July 27, 2001

Mr. Robert J. Barrett
Vice President, Operations-IP3
Entergy Nuclear Northeast
Indian Point 3 Nuclear Power Plant
Post Office Box 308
Buchanan, NY 10511

SUBJECT: INDIAN POINT 3 - NRC INSPECTION REPORT 50-286/01-05

Dear Mr. Barrett:

On June 30, 2001, the NRC completed an inspection at Indian Point 3 nuclear power plant. The enclosed report documents the inspection findings which were discussed on July 19, 2001, with Mr. Joe DeRoy and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

No findings of significance were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room **or** from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Curtis J. Cowgill, Chief
Projects Branch 6
Division of Reactor Projects

Docket No. 50-286
License No. DPR-64

Enclosure: Inspection Report No. 50-286/01-05
Attachment: Supplementary Information

cc w/encl:

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J. Knubel, Vice President Operations Support
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.	50-286
License No.	DPR-64
Report No.	50-286/01-05
Licensee:	Entergy Nuclear Northeast
Facility:	Indian Point 3 Nuclear Power Plant
Location:	P.O. Box 308 Buchanan, New York 10511
Dates:	May 20 - June 30, 2001
Inspectors:	Peter Drysdale, Senior Resident Inspector Lois James, Resident Inspector Michael Modes, Senior Reactor Inspector Suresh Chaudhary, Senior Reactor Inspector
Approved by:	Curtis J. Cowgill, Chief Projects Branch 6 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000286-01-05; on 05/20/01 - 06/30/01; Entergy Nuclear Northeast; Indian Point 3 Nuclear Power Plant, Resident Inspection.

The inspection was conducted by resident and regional inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/index.html

A. Inspector Identified Findings

There were no findings of significance identified during this inspection.

B. Licensee Identified Violations

There were no licensee identified violations during this inspection.

TABLE OF CONTENTS

Report Details

SUMMARY OF PLANT STATUS

At the beginning of the inspection period, the Indian Point 3 plant was shutdown for refueling outage number 11 (RO-11). On May 23, 2001, the plant entered operating mode 3 (reactor coolant temperature >350F) and the reactor was taken critical on May 24. Later on May 24, the plant's main generator was connected to the grid, and the reactor achieved full power by May 28. On June 3, 2001, plant power was reduced to approximately 85% following the failure of a condensate pump motor. Following replacement of the motor and other maintenance, the plant was returned to 100% power on June 6, and maintained full power throughout the remainder of the inspection period.

1. REACTOR SAFETY
(Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness)

1R04 Equipment Alignment

a. Inspection Scope (71111.04)

On June 25, 2001, the inspectors performed a partial walkdown of the 31 and 33 trains of the Auxiliary Feedwater System (AFWS) using check-off list COL-FW-2, "Auxiliary Feedwater System." The purpose of the walkdown was to verify equipment alignment, and to identify any discrepancies that could impact the function of the AFWS and potentially increase risk. The 31 and 33 trains of the AFWS were chosen because the 32 auxiliary boiler feed pump (ABFP) was scheduled to be out of service for the calibration of room temperature control instruments (3PT-R20B, "ABFP Room Temperature Indication Calibration"). Test 3PT-R20B was subsequently rescheduled for June 26, 2001; however, the inspector did not repeat the partial walkdown.

On June 27, 2001, the inspectors performed a partial walkdown of the 31 train of the Residual Heat Removal (RHR) System using check-off list COL-RHR-1, "Residual Heat Removal System." The 31 train of the RHR system was chosen because the 32 train of the RHR system was out of service for preventive maintenance on the 32 RHR pump breaker cubicle.

During the period from June 6 - 29, 2001, the inspectors completed a full walkdown of accessible portions of the 125 voltage direct current (VDC) system to verify the correct equipment alignment, train separation, and system operability with the plant at full power. The 125VDC system was classified as a risk significant system in accordance with information in the Individual Plant Evaluation (IPE) for the IP3 Station. The IPE indicated that a 15% reduction in the nominal core damage frequency (4.4E-5) could be achieved if the 125VDC system performed perfectly.

The inspectors reviewed the following system documents as part of the walkdown, and used these documents as guidance to verify proper system alignment and operability:

- Design basis document IP3-DBD-307, "Design Basis Document for the 480VAC, 125VDC, 120V Vital AC Electrical Distribution Systems."

- DC Power System Quarter Quarterly Report, 1st Quarter 2001
- Check-off list COL-EL-3, “Instrument Buses and Distribution Panels”
- System operating procedure SOP-EL-3, “Battery Charger and 125 Volt DC System Operations”
- Off-normal operating procedure ONOP-EL-5, “Loss of DC Bus”
- Surveillance test procedure 3PT-W020, “Electrical Verification - Inverters and DC Distribution
- Protective tagging order (PTO) 01-1127, “31 and 32 DCPP Breakers Have Been Determined per Temporary Modification 94-01648-09"
- Drawings: 9321-F-30083, “Single Line Diagram, D.C. System”
  9321-LL-30412, Sheet 16, “125 VDC Power Panel 31"
  9321-LL-30412, Sheet 16A, “125 VDC Power Panel 32"
  9321-LL-30412, Sheet 17, “Distribution Panel DP-503"

The inspectors reviewed Technical Specifications (TS) Section 3.8.4, “DC Sources - Operating,” and Final Safety Analysis Report (FSAR) Section 8.2, “Electrical System Design.” The inspectors also reviewed outstanding maintenance activities, open work requests, outstanding corrective action program deficiencies, temporary modifications, and operator workarounds associated with the 125 VDC system. The inspectors also attended the licensee’s presentation of the system engineering quarterly report for the 125VDC system on June 7, 2001.

The inspectors reviewed 13 deviation/event reports (DERs) written on the 125 VDC system and discussed with operations personnel several repetitive battery charger ground alarms that occurred during 2001. All alarms had cleared without further problems, and the licensee initiated a trend DER to monitor the alarms and to investigate possible causes. On June 20, 2001, the inspectors accompanied performance monitoring personnel during the weekly surveillance (3PT-W013) of the station batteries and the Appendix R diesel generator. During the walkdown, the inspectors verified the proper amp-hour ratings for the installed batteries, the VDC and amperage ratings for installed fuses, the circuit breaker positions in all power panels and distribution panels, and the alignment and volt/amp readings on the battery chargers and static inverters in accordance the operators’ daily surveillance logs.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope (71111.05Q)

The inspector conducted tours of the plant to verify the availability and material condition of fire protection and suppression equipment in the plant equipment areas. The inspector also examined the programmatic controls for combustible and flammable material, and referred minor concerns regarding potential transient combustibles to the fire protection department, operations management, and “area owners” responsible for housekeeping.

- Service Water Pump and Zurn Strainer Areas
- 31, 32, 34 Battery Rooms
- All levels inside containment. On May 21, 2001, the inspectors were accompanied by the licensee's refueling containment coordinators in a complete walkdown of accessible areas inside containment following the last refueling outage. Minor amounts of debris were identified and turned over to the licensee for resolution.

b. Findings

No findings of significance were identified.

1R08 In-service Inspection

a. Inspection Scope (71111.08)

The inspector performed an inspection of Nondestructive Evaluation (NDE) activities at Indian Point 3 (IP3) by reviewing the results of the visual, magnetic particle, and ultrasonic inspection of the reactor vessel closure head studs. The NDE resulted in a DER which appropriately disposed of the linear indications noted, by visual inspection, in the unthreaded throat area of stud nos. 6 and 18. The inspector also reviewed the results of the ultrasonic inspection of the RHR system welds 31 and 32.

The inspectors reviewed the video recording of the remote visual inspection of the control rod drive mechanism (CRDM) stub-tube-to-reactor-head with the Entergy inspection personnel who performed the test. This inspection was performed with the insulation in place for the purpose of discovering any leaks at the head-to-tube weld. The remote visual inspection discovered a leaking housing mechanism that was subsequently repaired. All tube-to-head weld areas were inspected and no leaks were identified. The inspector discussed with Entergy technical staff their response to NRC Information Notice 2000-017, which provided information about a through-wall crack at the V. C. Summer plant on the first weld between the reactor vessel nozzle and hot leg piping. The inspector reviewed Entergy's actions which supported their conclusion that the IP3 reactor vessel was not susceptible to a similar failure. These actions included an American Society of Mechanical Engineers (ASME) ultrasonic testing (UT) inspection of the IP3 hot and cold leg nozzle welds during the previous refueling outage, which detected no cracks, and the use of calibration blocks containing imbedded flaws or crack like flaws in order to fine tune the ultrasonic inspection.

The inspectors also reviewed radiographs taken of the spent fuel cooling heat exchanger modification. Radiographs of welds in the closed cooling line 325, Package 97-00239-17 Welds 2,3, and 4, were reviewed for compliance with United States of America Standard (USAS) B31.1 1967. Weld 4 included a repair of the installation weld along with a subsequent re-radiography. The inspector reviewed the supporting documentation for a non-Code repair of service water (SW) line 1093. Line 1093 is the essential service water supply for all three emergency diesel generators. The inspector reviewed ASME replacement work request (WR) 00-01594-00 for the pump motor and bolting replacement to the expansion joint in the 35 SW pump discharge piping.

The inspectors reviewed DERs issued by the Inservice Inspection (ISI) organization during the last refueling outage. One of the DERs was generated because the ISI sketch did not correspond with the system drawing in correctly reflecting two pup pieces in the system making up the welds. This DER was appropriately resolved. The remainder of the DERs were issued to resolve inspection indications. Based on this review the licensee was identifying ISI problems at an appropriate threshold and entering them in the corrective action program and taking appropriate corrective actions.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope (71111.11)

On June 18, 2001, the inspectors observed a dynamic simulator requalification test for licensed operators in Crew C. The test was the first requalification training following the last refueling outage, and involved two simulator scenarios:

Lesson No. LRQ-SES-08, “Loss of Condenser Vacuum/Faulted SG”
Lesson No. LRQ-SES-18, “ATWS/Faulted SG”

Both simulated events were supervisor evaluated scenarios (SESs) observed by the assistant operations manager and the shift manager for Crew C. No performance deficiencies were identified by either manager; however, they did identify minor performance weaknesses that needed enhancement. The inspector attended the post-scenario critique conducted by the evaluators, and noted that the identified weaknesses were incorporated into the simulator and classroom training for the remainder of the week by the operator training organization. The inspector also reviewed the shift manager’s list of performance weaknesses he intended to emphasize during the requalification training.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope (71111.12)

The inspectors reviewed the periodic evaluations required by 10 CFR 50.65 (a)(3) for IP3 Station, to verify that structures, systems and components (SSCs) within the scope of the maintenance rule were included in the evaluations and balancing of reliability and unavailability was given adequate consideration. The inspectors reviewed the licensee's most recent periodic evaluation report. The periodic report covered the period from October 1998 through May 2001.

The inspectors reviewed the one safety significant system that remained in a(1) status to verify that; (1) goals and performance criteria were appropriate, (2) industry operating experience was considered, (3) corrective action plans were effective, and (4) performance was being monitored. The inspectors reviewed the following systems in (a)(2) status to verify that the licensee established performance criteria (PC) for these systems and periodically reviews the system performance to the established PC. Additionally, the inspector reviewed the licensee's assessment of the balance between reliability and availability for these systems:

System in (a)(1) status

- Engineered Safeguard Initiation Logic

Systems in (a)(2) status

- Instrument Air
- Component Cooling Water
- Containment Spray
- Service Water
- Containment Isolation
- Reactor Protection & Control

The inspectors also reviewed problems involving selected in-scope SSCs to assess the effectiveness of the maintenance program. The review included a sample of operating logs, system engineer data, system reports, deficiency reports, availability data, selected surveillance performance data, and selected maintenance-related data. The reviews focused on proper maintenance rule scoping, proper classification of SSC equipment failures, safety significance classifications, 10 CFR 50.65 (a)(1) and (a)(2) classifications, and performance criteria for SSCs classified as (a)(2). The inspectors reviewed NYPA's scoping documents, deficiency/event reports (DERs), and completed work orders. The following SSC deficiencies were reviewed:

- During routine operator rounds on June 11, 2001, the nuclear plant operator (NPO) discovered that flow controller FC-1135S for the 31 ABFP was not indicating properly and questioned whether the controller would be able to provide low flow protection for the pump. The inspectors reviewed the maintenance history of FC-1135S by reviewing the licensee's response to DER 01-02528 (31 ABFP suction switches reading erroneously), previous DERs on FC-1135S and on the 31 ABFP train, and previous work requests and problem identification tags. The inspectors also reviewed the Maintenance Rule Criteria,

the TSs, and the FSAR to determine system performance and design basis functional requirements for FC-1135S and the 31 ABFP train.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work

a. Inspection Scope (71111.13)

The inspectors reviewed the maintenance risk assessments and maintenance work request (WR) packages for the following planned and emergent work, and discussed the deficient conditions with cognizant personnel (system engineers, maintenance technicians, etc.):

- Preventive maintenance (PM) Inspection of the 33 Service Water Zurn Strainer:

  On May 31, 2001, the licensee declared the 33 service water pump (SWP) inoperable to perform a scheduled PM (WR 00-03367-00). A scheduled periodic test was also performed on safeguards bus 2A (3PT-M62). During this test, the licensee determined that a non-SI undervoltage agastat relay needed to be replaced. Consequently, bus 2A was declared inoperable, and the licensee also declared the 31 emergency diesel generator (EDG) inoperable since it would supply bus 2A during emergency conditions. With the 31 EDG out of service, the emergency power supply to the remaining SWP (31) was also out of service. The shift manager and the work week manager had factored this into their review of the failed relay. Based on the Improved Technical Specification operability criteria, the licensee concluded that the emergency power supply being out of service did not cause the corresponding safety related equipment to be out of service.

- 32 Reactor Coolant Pump Oil High Level Alarm:

  On June 20, 2001, the control room received an alarm that did not clear for high a oil level on the 32 reactor coolant pump. This condition was reported in DER 01-02637, and the licensee developed an action plan to address the locked in alarm. The licensee made a containment entry that day to investigate the problem and observed that the level in the lower oil reservoir was above the alarm setpoint. The licensee throttled the vent valve on the level indicator switch casing and on the lower oil reservoir to prevent differential pressures in the containment and the reservoir from affecting oil level at the alarm switch. The alarm subsequently cleared. On June 21, the high level alarm came in again and did not clear. The licensee made another containment entry, and throttled the vent valve. DER 01-02661 documented the second occurrence. Throughout these procedures, the inspector noted that no abnormal indications in pump or motor performance were observed. The licensee was able to accommodate the emergent work without a significant impact on currently scheduled maintenance activities.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions and Events

a. Inspection Scope (71111.14)

On June 3, 2001, the plant experienced a complete failure of the 32 condensate pump motor that was caused by a total ground fault in all three electrical phases, and that resulted in a high fault current on station service bus 2 (6.9KV). The fault also caused the 34 and 35 circulating water pumps to trip on over current. Operators immediately entered off-normal operating procedure ONOP-FW-1, and commenced a plant power reduced to approximately 85%.

The inspectors observed control room activities and conducted plant tours following the transient. Operators maintained the plant stable at approximately 85% while preparations were made to replace the motor. The inspectors also discussed the details of the transient with the Post-Transient Review Group (PTRG) members and reviewed the preliminary PTRG report. No safety-related equipment was out of service when the motor failed; however, during the transient, reactor delta flux was driven outside its target band and operators had to borate to restore it into its band. Several loads on bus 2A also tripped off (e.g., all isophase cooling fans, the 33 instrument air compressor, and the 32 instrument air compressor closed cooling water pump). Operators restarted all bus 2A loads, or other redundant components, to maintain the plant stable. The licensee's analysis of the plant response and inspections of plant equipment revealed that no equipment other than the condensate pump motor was degraded from the event.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope (71111.15)

The inspector reviewed various DERs on degraded or non-conforming conditions that raised questions on equipment operability. The inspector reviewed the resulting operability determinations (ODs) for technical adequacy, whether or not continued operability was warranted, and to what extent other existing degraded systems adversely impacted the affected system or compensatory actions. The following DERs, calculations, and ODs were evaluated:

- OD 01-021, Inadequate Response to NRC Information Notice 84-57, "Operating Experience Related To Moisture Intrusion In Safety-Related Electrical Equipment at Commercial Power Plants." The licensee's internal response to the IN only addressed Equipment Qualification (EQ) Program equipment, and did not address other safety-related non-EQ electrical equipment that may be susceptible to degradation from water intrusion. The inspector reviewed the

licensee's documentation of a complete walkdown of all EQ equipment in the plant conducted in 1995, and again during the RO-9 outage to confirm that all equipment in the EQ program met design requirements for protection against moisture intrusion. The licensee also initiated an action commitment tracking system item (ACTS 01-56800) to review other non-EQ equipment for potential water intrusion problems.

- DERs 01-02283, 01-02065, and 01-02241, Failed Westinghouse Control Switches. During the last refueling outage, three control switches ("W2") on the main control board failed during system testing (i.e., start switches on a main boiler feedwater pump, an ABFP, and a containment fan cooler unit). The licensee replaced all three switches prior to plant startup and investigated the cause of the failures. The initial investigation into the cause was inconclusive; however, the licensee performed continuity checks across the auto-start contacts on all safety-related W2 switches on the main control board to assure that the associated equipment would start on an actuation signal.

  The licensee also placed caution tags (CTOs) on all W2 switches on the main control board that had not been replaced in the past 5 years. The CTOs directed the operators to have instrumentation and control (I&C) technicians check the continuity on the auto-start contacts of all switches after they had been cycled from the off position to the auto-start position to ensure that good circuit continuity existed. The tags were placed on a total of 46 switches including the RHR pumps, safety injection (SI) pumps, containment spray (CS) pumps, containment fan coolers, motor control cabinets (MCCs), and other safety-related equipment. Most of these switches remained normally in the auto-start position with the equipment in a stand-by condition, but some were associated with equipment already in operation (e.g., FCUs and MCCs). The inspectors determined that the licensee had I&C technicians available 24 hours a day to perform this activity when necessary.

  The inspectors observed the licensee's shop tests to evaluate the rate of deterioration of the contact resistance for W2 switches that were replaced. No degradation in resistance was observed after the switches were subjected to a constant 125 volts DC for several days. The shop testing was not able to reproduce the high resistance condition, and troubleshooting did not positively identify the failure mechanism. The licensee concluded that the apparent cause was age-related degradation from multiple arc strikes internal to the switch contacts when the switch was manipulated and the contacts changed position under a voltage potential.

  Due to the uncertainty associated with the exact failure mechanism and the unexpected failure rate during the outage, the licensee concluded that all 46 switches should be replaced. The licensee initially set the switch replacement schedule to be completed by the end of August 2001 under the 12 week rotating maintenance schedule for 29 switches that could be replaced with the plant online. However, given the lack of a definitive root cause, the licensee accelerated the online switch replacement schedule so that all could be completed by the end of July 2001. There were 17 switches that required

system or plant outage. These switches were associated with equipment currently operating or that required operator action to initiate operation. After the refueling outage, no other switch failures and/or automatic equipment actuations involving W2 switches occurred during the inspection period.

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds

a. Inspection Scope (71111.16)

The inspectors performed a review of operator work-arounds to determine the cumulative effects upon the reliability, availability, and potential for mis-operation of a system; upon initiating event frequencies; and upon the operators' ability to respond in a correct and timely manner to plant transients. This review included the operator work-arounds list, non-transient operator work-arounds list, control room deficiencies list, the "Quarterly Review of Cumulative Effects of Operator Workarounds and Central Control Room Deficiencies at IP3 1st Quarter 2001," Control Room Turnover Sheets, and system operating procedure SOP-SD-01, "Work Control Process." In addition, the inspector reviewed the work control program and the DER database to access the open problem identification tags (PIDs), WRs, and DERs for operator work-around consideration. Further, the inspector evaluated every PID in the control room for operator work-around consideration.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope (71111.11)

Emergency Diesel Generator (EDG) Air Start Motor Modifications

During RO-11, the licensee replaced both air start motors on all three EDGs with an upgraded model due to obsolescence of the old motors and difficulty in obtaining spare parts. The inspectors reviewed design change (DC) 97-3-058 and modification acceptance test (MAT) 97-00500-20, and evaluated the resulting test data against the specified acceptance criteria. Following installation, each new air motor was required to start the EDG within a 10 second time limit required by the technical specifications. One air start motor on the 32 EDG did not start its engine in 10 seconds and had to be replaced. The final acceptance of the replaced air motor was satisfactory; however, the inspectors identified that the acceptance criteria in the MAT procedure allowed only one air motor to start the diesel for an overall acceptable test. As written, the MAT did not incorporate the requirements of the modification, which required that both air motors individually start the engine within 10 seconds. The licensee documented this deficiency in DER 01 02365.

Fuel Transfer System Failures

During the core offload in the last refueling outage (RO-11), a pull cable on the fuel transfer system (FTS) became detached from the transfer cart, and a spent fuel bundle was temporarily held up in the transfer tube between the refueling cavity and the spent fuel pool. Standby cables were used to move the cart and bundle back into the refueling cavity while the licensee investigated the problem. An underwater camera inspection of the detached cable revealed installed hardware that was not shown on the system drawings. A lockwasher was installed on the “extend” cable but was not shown on the drawing. The drawing also indicated that a double jamnut configuration should have been installed on the cable ferrule instead of the single nut with a lock washer that was actually installed. The licensee concluded that a jerky movement and misalignment in the transfer cart caused the single nut to loosen and to fall off the cable ferrule. The licensee completed underwater repairs of the FTS equipment prior to resuming refueling operations. However, the equipment experienced other minor deficiencies during the rest of the core offload.

The inspectors reviewed portions of modification package 96-3-289, which upgraded the fuel transfer system equipment prior to refueling outage RO-9. During discussions with the licensee, it became evident that the modification contractor had issued several engineering change notices (ECNs), but did not use the same drawings for all ECNs, and some details of the required hardware were deleted. The licensee initiated DER 01-01964 to document this problem, and to initiate actions to update all drawings associated with the FTS. The licensee also planned to conduct a full FTS design verification and perform a full equipment checkout prior to the next refueling.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope (71111.19)

The inspectors reviewed post-maintenance test procedures and associated testing activities to assess whether 1) the effect of testing in the plant had been adequately addressed by control room personnel, 2) testing was adequate for maintenance performed, 3) acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing documents, 4) test instrumentation had current calibrations, range, and accuracy for the application, and 5) test equipment was removed following testing. The following surveillance activities were evaluated:

- WR 00-03367-00 performed a PM inspection on the 33 service water Zurn Strainer in accordance with procedure STR-001-SWS, "Service Water Pump Strainers Inspection/Overhaul" and WR 00-4174-00 performed the service water system (SWS) periodic functional surveillance which served as the post-maintenance test (PMT). The inspectors observed portions of the field maintenance work and PMT on May 31, 2001. The inspectors identified minor documentation discrepancies and the licensee documented these in DER 01-02672.

- WR 01-00052-00 performed minor maintenance on flow controller FC-1135S, 31 ABFP low suction flow recirculation/pump trip actuation. On June 11, 2001, nuclear plant operators observed the FC sticking at 80 gallons per minute (gpm) then the flow was actually greater than 80 gpm (PID 03951). The inspectors observed portions of the field work and reviewed the work request performing the minor maintenance and the PMT that demonstrated operability.

- WR 00-03247-00 performed a PM and periodic inspection on the ABFP room wall exhaust FAN-312-AB. Licensee risk assessments had identified the ABFP room exhaust fans as being risk significant, contributing significantly to Probabilistic Risk Assessment (PRA) core damage frequencies. The inspector observed the PM activities and PMT in the field and reviewed the documentation associated with the PM activity and the PMT.

- Surveillance Test 3PT-R145, "Anticipated Transient Without Scram Mitigating System Actuation Circuitry (AMSAC) System Functional Test" on May 21, 2001. During the test, the 31 ABFP did not automatically start as anticipated when the AMSAC signal was initiated. By a process of elimination, the licensee's troubleshooting determined that the auto-after-stop contactor on the Westinghouse W-2 switches did not make complete contact, and the motor did not receive a start signal (DER 01-02283). The licensee's investigation determined the May 21st failure of the 31 ABFP to automatically start was the third concern with the W-2 switches observed during the Refueling Outage 12 (DERs 01-02065 and 01-2241). The inspectors reviewed the immediate actions

taken to ensure the 31 ABFP would automatically start when required. In addition, the inspectors reviewed the action plan regarding the use and replacement of the W-2 switches used in safety related functions (See Section 1R15).

- 32 Static Inverter Fan Failure. On May 28, 2001, the licensee observed that the cooling fans on the 32 static inverter were not operating (DER 01-02402). During troubleshooting, it was noted that a fan fuse had failed. This failure was a repeat occurrence that the licensee had documented previously. On June 7, 2001, a fan fuse on the 32 inverter failed again (DER 01-02502), and the licensee considered that the inverter may need to be removed from service to investigate and correct the problem. Removing the 32 static inverter from service would have disabled the cutback controller for the 33 ABFP, and the pump would also have to be declared inoperable. However, after the fuse was replaced, the licensee's testing showed that the motor was operating satisfactorily. Although actual motor current was close to the fuse rating, the licensee concluded that the inverter did not need to be removed from service, and the motors would be replaced as needed during their normal PM. Based on testing performed by the inverter's manufacturer, the licensee also concluded that the inverter could function indefinitely under design basis conditions without its fans operating.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities

a. Inspection Scope (71111.20)

Startup Physics Testing

The inspectors observed control room activities during startup physics testing following refueling outage RO-11. The inspectors reviewed the revised core data provided by reactor engineering to the operators, and observed reactor core data obtained during performance of test procedure RA-7, "Startup Physics Test Program." The inspectors observed that the licensee had performed accurate calculations for rod position and boron at criticality.

Containment Closeout Walkdown

Containment walkdowns prior to entry into mode 4 on May 21, 2001, and mode 3 on May 22, 2001. The inspector was accompanied by the containment coordinators who performed parallel inspections.

The inspectors identified the following conditions and notified the containment coordinators for resolution. The licensee documented these items in DER 01-02271 for resolution:

- The 33 fan cooler unit (FCU) door was not fully secured. The licensee temporarily secured the FCU in order to fully insert the door latch.

- Cable tray 73XJD contained a cable that crossed over into an adjacent tray and presented an apparent cable separation problem. Upon investigation, the licensee concluded that the cable was not energized, and had been spared several years previous. The licensee subsequently placed the entire cable in tray 73XJD.

- A small amount of debris (rubber glove, tape, plastic bag) was inside a high radiation area and could have contributed to potential clogging if it migrated to the emergency core cooling system (ECCS) recirculation suction strainers. The licensee retrieved the material and removed it from the containment.

The inspectors also identified a condition on the incore instrumentation seal table that required follow-up discussions with engineering personnel. The jacking bolts on the incore instrumentation seal table were not installed in accordance with drawing 9321-F-14333 in that the lock nuts on the jacking bolts were not fully bottomed onto the support frame as shown in the drawing to restrain the table from vertical motion. The licensee evaluated this condition and concluded that it was not seismically significant, since there would be very little vertical motion at that location during a design seismic event. However, prior to entering mode 2, the licensee secured the nuts as shown in the drawing. This condition was previously identified by the licensee in August 1997 following RO-09. WR 97-03264-55 was written to correct a problem with missing nuts on the seal table jacking bolts as well as to secure them to the seal table frame. The WR was closed out after the work was completed, however, no subsequent actions were taken to assure that the proper configuration was maintained in the future. Following this occurrence, the licensee planned to revise the maintenance procedure used for moving and restoring the seal table framework.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope (71111.22)

The inspectors reviewed surveillance test procedures and associated testing activities to assess whether 1) the test preconditioned the component(s) tested, 2) the effect of testing was adequately addressed in the control room, 3) the acceptance criteria demonstrated operational readiness consistent with design calculations and licensing documents, 4) the test equipment range and accuracy was adequate with proper calibration, 5) the test was performed in the proper sequence, and 6) the test equipment was removed following testing.

The inspector reviewed/observed portions of the following surveillance tests and performed a review of related historical data and surveillance performance.

- 3PT-Q117, Containment Spray Pump Functional Test, performed on June 22, 2001.
- 3PT-M079C & B, 33 and 32 EDG Monthly Functional Tests, performed June 12 and June 16, 2001, respectively.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope (71111.23A)

Main Steam Isolation Valve Leak Repair

The inspectors reviewed the work package for temporary modification (TM) 01-01941-01, on main steam isolation valve (MSIV) MS-1-31 cover flange. The inspectors also reviewed the FSAR, and the TS for the temporary leak repair, to verify that the TM did not affected the safety functions of the MSIV. The inspectors observed the installation of the leak repair using the NRC's Inspection Manual Part 9900 Technical Guidance, "On-Line Leak Sealing Guidelines for ASME Code Class 1 and 2 Components."

DC Power Panels 31 & 32 Temporary Pigtails

TM 94-01648-09 installed pigtails in DC Power Panels 31 & 32 on May 16, 2001. The pigtails were designed to provide a connection point for temporary batteries that will be used for an online replacement of the 31 and 32 station batteries during the current operating cycle. The inspectors reviewed the modification package and observed the installation at the power panels. The modification package listed five plant procedures that required changes to reflect the installed TM. However, on June 14, 2001, the inspectors identified that the procedures designated in the package had not been revised. The licensee indicated that there was no program requirement to have affected procedures updated to reflect the installation of temporary modifications. The licensee subsequently initiated DER 01-02572 (June 14, 2001) and initiated an action commitment tracking item to establish a requirement similar to that required for permanent modifications.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification

a. Inspection Scope (71151)

Safety System Functional Failures

The inspectors performed the periodic review of the safety system functional failure performance indicator (PI) data to determine the accuracy and completeness of the licensee's data reported to the NRC. The inspector reviewed the Licensee Event Reports (LERs) for the previous 24 months (June 1999 - June 2001) to determine if the events documented in the LERs should have been classified as safety system functional failures. In addition, the inspector reviewed the DER database for additional safety system functional failures for the safety related functions, including reactor coolant integrity, emergency core cooling, main steam isolation, and containment integrity.

Reactor Coolant System Leakage

The inspectors reviewed the reactor coolant system (RCS) identified and unidentified leakage data that the licensee submitted for the first quarter of year 2001. The reviewed included a sample of daily leakage calculations performed by the operators. The inspectors verified that the data was accurate.

b. Findings

No findings of significance were identified.

4OA4 Licensee Event Report Reviews

a. Inspection Scope

(Closed) LER 2001-001-00; "Inattention to Detail in FSAR and Design Basis Maintenance Caused Bypass of Isolation Signals to Steam Generator Blow-down Isolation Valves that could have Prevented the SG Decay Heat Removal Function." The licensee reported this event to the NRC on June 1, 2001, after discovering that SG blow-down valves would not receive a containment isolation signal during calibration of the R-19 radiation monitoring instrument. The inspectors evaluated the licensee's actions related to this event in May 2001, and documented the results in inspection report 2001-004, Section 1R13. This LER is closed.

(Closed) LER 1998-001-00; "Potential Failure or Inadvertent Operation of Fire Protection Systems, Caused by Personnel Error in Design, Could Cause a Loss of Cable Spreading Room Cooling, Placing the Plant Outside Design Basis." The LER was submitted to the NRC on March 27, 1998, and was the result of an extent of condition review performed in response to LER 1997-010-00. The inspectors reviewed the licensee's corrective and follow-up actions contained in ACT item 98-33925 (modification of the CO2 system to prevent the loss of cable spreading room ventilation from single failure), and ACT item 98-33926 (clarification of the fire protection and ventilation design basis documents). These actions are adequate and this LER is closed.

An in-office review/closure of selected LERs was performed, as indicated in the supplementary information attachment to this report. The LERs selected for this administrative review either involved: minor findings, issues that the licensee identified and entered into their corrective action program, or findings addressed in another NRC inspection report.

b. Findings

No findings of significance were identified.

4OA6 Meetings

Exit Meeting Summary

The region-based inspectors presented their inspection results to Mr. Fred Dacimo and other members of licensee management on May 25 and June 8, 2001.

On July 19 , 2001, the resident inspectors presented the overall inspection results to Mr. J. DeRoy and other Entergy staff members who acknowledged the inspection results presented. The inspector asked Entergy personnel whether any materials evaluated during the inspection were considered proprietary. No proprietary information was identified.

ATTACHMENT

SUPPLEMENTARY INFORMATION

a. Key Points of Contact

R. Barrett	Vice President, Operations - IP3
R. Burroni	I&C Manager
D. Calabrese	Technical Engineering Supervisor
R. Cavaleri	Outage and Planning Manager
J. Comiotes	Director, Safety Assurance
P. Conroy	Primary Systems Engineering Supervisor
F. Dacimo	General Manager of Plant Operations
R. Deschamps	Radiological and Environmental Services Manager
J. DeRoy	Director, IP-3 Engineering
A. DiCesaro	Maintenance Rule Coordinator
J. Hill	Acting Electrical Systems Engineering Supervisor
D. Mayer	Health Physics/Chemistry Manager
J. Perrotta	Quality Assurance Manager
S. Pertosi	Design & Analysis Engineering Manager
K. Peters	Corrective Actions/Assessment Manager
P. Rubin	Operations Manager
J. Russell	Special Projects Manager
B. Sitler	Acting Engineering Programs Supervisor
S. Smith	Balance of Plant System Engineering Supervisor
A. Vitali	Maintenance Manager
J. Wheeler	Training Manager
C. Yeh	Supervisory Engineer, NSA Group

b. List of Items Opened, Closed and Discussed

Closed through onsite review

LER 2001-001-00; Inattention to Detail in FSAR and Design Basis Maintenance Caused Bypass of Isolation Signals to Steam Generator Blow-down Isolation Valves that could have Prevented the SG Decay Heat Removal Function.

LER 1998-001-00; Potential Failure or Inadvertent Operation of Fire Protection Systems, Caused by Personnel Error in Design, Could Cause a Loss of Cable Spreading Room Cooling, Placing the Plant Outside Design Basis.

Closed through offsite administrative review

LER 2000-004-01	Missed Control Room Oxygen Detector Surveillance Test is a Condition Prohibited By Technical Specification Caused by Personnel Error
LER 1999-003-01	Automatic Reactor Trip Due to Flow Transmitter Low Flow Bistable Actuation on Reactor Coolant Loop 3 While Un-isolating Another Transmitter as a Result of an Inadequate Work
LER 1998-004-01	Control Room Ventilation System and Component Leakage Design Bases Not Met Due To Deficiencies In Input To Surveillance Testing
LER 1997-031-01	Plant Outside of Design Basis Involving Single Failure Criteria for the Auxiliary Feedwater System, Due to Error in Original Design
LER 1997-032-01	480 Volt Bus Inoperable Due to a Failure of the 32 Residual Heat Removal Pump Circuit Breaker to Open
LER 1997-032-02	480 Volt Bus Inoperable Due to a Failure of the 32 Residual Heat Removal Pump Circuit Breaker to Open
LER 1997-011-01	Incomplete Testing of Safety-Related Logic Circuits Fails to Fully Demonstrate Technical Specification Requirements
LER 1997-003-01	Design Deficiency in the DC Power System Causes Inadequate Emergency Power Due to a Postulated Single Failure During Use of Backup Battery Charger Resulting in the Plant Being Outside Design Bases

c. List of Acronyms

ABFP	auxiliary boiler feedwater pump
ACTS	Action Commitment Tracking System
AFWS	Auxiliary Feedwater System
AMSAC	ATWS mitigating system actuation circuitry
ASME	American Society of Mechanical Engineers
ATWS	anticipated transient without scram
CFR	Code of Federal Regulations
COL	check-off list
CRDM	control rod drive mechanism
CS	containment spray
CTO	caution tags
DC	design change
DER	deviation/event report
ECCS	emergency core cooling system
EDG	emergency diesel generator
EQ	equipment qualification

FC	Flow Controller
FCU	fan cooler unit
FSAR	Final Safety Analysis Report
FTS	fuel transfer system
gpm	gallons per minute
I&C	instrumentation and control
IP3	Indian Point 3
IPE	Individual Plant Evaluation
IR	inspection report
ISI	inservice inspection
LER	licensee event report
MAT	modification acceptance test
MCCS	motor control cabinets
MSIV	main steam isolation valve
NDE	nondestructive evaluation
NPO	nuclear plant operator
NRC	Nuclear Regulatory Commission
OA	Other Activities
OD	operability determination
ONOP	off-normal operating procedure
PARS	Publicly Available Records
PC	performance criteria
PI	performance indicator
PID	problem identification
PM	preventive maintenance
PMT	post-maintenance test
PRA	Probabilistic Risk Assessment
PTO	protective tagging order
PTRG	Post-Transient Review Group
RCS	reactor coolant system
RHR	residual heat removal
RO	refueling outage
SOP	standard operating procedure
SSCs	structures, systems and components
SW	Service Water
SWP	service water pump
SWS	service water system
TM	temporary modification
TS	Technical Specifications
UT	ultrasonic testing
VAC	voltage alternating current
VDC	voltage direct current
WR	work request