion of steam generator eddy current testing and major overhauls of a diesel generator and a centrifugal charging pump, have extended the outage schedule about three weeks. Unit start up is now anticipated for early July.

d. Specific notice was taken in both control rooms of "human factors" modifications to control room panels. The enhancements to date have emphasized visual highlighting of "critical" controls or control groups, vertical divisions between panels, and improved labeling (legibility and color coding). This is expected to be a continuing process which, concurrent with planned development of a plant-specific control room simulator, may involve relocation or other modification of controls.

e. The inspector reviewed a variety of system operating procedures and an alarm response procedure, all associated with the emergency diesel generators, as follows:

(1) 1-OHP 4021.032.001 "Starting, Paralleling, Loading and Shutting Down the Emergency Diesel Generators."

(2) 1-OHP 4021.032.002 "Placing the Emergency Diesel Generator Lube Oil System in Service."

(3) 1-OHP 4021.032.004 "Placing the Emergency Diesel Generator Starting Air System in Service."

(4) 1-OHP 4021.032.005 "Placing the Emergency Diesel Generator Fuel Oil System in Service."

(5) 2-OHP 4024.019 "Annunciator No. 19 Response Station Auxiliary AB" (Unit 2).

The inspector performed a walkdown and review of accessible portions of the CD emergency diesel generator starting air and fuel oil systems using licensee valve lineup sheets (attachments to Procedures (3) and (4) above), and verified correct flow path valve positions. One case of a missing valve tag and three examples of inconsistency between verbal descriptions of valve function as given on the lineup sheet versus the tag, were identified to the Operations Department for appropriate action. No conditions were noted which degraded these systems or their major components.

The annunciator response procedure (No. 5 above) was reviewed as an adjunct to inspector observation of a diesel test (See Paragraph 6 below concerning test observation). Set up for the test caused Panel 19 "drop" 67 to annunciate (as designed) indicating "600v Bus 21A and 21C Parallel Operation." The inspector found only a blank, formatted page containing no instructions for response to this annunciator. Further review (there are 100 "drops" for this panel) identified two additional annunciators, Nos. 21 and 96, for which no response instructions had been provided. This deficiency was referred to licensee personnel for additional review and correction. The licensee's review found the Unit 1 procedure for these same annunciators complete and correct, and the Unit 2 procedure was corrected the following day. None of the subject annunciators were found to involve immediate action requirements, either automatic or operator initiated.

f. During a tour in the auxiliary building, the inspector noted a small hatchway had been opened for placement of an apparently temporary ventilation fan, but other openings (doors) in the same wall were closed and labeled as technical specification fire barriers. Follow up with the Fire Protection Coordinator established fire zone changes had rendered the labeling obsolete, as the wall in question is no longer relied upon as a fire barrier between different "zones." The licensee agreed to resolve these contradictory conditions.

g. The licensee has implemented a whole body personnel contamination monitoring (frisking) program when exiting from the auxiliary building, which includes portable hand-held monitors and a portal monitor. The inspector has observed that most workers perform the required frisking and seek assistance when either monitor alarms.

However, on May 23, 1986 at approximately 1200 hours the inspector watched a contractor employee alarm the auxiliary building main access control portal monitor. The contractor, without advising Radiation Protection personnel, proceeded to and then successfully exited from the portal monitor at contractor access control (CAC). The CAC portal monitor is in a higher "background," and thus, has a higher alarm point. The inspector discussed this item with the Radiation Protection Manager noting that this is similar to a violation identified in IE Reports No. 50-315/85024-05(DRSS); 50-316/85024-05(DRSS), which involved multiple cases. This item was also discussed at the management interview as evidence that total adherence to the plants intended practices has not yet been achieved. Subsequent to the exit interview the inspector was informed that the licensee is purchasing Eberline standup whole body counters to replace the portal monitors.

These reviews and observations were conducted to verify facility operation activities were in conformance with the requirements of technical specifications, 10 CFR, and applicable administrative requirements.

No violation, deviations, unresolved items, or open items were identified.

4. Reactor Trip

The Unit 1 reactor tripped from about 90 percent power at 12:22 a.m. (EDT) on May 28, 1986, when the main turbine tripped on indicated "Backup Overspeed Trip." The inspector reviewed the event to determine: the significance of the event; the performance of safety systems; immediate actions taken by the licensee; potential radiological consequences; and corrective actions taken. Following the reactor trip, required safety systems performed as designed until one of two intermediate range excore nuclear power detectors stopped tracking during a decrease (decaying) in power and "hung up" at about 10 E-10 amps. At this level, it was possible to energize both source range detectors, which the licensee did, restoring redundancy to the excore monitoring system.

The airborne particulate radiation levels in the lower containment trended upward subsequent to the trip, and alarmed at about twice "background" about 40 minutes later, constituting an "ESF Actuation" signal to isolate containment purge. The purge was already isolated, as actual purging was not in progress. These increased particulate readings peaked at about three times "background" and then began to decline again.

Inasmuch as a known, small amount of primary system leakage (about 0.2 gpm) existed before the trip, the licensee made a planned lower containment entry to locate the source(s) of this leakage, if possible. One pressurizer spray valve and a letdown valve were identified as having small packing leaks.

The Unit was placed in cold shutdown to repair all identified leaks and to investigate and repair, as necessary, the failure of the intermediate range detector and the electronic circuitry apparently at fault as the cause of the turbine trip, and thus, the reactor trip.

By the conclusion of this inspection, these activities were complete, except no specific fault had been identified in investigation of the turbine protective circuitry, despite the assistance of the licensee's lead system engineer and of a consultant provided by the turbine manufacturer, General Electric Corporation. Associated printed circuit cards were replaced, and the licensee scheduled a turbine overspeed trip test for Unit start up, to verify correct protective system response.

This matter will be examined further in review of the anticipated Licensee Event Report covering this event.

No violations, deviations, unresolved items, or open items were identified.

5. Maintenance

Station maintenance activities of safety-related systems and components listed below were 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; activities were accomplished using approved procedures; and post maintenance testing was performed as applicable.

The following maintenance activities were reviewed:

a. Control and Instrument Section implementation of a Supplement to RFC 2-2685 (involving fire protection) to eliminate a "standing" annunciator alarm caused by the original RFC.

b. Troubleshooting the 2 CD emergency diesel generator governor, with the manufacturer's (Woodward) representative, following a start failure during a test. This test matter is discussed further in Paragraph 6 below.

c. Inspection and repair of 1 CD emergency diesel generator. Job Order (JO) 110309 was written to remove a (nominal) one-inch engine casing plug and perform a visual verification of correct bearing oil passage alignment on the No. 4 main bearing. All four diesels onsite were being subjected to this inspection because blockage of the passage apparently caused damage to the No. 4 bearing on diesel 2 CD, repair of which involved complete disassembly of that engine and replacement of the lower engine base and crankshaft. The subject 1 CD engine was the last to be inspected. The casing plug broke apart when removal was attempted, apparently because it had previously been damaged and the damage camouflaged with a patch-kit type repair. The patch, in fact, covered a through-wall hole through the center of the plug. While the inspector observed, this condition was documented by photograph, and Condition Report (CR) 1-06-86-661 was initiated for investigation. The damaged plug was then removed and, because probing with a magnet indicated some

pieces of the broken plug and/or patch material had gotten into the oil passage, the decision was made to implement procedure No. **12 MHP 5021.032.017, "Emergency Diesel Engine Main Bearing Removal, Inspection and Installation" for the No. 4 bearing. The inspector observed this work, in part, the day after discovery of the problem. Further inspector review may follow, depending on licensee findings in pursuit of the subject Condition Report.

No violations, deviations, unresolved items, or open items were identified in review of this area.

6. Surveillance

The inspector reviewed technical specifications required surveillance testing as described below. The inspector 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 properly 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.

The following were observed or reviewed:

a. **2 THP 4030 STP.217A, Section 5.4 "CD Diesel Generator 24 hour Load Test and Blackout Following 24 hour Run Using NGV Relays" and 5.5 "Safety Injection, Blackout, and Containment Spray-Train A."

These portions of surveillance test STP.217A were of particular interest to the inspector because the 2 CD diesel generator had failed to re-start (when challenged after a 24 hour performance run) during this part of the test on May 22. The start logic worked, as did the air start system, but the engine would not fire. Licensee investigations over the next days found the fuel racks, particularly the "rear" bank, to be bound in their mounting brackets to an extent exceeding the stall torque of the engine governor. Thus, fuel injection was absent or inadequate. This is the engine which had been disassembled for replacement of the engine base and crankshaft. Movement of the upper assembly, including the fuel racks and mounts, probably contributed to the slight misalignment which caused the binding, as did differential thermal expansion over the 24 hour run. The rack mounts were realigned and verified "free" at both hot and cold conditions and the 24 hour performance run, followed by shutdown, hot restart on blackout, and correct sequencing on safety injection actuation, were all completed successfully on May 27.

b. **1 OHP 4030 STP.027AB "Emergency Diesel Generator Operability Test." This procedure was recently revised (early May 1986) and the inspector found it to be a good, thorough procedure which covers a number of

common sense items related to quality equipment performance, above and beyond minimums required for "operability." Inspector comments concerning a couple of auxiliary features (not relating to "operability") which appear not to be verified, were relayed to the procedure sponsors.

c. **2 OHP 4021.032.001 "Starting, Paralleling, Loading and Shutting Down the Emergency Diesel Generators." This is actually the system operating procedure (reference Paragraph 3 above) but it was utilized to accommodate collection of test data associated with a design change to install bearing temperature monitoring thermocouples.

d. A Control and Instrument Department technician and a Victoreen Co. representative calibrating the containment high-range gamma monitor.

e. **1 THP 6030 IMP.076 "Incore Thermocouple and Reactor Coolant System RTD Cross Calibration Test Procedure."

f. **2 THP 6030 IMP.276 "Incore Thermocouple and Reactor Coolant System RTD Cross Calibration Test Procedure."

During a tour of the Unit 1 Steam Generator Valve areas on May 23, 1986 the inspector found a Heise pressure gauge installed on a steam pressure sensing line for each steam generator (four Heise gauges installed). The installation appeared temporary, as no supports or restraints were present. Each sensing line is upstream of its associated main steam isolation valve and contains two permanently installed pressure gauges. The Heise gauges were numbered XCTG-001, XCTG-002, XCTG-003, and XCTG-004 and were installed on the lines to MPI 212, MPI 221, MPI 232, and MPI 241, respectively. The inspector subsequently discussed this finding with Control and Instrument section personnel, who agreed to investigate. A couple of days later the inspector was informed that the gauges had been removed. They were believed to have been installed for Incore Thermocouple and RTD cross calibration. A check of completed calibration procedures showed that **1 THP 6030 IMP.076 "Incore Thermocouple and Reactor Coolant System RTD Cross Calibration Test Procedure" was performed between October 22, 1985 and October 31, 1985. The procedure requires the use of calibrated Heise gauges with a range of 0-3000 pounds and an accuracy of 0.25 percent. This test was intended to be done in Modes 3 and 4. STEP 3.8 of IMP.076 requires installation of the calibrated Heise gauges on either the main steam line common header or on each steam generator upstream of the MSIV. The data indicates that five gauges were installed, and the option of performing the test with the MSIVs open was used. The restoration portion (Section 10) of IMP.076 did not require removal of the subject gauges. It appears the gauges were installed from October 22, 1985 to June 9, 1986. During that time the plant was in power operation from November 13, 1985 to May 28, 1986 with a short outage from November 25 to December 14, 1985.

PMI 2010 "Plant Manager and Department Head Instructions Procedures and Indexes" at Paragraph 3.7.1 states that instructions and procedures shall be prepared utilizing the required format identified on Attachments 1 and 2. Paragraph 4.I, "Restoration" of Attachment 2, "Format of Procedures" requires that steps necessary to restore all controls and equipment, whose status was changed during the course of the procedure, be provided. Adherence to PMI 2010 is a requirement of Technical Specification 6.8.1.a by reference to Regulatory Guide 1.33, which includes Administrative Procedures for equipment control, procedure review and procedure approval. Failure to comply with PMI 2010, as shown above, is a violation of Technical Specification 6.8.1.a (Violation 315/86022-01; 316/86022-01).

The inspector toured the Unit 2 steam valve enclosures and found that similar Heise gauges were not installed. A review of **2 THP 6030 IMP.276 "Incore Thermocouple and Reactor Coolant System RTD Cross Calibration Test Procedures" showed that IMP.276 is essentially identical to IMP.076 and also did not require removal of the installed gauges. IMP.276 was performed prior to IMP.076 and used the same Heise gauges, so it appears the gauges were removed from Unit 2 because they were required for use in the Unit 1 test.

g. Surveillance related questions arose in two other areas. First, the licensee found misfigured locking devices in both units on safety injection and boron injection "flow balance" valves; these devices secure the valve stem/disc in a predetermined position. This finding could have had significant implications had subsequent investigation found the flow balances themselves out of tolerance; Unit 1 had over five months continuous power operation since last verified. Further investigation, however, established the safety injection valves adequately (though not nominally) configured to secure their position, and flow balance testing on the boron injection valves verified they were still correctly positioned as well. Testing on Unit 2 amounted to a repeat performance of earlier testing this outage, subsequent to which the Unit had not operated.

The other question focused on surveillance of seismic restraints, or "snubbers." The inspector had pointed out to the licensee in December 1985, (see I.E. Inspection Report No. 50-315/85036(DRP); 50-316/85036(DRP)) that a visual inspection of "inaccessible" Unit 1 snubbers was about to be overlooked. The inspection was performed and based on the results subsequent reinspection was permitted at an interval not to exceed 12 months plus or minus 25 percent. When the licensee shut Unit 1 down on May 28, 1986 and commenced ice condenser surveillance, which was not otherwise scheduled until September 1986, the inspector questioned whether snubber inspection was also planned. The ice condenser and snubber activities had both been planned for the same September outage. With ice condenser surveillances completed instead in June 1986, the frequency requirements associated therewith

would not require another outage till commencement of a scheduled refueling in about April 1987. Snubber inspection, however, can not wait that long. The licensee declined to add snubber surveillance to the current outage. The inspector indicated that a future request for exemption or alteration of snubber surveillance requirements (presuming the test could come due when there is no other reason for Unit shut down) would be difficult to justify.

No deviations, unresolved items, or open items were identified in this area. One violation was identified.

7. Reportable Events

The inspector reviewed the following Licensee Event Reports (LERs) by means of direct observation, discussions with licensee personnel, and review of records. The review addressed compliance to reporting requirements, and as applicable, accomplishment of immediate corrective action. If indicated "closed," the review showed appropriate corrective action to prevent recurrence had been accomplished in accordance with applicable requirements, or a generic issue was developed which will be tracked for further examination as an Unresolved Item or Open Item.

a. (Closed) LERs 315/85-020-00, 315/85-008-00, 316/85036-00, 316/85-010-00, 316/84-027-00, 316/84-022-00, 316/84-009-00.

These LERs pertain to isolation of one or another portion of the Carbon Dioxide Fire Suppression System without subsequently fully meeting the fire watch coverage requirements of Technical Specification Section (both Units) 3.7.9.3. The inspector reviewed each LER and verified that the safety significance was minor. However, the generic issue of inadequate compensatory measures for suppression capabilities known to be inoperable is considered an Unresolved Item pending review by an NRC fire protection specialist. (Unresolved Item No. 315/86022-02; 316/86022-02).

b. (Closed) LERs 315/85-061-00, 315/85-051-00, 315/85-036-00, 315/85-014-00, 315/85-001-00, 315/84-032-00, 315/84-032-01, 315/84-028-00, 315/84-027-00, 315/84-013-00, 315/84-003-00.

Although listed to the Unit 1 Docket, several of these items apply to both Units. In all cases, a fire barrier (door, damper, or foam seals) had knowingly been made inoperable and the required compensatory measures (hourly fire watch tours) were either not performed or were performed late, contrary to requirements of Technical Specification (both Units) 3.7.10. The inspector reviewed each LER and verified that the safety significance of each item appeared minor. However, the generic problem of inadequate compensatory measures for barriers known to be degraded needs to be reviewed by an NRC fire protection specialist. (Unresolved Item No. 315/86022-03; 316/86022-03).

c. (Closed) LERs 315/85-056-00, 315/85-028-00, 315/85-027-00, 315/85-024-00, 315/85-018-00, 315/85-013-00, 315/85-009-00, 315/85-006-00, 316/86-010-00, 316/86-004-00, 316/85-029-00, 316/85-027-00, 316/85-006-00, 316/84-016-00.

In all cases a presumably sound fire barrier (foam seal or door) was found inoperable. The seals were degraded or removed and the doors blocked open such that the seals or doors would not function as a fire barrier or to maintain the required concentration of carbon dioxide fire suppressant in the zone. The inspector reviewed each LER and verified that the safety significance of each individual item was minor. However, the number of LERs may indicate that the licensee has a generic problem preventing fire barriers from becoming unknowingly degraded, threatening compliance with technical specifications. This is an Unresolved Item pending review by an NRC fire protection specialist (Unresolved Item No. 315/86022-04; 316/86022-04).

d. (Closed) LER 315/84-033-00 and 315/84-033-01: Inoperable Fire Doors. A number of fire doors were inoperable following a surveillance, however, the test personnel did not declare these doors inoperable. The licensee concluded that the test was adequate but that the test personnel improperly reported/interpreted the results. The test personnel were reinstructed on the acceptance criteria. This LER is considered closed. The hardware related corrective action will be reviewed with LER 315/85-029-00, which is discussed below as requiring a supplemental report.

e. (Open) LERs 315/85-029-00: Inoperable Fire Doors.
315/85-070-00: Inoperable Fire Barrier.
316/85-020-00: Inoperable Fire Dampers.

The licensee was reminded that the "Supplemental Report Expected" block was marked. The expected supplemental submission date has passed and the supplemental LERs have not been sent.

f. (Closed) LER 315/85-071-00: Suspended Fire Watch Tour. Surveillance testing of the plant carbon dioxide fire protection system resulted in an accidental system actuation and suspected discharge to the 573 foot level of the Auxiliary Building. Fire watch tours of the 573 foot level were suspended until it was determined safe to descend to that level, causing one required fire watch hourly tour to be missed. The fire detection system for the area remained operable. The inspector has no additional concerns pertaining to this LER.

g. (Closed) LERs 315/86-001-00, 315/85-055-00, 315/85-062-00, 315/85-066-00, 316/85-017-00, 316/85-031-00, 316/85-034-00, 316/85-039, 316/86-003-00, 316/86-006-00.

A number of Engineered Safety Features Actuation Signals (containment purge isolations) were caused by "high" alarms on either the containment particulate, noble gas or area monitors. Typically, these signals appeared to be the result of increased containment radioactivity due to reactor startup. In each case, the purge system was operable but not in service. At the time of these events, the technical specifications required a setpoint of no greater than two times "normal" reading, with "normal" defined within licensee procedures as the average reading for the previous 24 hours. The licensee used a pre-alarm to alert the operators of increasing containment activity. However, in certain cases, when the pre-alarm actuated, sufficient time was not available to calculate and enter a new setpoint. The licensee ultimately decided that the very frequent and time consuming resetting of various setpoints, particularly considering the "high" values so derived were neither high nor alarming in any absolute sense, was counterproductive. Consequently, new, permanent alarm setpoints, relating to continuous 10 CFR 20 release rate limits, were derived. These are typically more than an order of magnitude higher values than those which resulted in the subject LERs. The licensee requested a technical specification change on January 21, 1986 (letter AEP:NRC:0956A) to incorporate the more meaningful setpoints. This technical specification change was approved on April 22, 1986.

h. (Closed) LER 316/85-038-00: Engineered Safety Features Actuation (containment purge isolation signal) due to personnel error. While entering a new actuation setpoint, the technician entered the wrong exponent value (minus three versus minus two) which resulted in the actuation. The technician involved was counselled. A review of LERs shows this item is not repetitive.

i. (Closed) LERs 316/85-041-00, 316/85-041-01, 316/85-040-00, 316/85-040-01: Failures in Containment Area Radiation monitors resulted in Engineered Safety Features Actuation Signal (containment purge isolation). The licensee could not determine the exact cause, however, the manufacturer recommended replacement of selected components. The components were replaced. The failures have not reoccurred.

j. (Closed) LER 316/85-030-00: Engineered Safety Features Actuation (containment purge isolation signal) due to a small packing leak for a resistance temperature detector bypass loop valve. When this actuation was generated the purge system was not in use. In this case, the actuation alerted the operators to the leaking primary coolant valve.

k. (Closed) LER 315/85-023-00: Travel of Heavy Loads Over Spent Fuel Pool. The Technical Specifications prohibited loads in excess of 2500 pounds from travel over fuel assemblies in the storage pool. It was unclear if this was intended to apply to the empty weight of the main hoist load block which moves in unison with the auxiliary hoist used in handling fuel. Unit 1 technical specifications amendment No. 93 and Unit 2 amendment No. 79, dated February 24, 1986 excluded this main load block, which weighs about 4.25 tons, from this restriction, provided the main hoist is deenergized and carrying no load. This provision expires February 28, 1987, by which time the licensee must complete a load block analysis and propose new technical specifications as appropriate.

l. (Closed) LER 315/85-065-00: Reactor Trip. Unit 1 tripped from 78 percent power at 2243 hours on November 25, 1985 due to a Power Range (PR) negative rate trip (two out of four logic). At the time of the trip, one of four Power Range Nuclear Instruments (PRNI) was out-of-service for calibration. The associated bistables (including negative rate) were tripped. Whenever one PRNI is out-of-service the licensee is required to manually calculate the Quadrant Power Tilt Ratio (QPTR). While taking the necessary PRNI current readings, using a fluke digital amperage meter, a negative spike occurred when the meter probe was removed from one PRNI drawer. This resulted in satisfying the two of four logic for a negative rate trip. The licensee review could not determine why this spike occurred. To prevent recurrence, the procedures were changed to identify that the installed amp meters are the preferred means of data acquisition. After the trip, the Turbine Driven Auxiliary Feedwater (TDAFW) pump automatically started (as designed), however, the pump went to maximum speed and failed to respond to the control room speed controller. This was caused by a break in the air line from the controller to the pump governor. The break was apparently caused by operators using the line as a support when checking oil level. To prevent recurrence, the copper air line was replaced with stainless steel and the line was moved. In addition, the operations sequence monitor did not function entirely as designed; a job order was written. During the inspector's reviews, a number of inconsistencies concerning readings from the P-250 computer were noted, however, the licensee's written post-trip review did not explain these. These were brought to the attention of the Shift Technical Advisors who perform reactor trip reviews for the licensee. At the management interview the inspector discussed the importance of reviewing all data and explaining all inconsistencies, however minor they may appear.

m. (Open) LER 315/86-006-00: Time Response Testing of Reactor Trip from Reactor Coolant Pump Undervoltage was Inadequate Due to Procedural Deficiency. Initial review of the LER resulted in discussion among Region III and Resident Office personnel. These discussions c oncluded that the LER did not provide sufficient information to allow a knowledgeable, but previously uninformed, individual the opportunity to adequately assess the problem. The licensee was advised to revise the LER. This was discussed at the management interview.

No violations or deviations, and no open items were identified. Three unresolved items were identified.

8. Regional Requests

a. The NRC Region III office requested that the inspector re-review the licensee's response to IEB 81-03 "Flow Blockage of Cooling Water to Safety Components by Corbicula (Asiatic clams) and Mytilus (Mussel)" and review the licensee response to Institute of Nuclear Power Operations' (INPOs') Significant Operating Event Reports (SOER) 84-01, "Biofouling of Cooling Water Heat Exchangers." In 1981 the licensee concluded, based on an environmental consultant's review, that Corbicula and Mytilus (lives in salt water) were not known to exist in Lake Michigan; however, the consultant recommended periodic sampling since Corbicula were known to exist in Lake Erie. During dives of the plant intake structure, a diver found a dead Corbicula; confirmed by the environmental consultant on January 1, 1986. To date the licensee has not had problems with flow blockage due to Corbicula. The licensee program appears to focus on visual inspection with additional measures when the threat is evident. This information was sent to Region III on June 6, 1986.

b. The Region requested that the inspector review the licensee's plans for building an onsite low-level waste storage facility. On June 2, 1986 cognizant licensee corporate personnel informed the inspector that no onsite low-level waste storage facility is currently planned for the Donald C. Cook site. This information was sent to Region III on June 4, 1986.

No violation, deviations, unresolved items or open items were identified.

9. Miscellaneous Inspection

a. The licensee inspection of jumpers installed in Limitorque brand valve operators pursuant to IE Information Notice 86-03 has identified six valves (three per unit) with questionable environmental qualification. The inspection is complete for Unit 2 and is ongoing for Unit 1. The valves are:

Unit 1

(1) IMO-54 "Loop 4 BIT Isolation Valve."

(2) IMO-315 "Loops 1 and 4 Hot Leg Injection Isolation Valve."

(3) IMO-316 "Loops 1 and 4 Cold Leg Injection Isolation Valve."

Unit 2

(1) WMO-714 "Service Water Outlet Valve for East Containment Spray Heat Exchanger."

(2) WMO-724 "Service Water Inlet Valve for AB-Diesel Generator Auxiliary Cooling - Alternate Feed."

(3) WMO-726 "Service Water Inlet Valve for CD-Diesel Generator Auxiliary Cooling."

The Unit 1 valves are located inside the containment and the Unit 2 valves are located outside containment. Since these valves were found after the deadline date for environmental qualification, this information has been provided to Region III for review and determination if enforcement action is appropriate. Pending Region III review, this is an Unresolved Item. (Unresolved Item 315/86022-05; 316/86022-05).

b. During resident inspector training on the security program by a Region III security specialist, an apparent violation of the Security Plan was identified. This violation is discussed in Inspection Report No. 50-315/86024(DRSS); 50-316/86024(DRSS).

No violations, deviations or open items were identified in this area. One unresolved item was identified.

10. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. Unresolved Items disclosed during the inspection are discussed in Paragraphs 7.a, 7.b, 7.c, and 9.a.

11. Management Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) on June 13, 1986 to discuss the scope and findings of the inspection as discussed below.

a. The apparent violation was specifically discussed (Paragraph 6.f.).

b. The failure of a contractor to seek assistance when he alarmed a portal monitor (Paragraph 2.g.).

c. The Unit 1 reactor trip of May 28, 1986 (Paragraph 4.).

d. The performance of mechanical snubber visual inspection (Paragraph 6.g).

e. The reminder that a revision to three LERs had been promised (Paragraph 7.e).

f. The need to revise LER 315/86006-00 was discussed (Paragraph 7.m).

g. The consolidation of fire protection LERs into three unresolved items (Paragraph 7.a, 7.b, and 7.c).

h. The two Regional Requests (Paragraph 8.a and 8.b).

i. The unresolved item pertaining to Limitorque jumpers (Paragraph 9.).

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