July 30, 2002

Mr. Robert J. Barrett
Vice President, Operations
Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Unit 3
295 Broadway, Suite 3
Post Office Box 308
Buchanan, NY 10511-0308

SUBJECT: INDIAN POINT 3 NUCLEAR POWER PLANT - NRC INSPECTION REPORT NO. 50-286/02-04

Dear Mr. Barrett:

On June 29, 2002, the NRC completed an inspection at the Indian Point 3 nuclear power plant. The enclosed report presents the results of that inspection. The results were discussed on July 29, 2002, with you and members of your staff.

The inspection was an examination of 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. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel. No findings of significance were identified.

The NRC has increased security requirements at Indian Point 3 in response to terrorist acts on September 11, 2001. Although the NRC is not aware of any specific threat against nuclear facilities, the NRC issued an Order and several threat advisories to commercial power reactors to strengthen licensees' capabilities and readiness to respond to a potential attack. The NRC continues to monitor overall security controls and will issue temporary instructions in the near future to verify by inspection the licensee's compliance with the Order and current security regulations.

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/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Peter W. Eselgroth, Chief
Projects Branch 2
Division of Reactor Projects

Docket No. 50-286

License No. DPR-64

Enclosure: Inspection Report No. 50-286/02-04

Attachment: Supplemental Information

cc w/encl: J. Yelverton, Chief Executive Officer
M. Kansler, Senior Vice President and Chief Operating Officer
J. DeRoy, General Manager of Plant Operations
D. Pace, Vice President - Engineering
J. Knubel, Vice President Operations Support
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R. Albanese, Executive Chair, Four County Nuclear Safety Committee
S. Lousteau, Treasury Department, Entergy Services, Inc.
Chairman, Standing Committee on Energy, NYS Assembly
Chairman, Standing Committee on Environmental Conservation, NYS Assembly
Chairman, Committee on Corporations, Authorities, and Commissions
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No. 50-286

License No. DPR-64

Report No. 50-286/02-04

Licensee: Entergy Nuclear Northeast

Facility: Indian Point 3 Nuclear Power Plant

Location: 295 Broadway, Suite 3
Buchanan, NY 10511-0308

Dates: May 19 - June 29, 2002

Inspectors: P. Drysdale, Senior Resident Inspector
L. James, Resident Inspector
W. Cook, Senior Project Engineer
J. McFadden, Radiation Specialist
K. McLaughlin, Emergency Preparedness Specialist

Approved by: Peter W. Eselgroth, Chief
Projects Branch 2
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000286/02-04, on 05/19 - 06/29/2002, Entergy Nuclear Northeast, Indian Point 3 Nuclear Power Plant. Resident inspection report.

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/reactors/operating/oversight.html

A. Inspector Identified Findings

None

B. Licensee Identified Violations

Two violations of very low significance which were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

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Report Details

SUMMARY OF PLANT STATUS

The reactor operated at full power during the entire inspection period, expect for a brief period on June 14, when plant power was reduced to approximately 91% to conduct main turbine stop and control valve testing. During the inspection period, no significant equipment failures occurred that affected plant operation.

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

1R01 Adverse Weather Protection

a. Inspection Scope (71111.01)

The inspectors evaluated implementation of the licensee's adverse weather procedures and the compensatory measures for equipment conditions affected by adverse weather during periods of strong thunderstorms (high wind, rain, and lightning), and high ambient temperatures. The inspectors reviewed operations directive OD-37, "Seasonal Weather Preparation," Attachment 8, "Warm Weather Preparation Checklist," to verify that the checklist had been performed, that actions taken to preclude heat buildup in plant spaces had been completed, and that operator actions were defined in the procedure to monitor potential challenges to safety-related equipment, and to maintain the readiness of essential systems. The inspectors performed system walkdowns inside plant spaces to assess the functionality of these systems, and verified that they would be available for performance of their shutdown functions.

During adverse weather throughout the inspection period, the plant remained at 100% power; however, some local grid instabilities resulted from abnormally high electricity demands. On June 24, 2002, the area grid system operators requested that the licensee suspend or defer all trip risk activities until the peak load passed. The licensee complied with this request, and postponed a scheduled surveillance test on the safety injection system. The inspectors reviewed a risk assessment the licensee performed to justify not postponing an under-voltage/degraded-voltage test on the 480 Volt safeguards buses. This test sequentially removes each emergency diesel generator (EDG) from service for a short period of time.

The inspector reviewed approximately 35 problem identification tags (PIDs) with a radiological department supervisor and toured areas of the plant were water intrusion into internal spaces had been a problem over the past several months. The inspector also toured roof areas of the primary auxiliary building (PAB), and the radioactive machine shops (RAMS) to inspect the repairs. Particular emphasis was placed on the following PIDs during the tours and the repairs made to correct the deficient conditions.

8741:	Rainwater leaking through roof over the containment purge valves
8742:	Rainwater leaking through roof in PAB Annex
26566:	Rainwater leaking through the block wall on the west side of PAB elevation 15 ft.
41355:	Roof leaks at various points on supports near the 31 and 34 main steam lines.

63936: Numerous rainwater leaks into the radiologically controlled area (RCA)

The licensee received multiple Category 2 thunderstorm alerts and warnings from the National Weather Service on June 5, 6, 12, 16, 17, 19, 23, 25, 26, 27, 28. The inspectors toured internal plant areas to assess the effectiveness of roof repairs to prevent water intrusion into areas where vital equipment could be vulnerable to water in leakage.

On June 24, 2002, the 32 main transformer oil temperature reached 96C (normal operating limit = 95C). This condition was documented in CR-IP3-2002-2358. The inspectors reviewed a proposed operating setpoint change to both 32 main transformer auxiliary fan banks. The licensee planned to lower the setpoint by 10C for each bank in order to prevent temperatures from exceeding 95C before compensatory actions could be put in place. In addition, the licensee planned to lower the alarm setpoints for the transformer oil temperature. These modifications were planned for August 2002, and the licensee intended to incorporate the new setpoints into the hot weather preparation procedure.

On June 26, 2002, lightning struck the 345 kilo volt (KV) main transmission tower at Indian Point 3 (IP3). This resulted in a step increase in shaft vibrations on the 34 reactor coolant pump (RCP) to 13 mils near the alarm setpoint of 15 mils. The licensee contacted the pump manufacturer (Westinghouse) regarding the situation, and the inspectors reviewed their technical concurrence for operating the pump with elevated vibrations until the next refueling outage. The lightning strike also caused the 31 static inverter “not aligned with backup source” indicator to light, and caused the hand geometry link between IP2 and IP3 to be broken. The licensee initiated repairs to restore the equipment to normal.

b. Findings

No findings of significance were identified

1R04 Equipment Alignment

a. Inspection Scope (71111.04Q)

On June 7, 2002, the licensee performed surveillance testing on the 32 auxiliary boiler feedwater pump (ABFP). During this activity, the inspectors conducted a partial system walkdown of the motor-driven ABFPs to identify any discrepancies that could potentially adversely impact this safety function.

On June 14, 2002, the inspectors performed a walkdown of portions of the 31 and 33 safety injection (SI) pumps and associated valves, while the 32 SI pump was out of service for quarterly surveillance testing. The inspectors used check off list COL-SI-1, “Safety Injection System,” and surveillance procedure PT-Q116B, “32 Safety Injection Pump Functional Test,” to verify proper valve configuration for the 31 and 32 SI pumps and proper isolation of the 32 SI pump.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope (71111.05Q)

The inspectors conducted fire protection tours in the fire zones listed below to observe if the licensee was controlling transient combustibles in accordance with fire protection procedure FP-9 “Control of Combustibles;” to ensure that the licensee had been controlling ignition sources in accordance with FP-8, “Controlling of Ignition Sources;” to ensure that the licensee had provided the fire protection equipment as specified in Pre-Fire Plans (PFPs) listed below; and to assess the general material condition of the fire protection equipment and fire protection barriers. These areas were selected for inspection based on the their high fire initiation risk and the safe shutdown equipment located in the areas.

- Auxiliary Feedwater (AFW) pump room; PFP-47, “AFW Pump Room - Elev. 18 ft - 6 in”; June 5, 2002

- Plant Intake Structure & Service Water Pump Room; PFP-69, “Circ and SW Pump Building - Elev. 15 ft - 0 in”; June 6, 2002

- Main Transformer Yard including the main output transformers, station auxiliary transformer, and unit auxiliary transformer; PFP-62, “Main Transformer Yard - 18 ft - 0 in”; June 27 - 28, 2002

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope (71111.06)

The inspectors reviewed Section 16.1 of the Final Safety Analysis Report (FSAR) that described flood protection features designed into the plant and flood mitigation equipment available to plant operators in the event of internal flooding from the potential break of a large pipe in the circulating water, condensate water, fire water, or city water systems. The inspectors also reviewed the licensee’s procedures for response to an internal flooding event as described in off-normal procedure ONOP-RW-3, “Plant Flooding,” operations directive OD-8, “Guidelines for Severe Weather,” and alarm response procedure ARP-7, “Panel SDF - Turbine Recorder.”

The inspectors toured areas important to safety inside the plant to assess the condition and functionality of flood mitigation equipment such as elevated floor berms, floor drains, and breakaway flood gates. Areas toured included the PAB, and the AFW pump room, the pipe penetration area, the plant intake structure, the vital 480 volt switchgear

room, and the turbine building. The inspectors also observed the general areas around the condenser water boxes to verify that flood water flow paths were not obstructed and would direct water to the 5 foot elevation away from the 6.9 KV switchgear.

During periods of high thunderstorm activity from June 5 - 28, the inspectors toured external areas of the plant to observe areas of water accumulation, storm drainage paths, and areas where potential blockage could occur. The inspectors also observed the locations of storm drains and their proximity to plant structures to assess the potential impact of storm drain blockage.

b. Findings

No findings of significance were identified

1R11 Licensed Operator Requalification

a. Inspection Scope (71111.11)

On June 13, 2002, the inspectors observed simulator and classroom training for licensed operators attended by Crew A during the 2nd quarter 2002 requalification cycle. Prior to observing the exercises, the inspectors reviewed the plant issues matrix (PIM) for Indian Point 3 Nuclear Power Plant to identify potential weaknesses in operator performance. The inspectors also reviewed the planned scenario as documented in Lesson Plan Number LRQ-SIM-E8, “Loss of Ultimate Heat Sink,” to determine if it contained 1) clear event descriptions with realistic initial conditions; 2) clear start and end points; 3) clear descriptions of visible plant symptoms for the crew to recognize; and 4) clear expectations of operator actions in response to abnormal conditions.

During the simulator exercises, the inspectors evaluated the crew’s performance for the clarity and formality of communications; the correct use and implementation of emergency operating procedures (EOPs) and off-normal operating procedures (ONOPs); the ability to properly interpret and verify alarms, and to take timely control board operation and manipulation; and the ability to take timely actions in a safe direction based on transient simulator conditions. The inspectors also evaluated the control room supervisor’s ability to exercise effective oversight and control of the crew’s actions.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope (71111.12)

The inspectors reviewed the following systems and components, and their performance issues to assess the effectiveness of the licensee's Maintenance Rule program. Using 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," and Regulatory Guide 1.1.60, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," the inspectors verified that the licensee was implementing their Maintenance Rule program in accordance with NRC regulations and guidelines; properly classifying equipment failures; and using the appropriate performance criteria for Maintenance Rule systems in 10 CFR 50.65 (a)(2) status.

- 31 Component Cooling Water pump seal leaks and repairs
- 31 Containment Fan Cooler Unit (FCU) Westinghouse Type W2 switch failures

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Control

a. Inspection Scope (71111.13)

The inspectors reviewed the maintenance risk assessments and corrective maintenance work packages for the following emergent work, and discussed the deficient conditions with cognizant system engineers, maintenance technicians, and work control managers:

WR 02-02254-03 Control Bank C Individual Rod Position Indicator

On June 9, 2002, the Individual Rod Position Indicator (IRPI) for Control Bank C, Control Rod N-3 failed, indicating that the control rod had stepped in 50 steps. Core flux maps performed determined that the control rod had not stepped in 50 steps and the IRPI was in error. During troubleshooting, the licensee identified that the shield had been grounded, causing the erroneous IPRI reading. On June 10, 2002, the licensee installed a temporary modification to disconnect shield ground wire. The inspectors reviewed the risk assessment associated with the troubling shooting efforts and the work package that installed the temporary modification. In addition, the inspectors interviewed the work week managers and the shift managers to determine if the risk assessment performed had considered current conditions and planned maintenance activities.

WR 02-02250-00: Service water line #408 leak repair

On June 7, 2002, following identification of a weld defect in service water line #408, the licensee held several work planning meetings to develop a detailed work sequence for preparing and completing the weld repairs. The inspectors evaluated the licensee's plans for contingency actions, including a plant shutdown, and the potential risk consequences for plant operation if the piping could not be adequately drained or isolated to complete the weld repairs. The inspectors questioned several proposed work sequences with work planning, maintenance and operations personnel and evaluated the licensee's process to minimize the operational risk from the repairs.

WR 02-77080-50: 32 Safety Injection-Component Cooling Water pump flow degradation

During periodic surveillance testing of the 32 SI-CCW pump on June 17, 2002 the licensee observed that the pump differential pressure was degraded below the minimum acceptance criteria limit. The licensee placed the pump into an IST alert status, and planned to conduct troubleshooting to determine the cause of the degradation. The inspectors reviewed the risk impact to the existing work schedule for extending the out-of-service time for the 32 SI pump to complete troubleshooting.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope (71111.15)

The inspectors reviewed various DERs on degraded or non-conforming conditions that raised questions on equipment operability. The inspectors 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 CRs, and operability evaluations were evaluated:

- OD 02-20: 32 ABFP inboard bearing oil reservoir plug not installed; CR-IP3-2002-02158

- OD 02-21: Fire doors between the 32 & 33 EDGs not self closing during ventilation system operation; CR-IP3-2002-02345 & -02348

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope (71111.19)

The inspectors reviewed post-maintenance test (PMT) 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 the 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 PMT activities were observed and evaluated:

- 32 SI-CCW pump following troubleshooting for flow degradation; June 19, 2002
- 31 CCW Pump following inboard seal replacement; June 20, 2002
- Diesel Fire Pump and relief valve following relief valve preventive maintenance; June 20, 2002;

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope (71111.22)

The inspectors observed portions of the following surveillance tests and reviewed the surveillance test procedures to assess whether 1) the test preconditioned the component(s), 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 inspectors observed or reviewed the following technical specification surveillance tests:

- 3PT-Q116B, “32 Safety Injection Pump Functional Test;” June 14, 2002
- PT-Q101, “PCV-1310A/B;” (IST Stroke Test for the main steam inlet isolation valves to the turbine-driven auxiliary feedwater pump); June 7, 2002.
- PT-Q120B, “No. 32 Auxiliary Boiler Feedwater Pump Functional Test;” June 7, 2002.

b. Findings

No findings of significance were identified.

EMERGENCY PREPAREDNESS

Cornerstone: Emergency Preparedness (EP)

1EP2 Alert and Notification System Testing

a. Inspection Scope (71114.02)

The inspectors reviewed Emergency Plan (E-Plan) commitments concerning the Alert and Notification System (ANS) (i.e., sirens) and the ANS Design Report which described the system capability (Indian Point Unit 2, also owned by Entergy, is responsible for maintaining the siren system). The inspectors also reviewed the system testing procedure and test schedule to ensure compliance with commitments, and interviewed the licensee's emergency planner with responsibility for ANS implementation to discuss implementation of a tone alert radio program. Lastly, the inspectors observed system growl tests for six sirens in Orange County, New York to assess the system's readiness, test data collection methods, and familiarity of personnel with the test procedure.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization Augmentation Testing

d. Inspection Scope (71114.03)

The inspectors reviewed the licensee's commitments for Emergency Response Organization (ERO) staffing and emergency facility activation. The inspectors also reviewed the ERO call-in procedure to assess its adequacy to support ERO augmentation (the licensee implemented the Dialogics automated phone system on May 30, 2002). The inspectors reviewed quarterly call-in test results for the last year, and the last two monthly Dialogics test results to assess the licensee's ability to staff facilities with sufficient responders in a timely manner. Staff depth for key ERO positions was reviewed to ensure that sufficient numbers of responders were available. The inspectors interviewed the Emergency Preparedness Manager and two staff emergency planners concerning the implementation of the Dialogics system for ERO augmentation. Lastly, the inspectors reviewed the licensee's staffing commitments to ensure compliance with NUREG-0654, Table B-1, "Minimum Staffing Requirements for NRC Licensees For Nuclear Power Plant Emergencies."

e. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope (71114.04)

The inspectors sampled recent E-Plan and implementing procedure changes to verify that the changes had not reduced the effectiveness of the E-Plan. There were no recent Emergency Action Level changes to review.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

c. Inspection Scope (71114.04)

The inspectors reviewed condition reports (CRs) documenting problems and associated corrective actions to assess the licensee's ability to identify and resolve EP issues, and determine if corrective actions were effective to prevent recurrence. The inspectors reviewed the 2002 (in draft) and 2001 10 CFR 50.54(t) EP audits to assess whether the audits met the requirements, and to determine if any repeat issues were identified. The inspectors also interviewed the audit team leader to discuss finding details, and reviewed licensee drill reports and self-assessments for further insights on licensee problem identification.

d. Findings

No findings of significance were identified. The inspectors reviewed one licensee-identified violation of very low safety significance which was documented in the licensee's corrective action program. This violation is documented in Section 4OA7 of this report.

1EP6 Drill Evaluation

a. Inspection Scope (71111.23A)

The inspectors observed an accountability drill on April 10, 2002, which demonstrated that the revised Emergency Planning Implementing Procedures (EPIP) were capable of completing site-wide (Units 2 and 3) personnel assembly and accountability if either Indian Point Unit 2 or 3 were to declare a Site Area emergency. The EPIP procedures were revised on April 10, 2002 as a result of the licensee not meeting the 30 minute accountability commitment during a drill on March 8, 2002.

b. Findings

No findings of significance were identified

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety (OS)

2OS1 Access Control To Radiologically Significant Areas

a. Inspection Scope (71121.01)

The inspectors reviewed radiological work activities, work practices, and procedure implementation during observations and tours of the facilities. The inspectors also reviewed procedures, records, and other program documents to evaluate the effectiveness of the licensee's access controls to radiologically significant areas.

On June 25 and 26, 2002, the inspectors toured the radiologically-controlled area (RCA) including: the health-physics (HP) access-control point and various elevations of the PAB, and radioactive waste handling areas in the radioactive machine shop (RAMS). During these observations and tours the inspectors reviewed, for regulatory compliance, the posting, labeling, barricading, and level of radiological access control for locked high radiation areas (LHRAs), high radiation areas (HRAs), radiation and contamination areas, and radioactive material areas. The inspectors observed activities at the main RCA access-control point to verify compliance with requirements for RCA entry and exit, wearing of record dosimetry, and issuance and use of alarming electronic radiation dosimeters. The inspectors also observed work activities for compliance with the radiation work permit (RWP) requirements. Additionally, the inspectors discussed with radiological protection personnel the need for any recent internal dose assessment evaluations and the adequacy of controls for non-fuel materials stored in the spent fuel pool.

On June 25, 2002, the inspectors observed a pre-job brief for an entry into the vapor containment by a "Fix-It-Now" team consisting of two members, along with a valve specialist and a health physics technician. The purpose of the entry was to collect grease samples from selected motor-operated valves. The inspectors reviewed RWP 02-0028 which contained the radiological information and controls for the work.

On June 26, 2002, the inspectors observed a pre-job brief for preventive maintenance on a sump tank on the 15 foot elevation of the primary auxiliary building (PAB). The work crew consisted of three waste management personnel and two health physics technicians. The purpose of the work was to remove silt and debris and an associated hot spot (1200 millirem per hour at contact) from the bottom of the sump tank. The inspectors reviewed RWP 02-0044, which contained the radiological information and controls for the work. The inspectors observed and evaluated the work for RWP compliance in the area directly outside the sump tank room and observed work inside the sump tank room via a closed circuit television camera.

The inspectors performed a selective examination of RWPs, procedures, and other program documents (as listed in the List of Documents Reviewed) to evaluate the adequacy of radiological control requirements.

The inspectors reviewed the following two Deviation/Event Reports (DERs) and their associated Action Commitment Tracking System (ACTS) items, and the following five Condition Reports (CRs) for appropriateness of categorization, immediate correction actions, corrective actions to prevent recurrence, and for the timeliness and effectiveness of the corrective actions: DERs 01-04041 and 02-01293 and CRs 2002-

01379, 2002-01609, 2002-01949, 2002-02372, and 2002-02419. These corrective action program items were generated mostly during the reviewed period of early April 2002 to late June 2002.

The review in this area was against criteria contained in Title 10 of the Code of Federal Regulations (CFR) Part 19 (Notices, instructions, and reports to workers; inspection and investigations) and Part 20 (Standards for protection against radiation) including Subparts B, C, D, F, G, H, I, J, K, L, and M; and the criteria in site Technical Specification 6.12 (High Radiation Area) and site procedures.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls

a. Inspection Scope (71121.02)

The inspectors reviewed the effectiveness of the licensee's program to maintain occupational radiation exposure as low as is reasonably achievable (ALARA). On June 26, 2002, the inspectors observed an ALARA Committee meeting during which the topics of discussion included the collective dose performance during the first quarter of 2002, the collective dose projection for the second quarter of 2002, and identified challenges in the ALARA area.

The inspectors performed a selective examination of procedures, records, and documents (as listed in the List of Documents Reviewed section) for regulatory compliance and for adequacy of control of radiation exposure. The review was against criteria contained in 10 CFR 20.1101 (Radiation protection programs), in 10 CFR 20.1701 (Use of process or other engineering controls), and in site procedures.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation

a. Inspection Scope (71121.03)

The inspectors reviewed the program for health physics instrumentation and for installed radiation monitoring instrumentation to determine the accuracy and operability of the instrumentation.

During plant tours on June 25 and 26, 2002, the inspectors reviewed field instrumentation utilized by health physics technicians and plant workers to measure radioactivity and radiation levels, including portable field survey instruments, hand-held contamination frisking instruments, and continuous air monitors. The inspectors conducted a selective review of the instruments observed in the toured areas, to

specifically verify current calibration status, performance of appropriate source checks, and proper instrument function.

On June 25, 2002, the inspectors met with two senior radiological engineers and reviewed the detection capability of the contamination monitoring equipment used at the exits of the RCA. The inspectors reviewed the licensee's source-term-review documentation to determine if the calibration sources used for contamination monitoring equipment were representative of the current plant source terms, if scaling factors were used to account for hard-to-detect radionuclides, and if the source terms were reviewed on a periodic basis for changes which could require changes in scaling factors. The inspectors also reviewed the site procedure for free release of radioactive material (i.e., RE-CON-3-4, "Release of Material from the Radiologically Controlled Area") for consistency in the stated release criteria in terms of acceptable instrument response.

On June 25, 2002, the inspectors also met with the senior radiological engineer and the system engineer who were responsible for tracking and trending the operational status of the installed radiation monitors. During this meeting, the inspection topics covered the methods used to track and trend the performance of the installed radiation monitors and the resolutions for recent selected conditions reports related to the installed radiation monitors.

The inspectors performed a selective examination of procedures, records, and documents (as listed in the List of Documents Reviewed section) for regulatory compliance and adequacy in this area. The review was against criteria contained in 10 CFR 20.1501, 10 CFR 20 Subpart H, site Technical Specifications, and site procedures.

b. Findings

No findings of significance were identified.

3. SAFEGUARDS

Cornerstone: Physical Protection (PP)

3PP1 Access Authorization Program

a. Inspection Scope (71130.01)

The following activities were conducted to determine the effectiveness of the licensee's behavior observation portion of the personnel screening and fitness-for-duty programs as measured against the requirements of 10 CFR 26.22 and the Licensees Fitness for Duty Program documents.

Five supervisors representing the Indian Point 2 and 3 Maintenance, Operations Procedures, Operations, and Engineering departments were interviewed on May 22, 2002, regarding their understanding of behavior observation responsibilities and the ability to recognize aberrant behavior traits. Two Access Authorization/Fitness-for-Duty self-assessments, two semi-annual Fitness for Duty performance data reports, one

audit, and the event reports and loggable events for the four previous quarters were reviewed during May 20-24, 2002. On May 22, 2002, five individuals who perform escort duties were interviewed to establish their knowledge level of those duties. Behavior observation training procedures and records were reviewed on May 21, 2002.

b. Findings

No findings of significance were identified.

3PP2 Access Control

a. Inspection Scope (71130.02)

The following activities were conducted during the inspection period to verify that the licensee has effective site access controls, and equipment in place designed to detect and prevent the introduction of contraband (firearms, explosives, incendiary devices) into the protected area as measured against 10 CFR 73.55(d) and the Physical Security Plan and Procedures.

The inspectors observed site access control activities, including personnel and package processing through the search equipment during peak ingress periods on June 4 and 5, 2002. On May 22, 2002, testing of all access control equipment; including metal detectors, explosive material detectors, and X-ray examination equipment, was observed. The Access Control event log, an audit, and three (3) self-assessments were also reviewed.

The inspectors also reviewed the Condition Detail Reports (CRs) generated and entered into the licensee's corrective action program, to address concerns identified during the inspection. The CR's reviewed are identified in the list of documents contained in this report.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification

a. Inspection Scope (71151)

The inspectors reviewed the licensee's data used to report the following NRC performance indicators for the fourth quarter of 2001 and the first quarter of 2002. The inspectors used the criteria of NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," and verified that the raw test data was consistent with the data reported to the NRC.

1) Safety System Functional Failures (SSFFs)
2) Drill and Exercise Performance (DEP)
3) Emergency Response Organization Drill Participation (ERO)
4) Alert and Notification System Reliability (ANS). The inspectors also reviewed PI data from the third quarter of 2001 through the first quarter of 2002

The inspectors also reviewed the licensee's programs for gathering and submitting data for the Physical Protection performance indicators. The review included the licensee's tracking and trending reports, personnel interviews and security event reports for the Performance Indicator data collected from the 2nd quarter of 2001 through the 1st quarter of 2002.

1) Fitness-for-Duty
2) Personnel Screening
3) Protected Area Security Equipment

2. Findings

No findings of significance were identified.

4OA3 Event Follow-up

a. Inspection Scope (71153)

.1 Chemical and Volume Control System Transient

On May 14, 2002, an unplanned transient in the chemical and volume control system (CVCS) caused an inadvertent dilution of the volume control tank (VCT), which resulted in diluted make-up water being injected into the reactor coolant system (RCS). This event required control room operators to immediately respond by heavily borating the RCS make-up water to avoid a net increase in average RCS temperature (Tavg) and reactor power. As a result of operator actions, the net effect on reactor power was a slight decrease of approximately 0.5% (see Inspection Report 50-286/02-03, Section 4OA3).

Following the event, the licensee's preliminary evaluation identified that a nuclear plant operator (NPO) mistakenly left open a demineralizer outlet isolation valve (CH-391) during preparations to rinse the 31 Cation Bed, instead of verifying the valve closed as required by procedure SOP-CVCS-009A, "Resin Replacement-CVCS Demineralizers." The preliminary evaluation also indicated that several other factors contributed to this event, including an inadequate pre-job briefing for the resin replacement evolution, a lack of self checking by the NPO while aligning CVCS valves prior to the resin replacement. The licensee entered this event into the corrective action system as CR-IP3-2002-01710, and initiated a formal root cause analysis to determine the primary and contributing factors related to the event. The inspectors opened unresolved item (URI) 50-286/02-03-01 pending NRC review of the completed analysis, and subsequent evaluation of the risk significance related to the event.

The inspectors reviewed the root cause analysis report and discussed the results with operations management. The report concluded that the primary root cause of the event was human error, and the ineffective use of tools and techniques for identifying the proper components during the initial CVCS alignment prior to the resin discharge. The report identified that the NPO involved in the system alignment did not have the required procedure at the job site at all times, and did not always exercise the proper self checking techniques, i.e., using the procedure to verify the correct component tag numbers or nomenclature. The report concluded that the event would not have occurred if a peer check or an independent verification of the valve lineup had been made. The report also identified several contributing causes related to management expectations that were not clear or were not followed, including 1) a risk assessment for the resin discharge evolution that did not recognize it as a potential reactivity concern, 2) procedure place-keeping requirements that were not adhered to, 3) conflicting expectations related to radioactive waste reduction and taking procedures into a high radiation area, and 4) a weak pre-job briefing that did not identify critical steps or discuss worst-case scenarios, and did not have operations supervision present, and 5) time pressure to complete the evolution during an unusually high activity work week.

The licensee also used the plant simulator to observe the results of 1) an injection of 120 gallons of pure water into the RCS with no subsequent operator action, and 2) a continuous injection of pure water into the RCS with no operator action. The inspectors reviewed the simulator data records from these scenarios together with the plant data records from the CVCS transient. These results were compared with the CVCS malfunction analysis contained in Section 14.1.5 of the Final Safety Analysis Report (FSAR) to confirm that the plant would not have exceeded the limits specified in the licensing basis boron dilution analysis.

.2 Request for Enforcement Discretion; Service Water System

On June 5, 2002, while performing routine rounds, a nuclear plant operator discovered a small leak (approximately 1 drop per second) in an 18-inch service water header (line number 408). Engineering personnel inspected the pipe and confirmed a leak in a weld to a tee connection. The condition was entered into the IP3 corrective action program as condition report CR-IP3-2002-02038. The licensee performed non-destructive examination (NDE) on the weld to characterize the extent of degradation. Radiographic

testing (RT) was performed on June 6, and detailed ultrasonic testing (UT) was performed on June 7.

Following evaluation of all data collected, Engineering concluded that the degraded condition did not provide sufficient structural integrity, and results of a pipe stress analysis could not support operability with the existing flaw. The licensee subsequently declared the pipe inoperable and initiated actions to repair the weld. However, based on the anticipated time to repair the weld, licensee management concluded that they should request from the NRC a one-time Notice of Enforcement Discretion (NOED) to extend the service water system allowed outage time (TS 3.7.9.E.1) from 12 to 72 hours. 72 hours was considered sufficient time to repair and test the pipe. The extension would require that the degraded pipe joint and three fan cooler units be isolated, and that maintenance of the safety functions of other components (EDGs, FCUs, etc) cooled by service water would be analyzed under the provisions of the Safety Function Determination Program (TS 5.5.14) as required by TS 3.0.6.

The licensee made a verbal NOED request during a conference call in the evening of June 7, 2002. After due consideration of the licensee's safety basis for the request, the NRC issued a verbal NOED to the licensee on June 8, extending the allowed outage time to 72 hours. The affected section of piping was isolated later on June 8, and repairs were initiated. The licensee subsequently completed a complete repair in accordance with the requirements of the American Society of Mechanical Engineers (ASME) Code, Section XI. The total duration of inoperability of the service water system was approximately 44.5 hours.

During the conference call on June 7, the licensee stated that specific compensatory actions were planned to protect all three EDGs and offsite power circuits during the service water pipe repairs. The licensee also planned to invoke administrative controls for a special evolution for the period of time that the service water system was inoperable. These controls included designating a special evolution manager to provide extra management oversight and provisions to assure that certain redundant components are protected from being taken out of service. The inspectors reviewed these controls with licensee management during the weld repair, and confirmed that sufficient protection was afforded to the two remaining fan cooler units, the two containment spray trains, the three EDGs, and offsite electrical feeders.

As part of an initial extent-of-condition review, the licensee also committed to an NDE inspection of a similar weld on the opposite header (line 409). The ultrasonic test was performed on June 8, and the test results showed that the acceptance criteria for minimum required weld thickness was met. A walkdown of the service water header to the two FCUs that remained in service was also performed and no leakage was identified. On June 11, 2002, the inspectors discussed the extent-of-condition review with Engineering and QA personnel, and reviewed the NDE results for the equivalent weld in line 409. The results showed no areas below minimum wall.

On June 11, 2002, the licensee submitted a formal letter (IPN-02-046) documenting their request for enforcement discretion. On June 13, 2002, the NRC issued a letter formally documenting the NOED (No. 2002-01-02). The inspectors reviewed the June

7, minutes from the Onsite Safety Review Committee (OSRC), Meeting Number 02-013 for consistency with the formal NOED correspondence.

The inspectors reviewed the root cause evaluation that was issued on July 10, 2002, for this specific pipe leak. The report concluded that the weld was defective from original plant construction and was aggravated by long-term crevice corrosion. The inspectors also reviewed with cognizant engineering personnel procedure TSP-048, "IP3 SWS Corrosion Monitoring Program Implementing Procedure," which implements service water corrosion-monitoring under the licensee's Generic Letter 89-13 program. This specific weld was not previously included in past inspection samples; however, the root cause evaluation did not identify any new degradation mechanism that was not already considered by the monitoring program.

b. Findings

No findings of significance were identified. The inspectors reviewed one licensee-identified violation of very low safety significance which was documented in the licensee's corrective action program. This violation is documented in Section 4OA7 of this report.

4OA6 Meetings

NRC Regional Management Visit to Indian Point 3 and Entergy Nuclear Northeast Corporate Offices

On May 29, 2002, Hubert J. Miller, NRC Regional Administrator, Region I; Brian Holian, Deputy Division Director, Division of Reactor Projects, and Peter Eselgroth, Branch Chief, Division of Reactor Projects visited the Indian Point 3 plant in Buchanan, New York, and the Entergy Nuclear Northeast Corporate Offices in White Plains, New York. The visit consisted of a general facilities tour, and discussions with senior managers.

Exit Meeting Summary

On July 29, 2002, the inspectors presented the inspection results to Mr. R. Barrett and Entergy staff members who acknowledged the inspection results presented. The inspectors asked Entergy personnel whether any materials evaluated during the inspection were considered proprietary. No proprietary information was identified.

4OA7 Licensee-identified Violations

The following violations of very low safety significance (Green) were identified by the licensee, and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as an NCV.

.1 Planning Standard (PS) 50.47(b)(14) requires that periodic drills be conducted to develop and maintain key skills for emergency responders. E-Plan Section 8.0, Table 8-1 specifies that an annual health physics (HP) drill be conducted. Procedure EP-ADM-04, "Conduct of Emergency Exercises and Drills," Section 4.1.D.2, which implements the E-Plan, specifies that semi-annual HP drills be conducted. The E-Plan previously

correctly specified that the HP drills be done semi-annually but the requirement was improperly revised to annually.

This issue was identified in a recent QA audit of the EP program and was documented in the licensee's corrective action program as CR-IP3-2002-02137. Because the licensee had documentation that showed annual HP drills were performed, this violation was of very low safety significance, and is being treated as a Non-cited Violation.

.2 10 CFR 50, Appendix B, Criterion V, requires in part that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to the above, the licensee identified that on March 14, 2002, it did not properly configure the chemical and volume control system (CVCS) prior to a resin discharge evolution in accordance with the instructions in standard operating procedure SOP-CVCS-009A, "Resin Replacement - CVCS Demineralizers." The improper CVCS configuration resulted in a momentary automatic injection of diluted make-up water to the reactor coolant system (RCS) and a small increase in average RCS temperature, which required an immediate response by control room operators to heavily borate the RCS make-up water. This item was entered into the licensee's corrective action system as condition report CR-IP3-2002-01710. This event had very low safety significance since operator actions resulted in only a minor change in reactor power (<0.5%), and prevented a primary system transient. Therefore, this event is being treated as a Non-cited Violation consistent with Section VI.A. of the Enforcement Policy, issued May 1, 2000 (65 FR 25388). (**URI 50-286/02-03-01** is closed).

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

a. Keys Points of Contact

R. Barrett	Vice President, Operations - IP3
R. Cavalieri	Site Planning and Outage Services Manager
R. Christman	Assistant Operations Manager, Office Staff
J. Comiotes	Director, Nuclear Safety Assurance
J. DeRoy	General Manager of Plant Operations
M. Devlin	Work Control Manager
R. Discensi	Radiation Protection/Chemistry Dept. Manager
J. Donnelly	Corrective Actions and Assessment Manager
M. Gillman	Operations Manager
J. McCann	Licensing Manager
E. O'Donnell	Assistant Operations Manager, Operating Crews
J. Perrotta	Quality Assurance Manager
M. Smith	Director, IP-3 Engineering
A. Vitale	Maintenance Manager
C. Welling	Site Business Manager
J. Wheeler	Training Manager

b. List of Items Opened, Closed, and Discussed

Opened

None

Closed

URI 50-286/02-03-01	NRC review of the root cause and potential risk consequences of the CVCS dilution event.

Opened/Closed

None

c. List of Documents Reviewed for Radiation Safety

Section 2OS1, Access Control to Radiologically Significant Areas :

- RWP 02-0018, Valves, Flanges, and Fittings (CH-AOV-142 and CH-109), Rev. 2
- RWP 02-0028, Containment Entry - Reactor Critical - OCW, Rev. 29
- RWP 02-0044, Sump Tank Clean and Inspect, Rev. 00
- RWP 02-0150, Service Water Pipe Leak Repair, Rev. 01
- Procedure RE-ADM-1-7, Health Physics Access Key Control, Rev. 7
- Procedure RE-ADM-1-9, Contractor Personnel Selection, Qualification, and Training, Rev. 2
- Procedure RE-ACC-5-2, Instructions to Control Point Personnel, Rev. 15
- Procedure RE-UOE-14-4, Radiological Event Reporting and Investigation, Rev. 16
- Dose Projection for Week 2-25 (06/23-29/02)
- Year 2001 Area Monitoring TLD Summary, IP-RES-2002-044, May 28, 2002
- Review of the Indian Point Unit 3 Radiation Protection Program, January 2001-December 2001, IP-RES-2002-032, April 19, 2002
- RER Summary Report - 1st Quarter 2002, IP-RES-2002-030, April 11, 2002
- Year 2002 RES Self-Assessment Schedule
- Health Physics Watch Duties Semi-Annual Assessment, IP-HPS-2002-037, June 20, 2002
- Assessment of Radiochemistry Labs, IP-HPS-2002-036, June 18, 2002
- Benchmarking Plan for RES Training-2002
- Radworker Practices Coaching Card
- Interoffice Correspondence IP-HPS-2002-038, Temporary RCA Entry and Egress, June 26, 2002

Section 2OS2, ALARA Planning and Controls :

- IP3 Daily ALARA Information Sheet, June 23, 2002
- RWP Activity Summary Between June 17 to 23, 2002
- IP3 Weekly Exposure Trend (mrem) from January 1 to June 15, 2002
- Dose Estimate/Budget ALARA Plan for RWP 02-018 for valves, flanges, and fittings (CH-AOV-142 and CH-109), Rev. 2
- Dose Estimate/Budget ALARA Plan for RWP 02-0150 for Service Water Leak, June 7, 2002
- Year 2002 1st Quarter Review of Station ALARA Program, IP-HPS-2002-027, April 16, 2002
- Benchmarking Plan for Outage ALARA Program-2002
- ALARA Committee Meeting Briefing Package for June 26, 2002
- ALARA HIT Team RO12 Readiness Review Plan, April 15, 2002
- Memo, Insulation Removal (for reactor head inspection), May 10, 2002
- Draft Bench Marking Report on Comparison with Seabrook's Outage ALARA Program

Section 2OS3, Radiation Monitoring Instrumentation and Protective Equipment :

- Procedure RE-CON-3-4, Release of Material from the Radiologically Controlled Area, Rev. 10
- Calibration Procedure and Record 3PC-R14A, Test, Calibration, and Radiation Source Check for ARMs (Monitors R34 A, B, and C (CVCS Hold Up Tanks #31, 32, 33), Monitors R38 A, B, and C (Waste Hold Up Tanks #31, 32, and 33), and Monitor R38 D (Waste Hold Up Tank Pump Room))(Calibration performed on June 15, 1999)
- Indian Point 3 Nuclide Mix Evaluation - 1998, TID-99-002, Rev. 0, dated April 14, 2000
- FP-13, Inspection and Testing of SCBA, Rev. 11

d. List of Acronyms

ABFP	auxiliary boiler feedwater pump
ACTS	Action Commitment Tracking System
AFW	auxiliary feedwater
ALARA	As Low As Reasonably Achievable
ANS	alert and notification system
CFR	Code of Federal Regulations
COL	check-off list
CR	condition report
CVCS	chemical and volume control system
DEP	Drill and Exercise Performance
DER	Deviation/Event Report
EDG	emergency diesel generator
EP	Emergency Plan
EPIP	Emergency Plan Implementing Procedure
ERO	Emergency Response Organization
FCU	fan cooler unit
FIN	Finding
FP	fire protection
HP	Health Physics
HRA	High Radiation Area
IRPI	individual rod position indicator
IR	inspection report
IST	inservice test
KV	kilo volts
LHRA	Locked High Radiation Area
NCV	Non-cited Violation
NDE	non-destructive examination
NEI	Nuclear Energy Institute
NOED	Notice of Enforcement Discretion
NPO	nuclear plant operator
NRC	Nuclear Regulatory Commission
OD	operability determination
OS	Occupational Radiation Safety
PAB	primary auxiliary building

PFP	Pre-Fire Plan
PID	problem identification
PIM	Plant Issues Matrix
PMT	post-maintenance test
QA	quality assurance
RAMS	radioactive machine shops
RCA	radiologically controlled area
RCP	reactor coolant pump
RCS	reactor coolant system
RT	radiographic test
RWP	Radiation Work Permit
SI	safety injection
SOP	system operating procedure
SSFF	safety system functional failure
Tavg	average RCS temperature
TM	temporary modification
TS	Technical Specifications
URI	Unresolved Item
UT	ultrasonic test
VCT	volume control tank
WR	work request