

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-315/92006(DRP); 50-316/92006(DRP)

Docket Nos. 50-315; 50-316

License Nos. DPR-58; DPR-74

Licensee: Indiana Michigan Power 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: February 18 through March 31, 1992

Inspectors: J. A. Isom J. F. Harold
D. G. Passehl C. N. Orsini
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4-16-92
Date

Inspection Summary: Inspection from February 19 through March 31, 1992
(Report Nos. 50-315/92006(DRP); 50-316/92006(DRP))

Areas Inspected: Routine unannounced inspection by resident and region-based inspectors of: plant operations; maintenance and surveillance; engineering and technical support; reportable events; and NRC Bulletins and Generic Letters.

Results: No violations or deviations were identified in any of the five areas inspected.

The inspection evaluated a loss of automatic pressurizer level control in Unit 2 caused by a valve restoration error. Although the operators response to this event was a strength, the inspector determined that the licensee's investigation into the event was weak.

The inspection also disclosed a strength in the quality of the root cause analysis and corrective maintenance performed on the Unit 1 Emergency Boration To Charging Pump Suction Shutoff Valve (1-QMO-410).



DETAILS

1. Persons Contacted

*A. A. Blind, Plant Manager
J. E. Rutkowski, Assistant Plant Manager-Technical Support
*L. S. Gibson, Assistant Plant Manager-Projects
*K. R. Baker, Assistant Plant Manager-Production
*B. A. Svensson, Executive Staff Assistant
*J. R. Sampson, Operations Superintendent
*T. K. Postlewait, Design Changes Superintendent
G. A. Weber, Plant Engineering Superintendent
T. P. Beilman, Maintenance Superintendent
*G. A. Tollas, Acting Safety & Assessment Superintendent
P. G. Schoepf, Project Engineering Superintendent
L. H. Vanginhoven, Site Design Superintendent
J. T. Wojcik, Chemistry Superintendent
D. C. Loope, Radiation Protection Supervisor
P. F. Carteaux, Training Superintendent
M. L. Horvath, Quality Assurance Supervisor
L. J. Matthias, Administrative Superintendent

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

*Denotes some of the personnel attending the Management Interview on April 7, 1992.

2. Plant Operations (71707, 71710, 42700)

The inspector observed routine facility operating activities as conducted in the plant and from the main control rooms. The inspector monitored the performance of licensed Reactor Operators and Senior Reactor Operators, of Shift Technical Advisors, and of Auxiliary Equipment Operators including procedure use and adherence, records and logs, communications, and the degree of professionalism of control room activities.

The inspector reviewed the licensee's evaluation of corrective action and response to off-normal conditions. This included compliance with any reporting requirements.

The inspector noted the following with regard to the operation of Units 1 and 2, during this reporting period:

a. Unit 1 Status:

Unit 1 operated routinely at approximately 100 percent power throughout the inspection period except for a brief period when

the licensee allowed a slight power decrease when dilution was unavailable during maintenance on valve 12-CS-140, a cross-tie valve for the hold up tanks in the Chemical and Volume Control System.

The unit began to exhibit a noticeable increase in the steam generator primary to secondary leak rate this inspection period. Although the current leak rate was well below administrative limits, the licensee has been closely monitoring the leak rate since a very slow increase was measured during the past several months. On March 27, samples from the steam jet air ejector radiation monitor showed that the calculated leakrate took about a 50 percent step increase, to a value of 0.0027gpm. The licensee has increased surveillance to every eight hours in order to detect any further changes in the leak rate. If the rate reaches 0.1 gpm, action will be taken to shut down the unit.

The unit is scheduled for a refueling outage beginning on June 13, 1992. The licensee plans to operate at 100 percent power until an RCS boron concentration of approximately 30 ppm is attained and then to coast down in power at about 1 percent a day from that point to the scheduled shutdown date. The coastdown is scheduled to begin on April 16, 1992 and would result in approximately 48 percent power on the shutdown date of June 13.

b. Unit 2 Status:

Unit 2 entered the inspection period at 70 percent power due to concerns for leaks on the drain lines on the high pressure turbine.

On February 22, 1992, the licensee commenced a reactor shutdown for the scheduled refueling outage. That same date, the West Residual Heat Removal (RHR) pump was removed from service for mechanical seal replacement. The pump was returned to service on February 25, 1992, and a cooldown to Mode 5 began the same day. A small leak developed on the West RHR pump at 2-RH-111W (equalizing valve at the RHR pump suction) and the pump had to be removed from service again for repairs.

On February 26, 1992, the West RHR pump was returned to service and cooldown to Mode 5 resumed. The cooldown continued and the unit entered Mode 5 that same day. Also that same day, a leak of 4-5 gpm was discovered on the west RHR pump at IFC-325-V1 (elbow flow tap at the discharge of the RHR pump) and the pump was removed from service again. The leak was repaired and the West RHR pump was declared operable on February 27, 1992.

The unit was de-fueled on March 17, 1992, and is expected to be reloaded on April 18, 1992.

c. Loss Of Automatic Pressurizer Level Control At Power Caused By Operator Error During Valve Restoration

The inspector reviewed the licensee's completed investigation performed when a non-licensed Auxiliary Equipment Operator (AEO) incorrectly restored the valve lineup for the Unit 2 East Coolant Charging Pump (2E-CCP). Valve 2-CS-300E (2E CCP Discharge To Reactor Coolant Pump Seal Water Injection Filters Inlet Valve) was placed in the open position instead of the sealed closed position as required by the clearance restoration lineup sheet.

The inspector reviewed the investigation to determine the significance of the event, and to review the quality of the licensee's investigation. Although, the inspector determined the event had minor operational safety significance, he concluded that the licensee's overall investigation into this event was weak.

The inspector determined that a reactor trip and subsequent challenge to safety systems from loss of automatic pressurizer level control under these conditions was unlikely because the condition would have to exist for over 4 hours for the pressurizer level to reach the high level trip point. This was based on about a 20 gpm net flow into the reactor coolant system (RCS) caused by mismatch between RCS makeup and letdown. There are about 125 gallons per one percent level change in the pressurizer.

The inspector found that the control room operators performed well given their initial indications. When 2-CS-300E was opened, a flowpath was created which bypassed the discharge flow control valve, 2-QRV-251, and the normal charging path flow instrument, 2-QFI-200. The opening of 2-CS-300E valve also caused a condition in which the indication from the flow instruments did not agree with the changes in pressurizer level. Although the indicated charging flow had decreased from about 132 gpm to about 50 gpm, the Volume Control Tank makeup valve had opened, indicating that the charging flowrate had increased. The operators also noticed that the pressurizer level was increasing.

The operators first believed that the flow instrument, 2-QFI-200, had failed and they took manual control of the charging pumps discharge flow control valve, 2-QRV-251, as stated in their abnormal operating procedure "Malfunction of Pressurizer Level Control", 2-OHP 4022.003.002, Rev 4, August 28, 1989. Discharge flow control valve, 2-QRV-251, is controlled by the flow instrument, 2-QFI-200, and automatically positions to throttle charging flow to maintain the pressurizer in the programmed level. Operators shut valve 2-QRV-251 until the indicated charging flow reached 0 gpm on QFI-200. In parallel with those actions, the Unit Supervisor instructed an operator in the control room to page the AEO performing the clearance restoration (No. 2910848) on the charging pump to investigate the abnormal charging flow indications.



Following a discussion with the control room operator, the AEO realized that he may have mistakenly opened 2-CS-300E. When realizing his mistake, the AEO left to reclose 2-CS-300E without telling the Reactor Operator what he was going to do. Following closure of 2-CS-300E, the operators were able to regain automatic pressurizer level control and they restored the pressurizer to the program level.

The licensee's investigation found the primary cause of this event to be personnel error on the part of the AEO. However, the inspector found that there were other factors that may have contributed to the event which were not discussed in the problem report investigation. Also, the inspector's review of the problem report and the licensee's procedures raised several questions regarding practices of taking procedures and clearances into contaminated areas and aspects of valve lineup evolutions.

Items not discussed in the licensee's investigation included:

- The significance of this event and discussion regarding what could have happened had the valve misposition went unnoticed.
- Whether a pre-lineup brief was conducted prior to performing the clearance restoration, as required by the procedure entitled "Conduct of Operating: Valve Lineups and Position Control", OHI-4014, Rev.3, September 7, 1990, step 3.3.1.
- The location of the valve restoration sheet when the AEO opened the valve.
- The location of the AEO when he was called by the control room.
- Whether the AEO violated the Radiological Work Permit to correct his mistake. Valve 2-CS-300E was located just within a roped off contamination area, and required the wearing of Anti-C clothing.
- The sequence of valve manipulations.

The inspector also found the following concerns were not clear and need further review:

- Management's expectations were unclear with regard to taking procedures and clearances into contaminated areas. There was no procedure or instruction to determine whether the practice is prohibited or discouraged.
- Expectations were unclear with regard to the breaking of a seal to change a valve position. When the tag was hung initially on 2-CS-300E, the valve was in a "sealed closed"

position, but the clearance stated the valve was required to be "closed." Both the person placing and verifying the clearance had initialed the clearance form stating that it was in the "closed" position. The licensee's investigation assumed there was a seal on the valve which should have been a barrier to prevent the AEO from making this mistake. Safety-related and administratively controlled valves are required to be restored with the seals in place.

- The valve restoration sequence the AEO followed was unclear. This could have been a factor contributing to the error since two out of the first three valve manipulations required taking the respective valves from the closed to the sealed open position. If the AEO performed these valve manipulations prior to repositioning 2-CS-300E, he may have been somewhat preconditioned for the error.
- Controls relating to the use of abbreviations on the clearance form were unclear. The required position for 2-CS-300E during restoration of the clearance was stated as "SCL BLK". This abbreviation was not defined on the bottom of the form. According to licensee procedure "Conduct of Operations: Valve Lineups and Position Control", OHI-4014, Rev.3, September 7, 1990, step 3.5.1, abbreviations on valve lineup sheets are required to be spelled out. The clearance form is not a valve sheet as referenced in the procedure, but it did function in place of the valve lineup sheet. The inspector questioned whether valve abbreviations should be spelled out on the clearance form.

Finally, the list of symptoms for the abnormal pressurizer level found in the "Malfunction of Pressurizer Level Control" procedure did not list valve 2-CS-300E as being open. This was discussed with the licensee for consideration during any upcoming procedure revision.

Further evaluation of the above issues is required to ascertain whether the licensee's evaluation and corrective actions were adequate. Pending completion of such further evaluation, this matter is considered an Unresolved Item (50-316/92006-01).

One Unresolved item was identified. No violations, deviations, or open items were identified.

3. Maintenance/Surveillance (62703, 61726, 42700)

The inspector reviewed maintenance activities as detailed below. The focus of the inspection was to assure the maintenance activities 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 activities were inspected:

a. Unit 1 Emergency Boration Valve (1-QMO-410) Damaged When Operated With Failed Torque Switch Roll Pin

The inspector's review of the licensee's investigation into the failure of and corrective maintenance on Unit 1 emergency boration valve, 1-QMO-410, found that the investigation was thorough and identified the cause for the valve failure. In addition, the inspector found that the repair to the valve was performed well. The licensee's investigation into the failure of the emergency boration valve during its weekly surveillance test found that the supply breaker had tripped. The inspector reviewed this corrective maintenance activity because the licensee had experienced previously similar thermal overload trip problems with this valve in April 1991 (NRC Inspection Report 315/91010; 316/91010 (DRP)). The inspector's review of the licensee's investigation found that the sheared roll pin on the torque switch actuator was the cause of the emergency boration valve motor operator trip. The inspector concluded that the cause of the thermal overload trips of 1-QMO-410 in April 1991 and on June 11, 1991 were unrelated events because the thermal overload trip on April 1991 was identified to be caused by a torque switch which was found to be set too high and the thermal overload trip on June 11, 1991, was caused by a sheared roll pin on the torque switch actuator assembly. Additionally, the inspector review and discussion with the plant staff found that they had inspected the torque switch assembly after the failure of the valve on June 11, 1991, and found it be set correctly.

The licensee determined the roll pin was most likely broken when the valve drive sleeve assembly was inadvertently declutched from the motor and the spring pack/torque switch assembly with the valve in the fully closed or torque seated position. When the valve was declutched, it released the energy stored in the spring pack, caused rapid rotation of the torque switch shaft and sheared the roll pin due to the rapid acceleration, or deceleration.

The licensee was unable to determine who declutched the actuator, or the time it occurred. But they did determine that the problem at worst did not exist for longer than a week because the operator had successfully completed the weekly surveillance test on the valve during the previous week. Plant operators were performing a weekly surveillance entitled "Boration System Valve Position Verification and Testing", 1-OHP-4030.STP.002V, Rev.4, June 11, 1991, when the failure occurred.

Because of the potential failure problems with the roll pins, identified in a December 11, 1990 letter from Limitorque which identified potential failures of roll pins in SMB-00 actuator torque switches under certain conditions, the licensee has ordered improved design torque switches. The inspector learned through discussions with the licensee's motor-operated valve engineer that these improved torque switch should be available in approximately 3 weeks. In the interim, the licensee wrote Plant Manager Standing Order 121, instructing the operations staff to ensure the valve is backseated prior to being declutched to prevent the roll pin from being broken.

The maintenance personnel found that upon disassembly, there were extensive damage to the actuator casing, motor pinion, worm gear, spring pack, and other internal parts. The inspector's review of the maintenance records and discussion with the licensee found that all damaged parts including the torque switch were replaced. The rebuilt actuator and torque switch performed satisfactorily upon post-maintenance testing and performance of "Boration System Valve Position Verification and Testing." Although the valve was verified to function properly during the surveillance, diagnostic testing revealed that the valve stem may have been slightly bent due to the overstressed condition. Due to a lack of available parts, a separate Action Request (No. A8682) was written to inspect and repair the valve stem during the upcoming Unit 1 refueling outage.

b. Unit 2 Emergency Boration Valve (2-QMO-420) Trip On Thermal Overload During Testing

The inspector reviewed the licensee's investigation into the failure of Unit 2 emergency boration valve, 2-QMO-420, to determine whether the failure of this valve was related to problems with the Unit 1 emergency boration valve, 1-QMO-410. The inspector was not able to determine whether the thermal overload trips on 2-QMO-420 and 1-QMO-410 were related because the licensee was not able to determine the cause for the thermal overload trip of 2-QMO-420. The cause of this event was indeterminate as the licensee's disassembly, inspection, and post maintenance test found nothing abnormal.

The maintenance staff performed their investigation under Action Request No. A14658. The inspector found through review of records that the licensee had performed numerous inspections and tests in an effort to find the cause of the thermal overload trip. All electrical inspections, including the thermal overload settings were found to be satisfactory. There are two thermal overloads for the motor-operator. Also, the operator manually cycled the valve and found no indication of mechanical binding. The motor-operator was energized and the valve was cycled electrically six times with recorded amperage readings matching those of the last Motor Operated Valve (MOV) test. The valve was returned to

service and no other operational problems have been observed to date.

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

4. Engineering and Technical Support (37828)

The inspector monitored engineering and technical support activities at the site and, on occasion, as provided to the site from the corporate office. The purpose of this monitoring was to assess the adequacy of these functions in contributing properly to other functions such as operations, maintenance, testing, training, fire protection and configuration management.

On March 19, 1992, the licensee at another utility found that their ice condenser doors were inoperable. The inspections by this utility revealed that the inner ice condenser concrete floor pad appeared raised up in various bays. The raised floor caused the metal flashing at the bottom of the doors to interfere with door operation.

In response to this concern, the inspectors performed an inspection on D.C. Cook Unit 2, which was in a refueling outage, to determine the possibility of a similar problem. The inspector concluded from this inspection that there was no indication of floor heaving or other structural interferences potentially adverse to the operability of the lower inlet doors. Additionally, the inspector found that each lower inlet door had been tested satisfactorily at the beginning of the current outage. The licensee performed further inspections and found that some bays had hair-line cracks and small chunks of grout missing from areas around the main structure support beams on the containment wall side of the ice condenser. The licensee wrote job orders to repair the missing grout areas. Unit 1 is scheduled to undergo similar inspections during its refueling outage scheduled to begin June 13, 1992.

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

5. Reportable Events (92700, 92720)

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, that immediate corrective action and appropriate action to prevent recurrence had been accomplished.

- a. (Closed) LER 316/90001-LL: UNPLANNED ESF ACTUATION (EMERGENCY DIESEL GENERATOR START DUE TO SENSED DEGRADED VOLTAGE) FROM CONTACT OF CONTROL CIRCUIT WIRES DUE TO INADEQUATE WORK PREPARATION.

On January 12, 1990, while Unit 2 was in MODE 5, an unplanned start of No. 2CD Emergency Diesel Generator (EDG) occurred. The

event occurred while an Instrument and Control (I&C) technician was performing calculations of degraded bus voltage relays for safeguards bus No. T21C. While a technician was lifting leads to defeat the automatic breaker opening function of bus tie breaker No. T21C, one lead accidentally contacted an adjacent lead, completing the circuit and causing the breaker to open. The normal offsite power to bus T21C was lost, which consequently started the Emergency Diesel Generator. Plant Operations personnel verified proper EDG response once it started and performed necessary recovery actions to restore the emergency bus configuration to its proper lineup.

There were no similar events which involved starting of the Emergency Diesel Generator caused by contact of energized wires due to personnel error. A caution statement for protecting adjacent leads to lifted wires was incorporated into the relay calibration procedure entitled "Class IE Time Delay Relay Calibration," **2 IHP 6030.IMP.273 Rev. 4, April 5, 1990 This LER is considered closed.

- b. (Closed) LER 315/90003-LL: PYRALARM FIRE DETECTION ZONE INOPERABLE WITHOUT REQUIRED FIRE WATCH DUE TO PERSONNEL ERROR.

On April 10, 1990, a pyralarm fire detection zone was rendered inoperable when the detection control panel was permeated by steam and water when a steam generator blowdown system safety valve lifted. The Unit Supervisor erroneously assumed a fire watch was already at the affected location and failed to declare the zone inoperable and post a roving fire watch. The zone was declared inoperable and a roving fire watch was posted to satisfy the Technical Specification (TS) Action Statement. The zone was inoperable without the required roving fire watch for three hours and 35 minutes.

The licensee's corrective actions included discussing the event with the involved shift personnel; writing an Operations Department Standing Order (No. OSO.096), "Posting Continuous and Roving Fire Watches," Rev. 0., April 12, 1990, to clarify requirements for posting fire watches; and, repairing the affected detection control panel. No similar events have occurred to date and this item is considered closed.

- c. (CLOSED) LER 315/90005-LL: TECHNICAL SPECIFICATION (TS) CALIBRATION INTERVAL EXCEEDED DUE TO INCORRECT ENTRY INTO COMPUTERIZED SCHEDULAR PROGRAM

During a routine QA audit completed on July 24, 1990, it was discovered that the grace period requirement of the 18-month surveillance interval for TS 4.3.3.10.2, Table 4.3-9 Item 3e was exceeded between July 7, 1986 and July 20, 1988. This surveillance concerns the calibration of the Auxiliary Building

Ventilation System Unit Vent Sampler Flow Rate Measuring Device, VFS-1521.

The licensee's plant surveillance scheduling is accomplished via a computer software package. The computer scheduler tracks both TS requirements as well as non-TS (Preventive Maintenance) items. When VFS-1521 was initially added to the scheduler, it was tracked under non-TS requirements, as it was not required by TS at the time. At a later time, TS were changed to include VFS-1521, but the scheduler was not altered to reflect the TS change. As a result, the scheduled calibration of VFS-1521 was shown as non-TS and the significance of the subsequent delay in calibration was not noted. The calibration was completed 28 days after the grace period had expired. The results of the calibration showed no adverse affects to the instrument due to the extended time interval and that the instrument remained within specifications during this time frame. The associated Unit 2 instrument, VFS-2521 was also found on the non-TS list, but calibration history shows that all TS requirements were met.

The instruments for both units were transferred to the TS list on the scheduler, and the licensee performed a review and found no additional discrepancies. They also determined that proper controls are in place to prevent recurrence. This LER is considered closed.

- d. (Closed) LER 315/90011-LL: MISSED STEAM GENERATOR PRESSURE CHANNEL CHECK SURVEILLANCE DUE TO PERSONNEL ERROR.

On October 4, 1990, an operator conducting the shiftly surveillance per 1-OHP 4023.STP.030 incorrectly logged the steam generator levels for loop 3 and loop 4 in the steam generator pressure channel section of the procedure data sheet. The review of the surveillance by the operator and the unit supervisor did not identify the logging error. Consequently the Technical Specification 3.3.2.1 (Engineering Safety Feature Actuation System Instrumentation) surveillance requirement, to perform a channel check of the redundant steam generator pressure channels, was not completed.

The cause was personnel error. The operator recording on the shiftly surveillance data sheet failed to correctly record and review the steam generator pressure channel data.

When the steam generator pressure channel surveillance recording error was identified, a channel check between the redundant loop 3 and loop 4 pressure channels was satisfactorily completed. In addition, the operator and the unit supervisor were counselled by their shift supervisor. To date there have been no similar occurrences; this item is closed.

- e. (Closed) LER 316/90005-LL: MISSED A.C. ELECTRICAL POWER SOURCE BREAKER ALIGNMENT SURVEILLANCE DUE TO PERSONNEL ERROR.

On June 21, 1990, and June 28, 1990, an A.C. electrical power source required by Technical Specification (TS) 3.8.1 (A.C.Sources) was inoperable for clearance work. With the A.C. electrical source inoperable, the TS action statement required the operators to determine the operability of the circuits between the offsite transmission network and the onsite Class 1E distribution by verifying the correct breaker alignments and indicated power availability. This special alignment surveillance was not performed.

The cause was personnel error. When the unit supervisor remembered the surveillance requirement it was completed immediately. The operations department superintendent held a critique for each of the missed surveillance events with the involved unit supervisors and shift supervisors and reinforced to each of the operators their responsibility and authority to ensure that the facility is operated within the licensed commitments. To date there have been no similar occurrences; this item is closed.

- f. (Closed) LER 315/90004-LL: INADVERTENT OPERATION OF THE WRONG CONTROL SWITCH DUE TO PERSONNEL ERROR RESULTED IN OPENING OF THE ICE CONDENSER LOWER INLET DOORS.

On May 8, 1990, a reactor operator inadvertently started a containment air recirculation fan (CEQ fan) instead of the intended hydrogen recombiner during surveillance testing. The fan operated for approximately five seconds, which created sufficient differential pressure across the lower ice condenser inlet doors to open the doors.

The cause was personnel error. The ice condenser was restored to operable condition by closing the lower inlet doors and restoring the ice condenser temperature to within the TS limits. The plant personnel were informed of management's expectations concerning work practices to prevent similar events. To date there have been no similar occurrences, this item is closed.

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

6. NRC Bulletins; Notices and Generic Letters (92703)

The inspector reviewed the NRC communications listed below and verified that: the licensee has received the correspondence; the correspondence was reviewed by appropriate management representatives; a written response was submitted if required; and, plant-specific actions were taken as described in the licensee's response.

- a. (CLOSED) NRC BULLETIN (NRCB) 89-01, FAILURE OF WESTINGHOUSE STEAM GENERATOR TUBE MECHANICAL PLUGS, INCLUDING SUPPLEMENT 1 AND 2 (315/89001-BB; 316/89001-BB):

The inspector reviewed NRC Bulletin 89-01, which requested that the licensee determine whether certain plugs supplied by Westinghouse were installed in their steam generators and, if so, that an action plan be implemented to ensure that these plugs would continue to provide adequate assurance of reactor coolant system pressure boundary integrity under normal operating, transient, and postulated accident conditions. The inspector also reviewed Supplement 1, which provided additional information regarding recent problems with steam generator plugs provided by Westinghouse and Supplement 2, which requested the licensee to include all Westinghouse mechanical plugs fabricated from thermally treated Inconel 600 in their evaluation.

Licensee correspondence responding to the Bulletin and its Supplements, and to written evaluations and written or oral requests for additional information from the NRC Office of Nuclear Reactor Regulation (NRR) was also reviewed as follows: letter dated June 20, 1989; letter dated May 30, 1991; and, letter dated October 18, 1991. The NRR correspondence was dated June 4 and September 10, 1991.

The inspector found that the licensee replaced 269 steam generator plugs on the Unit 1 hot legs affected by the Bulletin during a refueling outage which occurred between October 20, 1990, and January 26, 1991. These new plugs were made with thermally treated Inconel 690. The licensee plans to remove 244 plugs from the Unit 1 hot legs during the 1992 refueling outage. The remaining plugs in the hot legs are scheduled to be replaced before exceeding their effective full power day limits. After the 1992 refueling outage, the next plug removal is projected to be in the year 2005. Unit 2 has newly installed steam generators with no mechanical plugs installed and therefore, NRCB 89-01 does not apply. Based on the above review, the licensee's program for replacement of mechanical plugs, and completion of NRR review, NRCB 89-01 is closed.

- b. (CLOSED) GENERIC LETTER 88-11, NRC POSITION ON RADIATION EMBRITTLEMENT OF REACTOR VESSEL MATERIALS AND ITS IMPACT ON PLANT OPERATIONS (315/88011-GL; 316/88011-GL)

The inspector reviewed GL 88-11, July 12, 1988, which requested the licensee to submit the results of their technical analysis, and the licensee response, December 5, 1988. The response concluded that the Cook Unit 2 reactor vessel materials in the beltline region are projected to retain sufficient toughness to meet the current requirements of 10 CFR 50 Appendix G for the duration of the design life of the unit, 32 EFPY. For Unit 1, the response concluded that the plot of upper shelf energy decrease

versus fluence, indicates adequate toughness for the surveillance capsule specimens of the controlling weld material through 32 EFY. NRR is reviewing the response. This item is closed with regard to Region III review.

- c. (CLOSED) GENERIC LETTER 88-14, INSTRUMENT AIR SUPPLY SYSTEM PROBLEMS AFFECTING SAFETY-RELATED EQUIPMENT (315/88014-GL; 316/88014-GL)

The inspector reviewed the following documents: GL 88-14, August 8, 1988, which requested that the licensee review NUREG-1275, Volume 2, "Operating Experience Feedback Report - Air Systems Problems," and perform a design and operations verification of their instrument air system; the licensee response, February 24, 1989; NRR evaluation of the response, July 25, 1990, which closed this item provided two commitments are implemented; and the licensee response confirming the additional commitments, August 24, 1990. Based on a review of the above, and completion of NRR review, this item is considered closed.

7. Management Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) on April 7, 1992, to discuss the scope and findings of the inspection. In addition, the inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any such documents or processes as proprietary.

The Unresolved Item (paragraph 2.c) was discussed at some length. The licensee had not concluded his review of the inspector's concerns and was not prepared to concur that their evaluation had been weak. The licensee committed to perform additional review and to supply more information or have more discussions on this matter.