

August 11, 2004

Mr. Fred R. Dacimo  
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SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT No. 3 - NRC INTEGRATED  
INSPECTION REPORT 05000286/2004003

Dear Mr. Dacimo:

On June 30, 2004, the US Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating Unit No. 3 (IP3). The enclosed report presents the results of that inspection. The results were discussed on July 21, 2004 with you 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. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of the inspection, three findings of very low safety significance (Green) were identified. These findings were determined to be violations of NRC requirements. However, because of their very low safety significance, and because they were entered into your corrective action program (CAP), the NRC is treating these findings as Non-cited Violations (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest the NCVs in this report, you should provide a response within 30 days of the date of this report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Resident Inspector at Indian Point 3.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the

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Sincerely,

*/RA/*

Brian J. McDermott, Chief  
Projects Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report No. 05000286/2004003  
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No: 50-286

License No: DPR-64

Report No: 05000286/2004003

Licensee: Entergy Nuclear Northeast

Facility: Indian Point Nuclear Generating Unit No. 3

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

Dates: April 1, 2004 - June 30, 2004

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## SUMMARY OF FINDINGS

IR 05000286/2004003; 04/01/2004 - 06/30/2004, Indian Point Nuclear Generating Unit No. 3; Operability Evaluations, Post Maintenance Testing.

The report covers a three-month period of inspection by resident inspectors, and a regional senior health physicist. Three Green Non-cited Violations (NCVs) and three licensee-identified violations were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," (SDP). The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process" Revision 3, dated July 2000.

### A. NRC Identified and Self-Revealing Findings

#### Cornerstone: Mitigating Systems

- Green. The inspector identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, for a failure to promptly identify and correct repetitive failures of the 31 Central Control Room Air Conditioning (CCRAC) unit. From March 30, 2004 to April 30, 2004, Entergy documented that the 31B CCRAC unit compressor tripped six times and required operator action to restart. This condition was not identified as an operator work-around/burden and Entergy did not evaluate the fact that operator actions may be required to ensure the safety-related function of the 31 CCRAC unit. Entergy failed to promptly identify and correct a material deficiency with the compressor belt on the 31 CCRAC unit which reduced the reliability of the air conditioning unit.

This finding is greater than minor because it is associated with the Mitigating Systems Cornerstone attribute of equipment performance and adversely affected the objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. The particular failure of the 31 CCRAC unit required operator actions to restore one of the two safety-related trains of CCRAC to service. The finding is of very low safety significance because the remaining train of CCRAC was operable and the short duration of the affected train's unavailability. (Section 1R15)

- Green. The inspector identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, for a failure to identify and correct a material deficiency with the 34 Auxiliary Boiler Feedwater flow indicator. Under no flow conditions, the Technical Specification (TS) required indicator erroneously displayed a value that exceeded the required instrument tolerance. If left uncorrected, this condition could have caused operators to reduce flow to below the value required by emergency operating procedures during a reactor trip response.

This finding is greater than minor because it is associated with the Mitigating Systems Cornerstone attribute of equipment performance and adversely affected the objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance because steam generator level indication remained operable and would have allowed operators to recognize an abnormal auxiliary feedwater flow condition. (Section 1R15)

- Green. The inspector identified a non-cited violation of Technical Specification 5.4.1, for a failure to operate the safety-related 32 CCRAC unit in accordance with station procedures. This violation involved the failure to perform a required step in the procedure to open the 32 CCRAC unit discharge damper, which caused the 32 CCRAC unit's compressors to trip.

This finding is greater than minor because it is associated with the Mitigating Systems Cornerstone attribute of configuration control and adversely affected the Mitigating Systems Cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Leaving the discharge damper from the 32 CCRAC unit shut left one of two safety-related trains of CCRAC inoperable. The finding is of very low safety significance because the remaining train of CCRAC was operable and the duration of the inoperability of the affected train was short. (Section 1R19)

#### B. Licensee-Identified Violations

Violations of very low safety 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 CAP. These violations and corrective actions are listed in Section 4OA7 of this report.



## REPORT DETAILS

### Summary of Plant Status

Indian Point Nuclear Generating Unit No. 3 (IP3) operated at or near full power for the entire report period.

#### **1. REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness

#### 1R04 Equipment Alignment

##### 1. Partial System Walkdowns

##### a. Inspection Scope (71111.04Q - 3 samples)

The inspectors performed system walkdowns during periods of system train unavailability in order to verify that the alignment of the available train was proper to support the availability of safety functions, and to assure that the licensee had identified and properly addressed equipment discrepancies that could potentially impair the functional capability of the available train.

On April 30, 2004, the inspector performed a partial system walkdown of the 32 control room air conditioning system during and after the maintenance on the 31 control room air conditioning system. The inspector used procedure SOP-4-004, "Control Room Heating, Ventilation and Air Conditioning System," Rev. 14, to check for correct valve and power alignments.

On May 12, 2004, the inspector performed a partial system walkdown of the 32 boric acid transfer pump during and after completion of corrective maintenance on the 31 boric acid transfer pump. The inspector used procedure COL-CVCS-1, "Chemical and Volume Control System," Rev. 24, during the walk-down to assess the general condition of the system and to verify correct system alignment.

On May 21, 2004, the inspector performed a partial system walkdown of the service water system during and after the maintenance on the 32 service water pump. The inspector used procedure 3-COL-RW-2, "Service Water System," Rev. 38, to check for correct valve and power alignments.

##### b. Findings

No findings of significance were identified.

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2. Full Equipment Alignment

a. Inspection Scope (71111.04S - 1 sample)

The inspectors performed an extensive walkdown of the auxiliary feedwater system. The inspectors walked down the entire system with the exception of those components located in the vapor containment using COL-FW-2, "Auxiliary Feedwater System," Rev. 28, and SOP-FW-004, "Auxiliary Feedwater System Operation," Rev. 24. The inspectors verified that components were in the proper position per the checkoff list (COL) and verified that any position discrepancies were properly documented. The inspectors also verified that the field configuration was consistent with the current revision of the COL. The inspectors reviewed condition reports IP3-2004-00451, IP3-2001-02283, IP3-2002-04006, IP3-2003-04717 and IP3-2001-03275 written to address discrepancies between the field configuration and current COL that were identified by the inspectors. The inspectors verified that the corrective actions were appropriate. In addition, the inspectors evaluated the physical condition of the equipment during the walkdown.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope (71111.05Q - 6 samples)

The inspectors conducted fire protection tours in the fire zones listed below to ensure that the licensee was controlling transient combustibles in accordance with fire protection procedure FP-9, "Control of Combustibles," Rev. 9; to ensure that ignition sources were controlled in accordance with FP-8, "Controlling of Ignition Sources," Rev. 11; to ensure that fire protection equipment specified in the Pre-Fire Plans (PFPs) was available and functional; and to assess the general material condition of fire protection barriers and fire suppression equipment. The fire zones were selected for inspection based on their relative fire initiation risk and the safe shutdown equipment located in the areas.

- 55-ft elevation of the Primary Auxiliary Building (Fire Zone 17A).
- 36-ft elevation of the Control Building in Cable Spreading Room (Fire Zones 11, 12 and 13).
- 95-ft elevation of the Fuel Storage Building (Fire Zone 90A).
- 53-ft elevation of the Control Building in Central Control Room (CCR) (Fire Zone 15). The inspectors reviewed Entergy's actions to address transient combustibles left in the CCR during work on bathroom remodeling.
- 15-ft elevation of the Turbine Building (Fire Zone 39A).
- 15-ft elevation of the Diesel Generator Building (Fire Zone 101A).

b. Findings

No findings of significance were identified.

1R11 Operator Requalification Inspection

a. Inspection Scope (71111.11Q - 1 sample)

On April 12, 2004, the inspector observed simulator training for licensed operators on Operations Team 3E. Training activities were evaluated using the guidance in NRC Inspection Procedure 71111, Attachment 11. The inspectors reviewed an “as found” simulator scenario, performed per lesson plan LRQ-SES-61, “Dropped Control Rod, Pressurizer Steam Space Leak,” for a dropped control rod and subsequent loss of coolant accident due to a pressurizer steam space leak. The inspector verified the scenario 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 exercise, the inspectors evaluated the team’s performance for: 1) clarity and formality of communications; 2) correct use and implementation of emergency operating procedures (EOPs) and off-normal operating procedures (ONOPs); 3) operators’ ability to properly interpret and verify alarms; and, 4) operators’ ability to take timely actions in a safe direction based on transient conditions. In addition, the inspectors evaluated the control room supervisor’s ability to exercise effective oversight and control of the crew’s actions during the exercise. The inspectors verified that the feedback from the instructors was thorough that they identified specific areas for improvement, and that they reinforced management expectations regarding crew competencies in the areas of procedure use, communications, and peer checking. The inspectors also evaluated the licensee’s post-scenario critique.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope (71111.12Q - 2 samples)

The inspectors reviewed the maintenance activities listed below, and recent performance issues involving systems and components 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 1.160, “Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” the inspectors verified that Entergy 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.

The inspectors also reviewed work orders (WOs), and associated post-maintenance test (PMT) activities, to assess whether: 1) the effect of maintenance work in the plant had been adequately addressed by control room personnel; 2) work planning was adequate for the maintenance performed; 3) the acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing documents; and, 4) the equipment was effectively returned to service. The below listed maintenance activities and associated documents were observed and evaluated.

- WO IP3-04-06546: On May 20, 2004, the inspector reviewed maintenance activities to correct repetitive failures of the emergency lighting system. The inspector verified the licensee took appropriate actions for a licensee-identified violation of 10 CFR 50.65 (a) (1).
- WO IP3-04-06528: On May 25, 2004, the inspector reviewed maintenance activities to troubleshoot and repair the containment building pressure relief valve VS-PCV-1191. The valve was observed to close slower than the times specified in the In-Service Testing program. The inspector verified that the licensee's response to this degraded condition was appropriate and that following repairs and post-work testing the licensee properly declared the valve operable (CR-IP3-2004-01873).

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Control

a. Inspection Scope (71111.13 - 5 samples)

The inspectors reviewed maintenance risk assessments, work request tags (WRTs), corrective maintenance work order packages for emergent and scheduled work, observed the repair activities in the plant, and discussed the degraded conditions with cognizant plant personnel (system engineers, technicians, and maintenance workers). The inspectors also reviewed the licensee's risk assessments for the impact of emergent work upon the existing work schedule to assure that the emergent work did not impose an unacceptable level of risk to continued plant operations. The following four emergent and one planned work activities were reviewed:

- WO IP3-04-09182: Replacement of transformer DP-578 after discovering insufficient voltage to actuate electrical thermal links to shut fire door FDR-30-CB between the cable spreading room and the cable tunnel.
- CR IP3-2004-02263: Securing 138kV feeder 95331 and changing 138kV offsite power supply to 95332 to support Consolidated-Edison switchgear repairs.
- CR IP3-2004-02048: While performing 3PT M79C, 33 emergency diesel generator (EDG) tripped on reverse power. The inspectors verified the

adequacy of Entergy's subsequent EDG operability determination, consistent with 3PT-WO19, "Electrical Verification."

- CR IP3-2004-02063: 345 kV breaker 1 opened due to feeder W97 dropping out. The inspectors verified the incoming offsite power sources remained available.
- WO IP3-04-019098: (planned) The inspectors reviewed the semi-annual inspections on the Appendix R EDG.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope (71111.14 - 1 sample)

For the non-routine event described below, the inspectors reviewed operator logs, plant computer data, and strip charts to determine what occurred and if operators responded in accordance with plant procedures:

On April 29, 2004, the inspectors observed the control room and plant operator activities while placing the 31 Main Feedwater Regulating Valve (MFRV) on the jack and controlling steam generator water level using the MFRV bypass valve. The inspectors verified the licensee followed 3-SOP-FW-001, "Main Feedwater System Operation." This evolution was conducted to facilitate replacement of the cam on the MFRV actuator.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope (71111.15 - 6 samples)

The inspectors selected operability evaluations the licensee had generated that warranted review on the basis of potential risk significance. The selected sample of associated CRs is listed below. The inspectors assessed the accuracy of the evaluations, the use and control of compensatory measures, if needed, and compliance with the Technical Specifications (TS). The inspectors review included a verification that the operability evaluations were made as specified by procedure ENN-OP-104, "Operability Determinations." The technical adequacy of the evaluations was reviewed and compared to the TS, Technical Requirements Manual (TRM), the Final Safety Analysis Report (FSAR), and associated design basis documents.

- CR IP3-2004-01099 Leakage from 31 Residual Heat Removal (RHR) heat exchanger thermal relief valve SI-733B.
- CR IP3-2004-01502 Transient glue and primer left in the Central Control Room (CCR) evaluated for impact on control room atmosphere and filter carbon bed.
- CR IP3-2004-01570 34 Auxiliary Boiler Feedwater flow indicator deflecting above zero flow when no flow was present in the pipe.
- CR IP3-2004-01524 31 Central Control Room Air Conditioner repetitive trips requiring operator actions to restore the train.
- CR IP3-2004-02048 33 EDG tripped on reverse power during 3PT-M79C.
- CR IP3-2004-02063 345 kV breaker 1 solenoid operated air leak following feeder W97 dropping out.

b. Findings

1. 31 Central Control Room Air Conditioning Unit

Introduction. The inspector identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, for a failure to promptly identify and correct repetitive failures of the 31 Central Control Room Air Conditioning (CCRAC) unit. From March 30, 2004 to April 30, 2004, Entergy documented that the 31B CCRAC unit compressor tripped six times and required operator action to restart. This condition was not identified as an operator work-around/burden and Entergy did not evaluate the fact that operator actions may be required to ensure the safety-related function of the 31 CCRAC unit. Entergy failed to promptly identify and correct a material deficiency with the compressor belt on the 31 CCRAC unit which reduced the reliability of the air conditioning unit.

Description. The inspector determined that on April 27, 2004, the licensee had generated work order WO IP3-04-06313 for troubleshooting and repair of the 31 CCRAC problems. However, this work was not scheduled to be completed for several weeks until a routine preventive maintenance period. The inspectors observed that the licensee did not evaluate the potential of the 31 CCRAC unit tripping and consequently being challenged during a design basis event. The condition of the 31 CCRAC unit was not classified as an operator work-around or burden and the licensee had not evaluated the fact that operator actions may be required to ensure the safety-related function of the 31 CCRAC unit would remain available in all circumstances. The inspectors discussed this condition with the engineering staff, who suspected a bad switch internal to the unit. The inspectors questioned the operability of the 31 CCRAC unit on April 30, 2004 with operations management. On April 30, 2004, the licensee entered the problem into their corrective action program (CAP) and concluded that the 31 CCRAC unit was operable, based only on the fact that the unit restarted immediately. The 31 CCRAC unit requires both compressors operating in order to perform its intended safety

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function. Operations appropriately rescheduled the troubleshooting and repair of 31 CCRAC on May 4, 2004. Maintenance technicians discovered that the problem was actually a loose compressor belt, and not a bad flow switch as previously assumed by the engineering staff.

Analysis. The inspectors determined that Entergy's failure to promptly identify and correct a material deficiency with the compressor belt on the safety related 31 Central Control Room Air Conditioning Unit was a performance deficiency associated with the Mitigating Systems Cornerstone, and was contrary to NRC regulations. Traditional enforcement does not apply because an event did not occur that resulted in an actual safety consequence, the failure to follow procedures did not impact the NRC's regulatory function, and the failure to follow procedures was not the result of a willful violation of NRC requirements or Entergy procedures. The finding is greater than minor because it is associated with the Mitigating Systems Cornerstone attribute of equipment performance and adversely affected the objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. This finding was evaluated using Phase I of the Significance Determination Process for Reactor Inspection Findings for At-Power Situations. The finding involved the reliability of a train of safety-related equipment, and the evaluation used the screening criteria in the Phase I worksheet for Initiating Events, Mitigating Systems and Barrier Integrity Cornerstones. The 32 CCRAC remained operable for the duration of the period that 31 CCRAC was inoperable. Additionally, the duration of each 31 CCRAC unit trip was for a short period (less than sixty minutes) which limited the possibility of control room temperature rising to a point where equipment would become adversely affected. Therefore, the finding was determined to be of very low safety significance (Green).

This finding is associated with the cross-cutting area of problem identification and resolution, in that the failure to identify and correct a deficiency impacted the reliability of a mitigating system (see Section 4OA2).

Enforcement. 10 CFR 50, Appendix B, Criterion XVI, states that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment are promptly identified and corrected. Contrary to the above, Entergy did not promptly identify and correct repetitive failures of the 31 CCRAC. Because this issue was entered into the licensee's CAP (reference CR-IP3-2004-01524), this violation is being treated as an NCV consistent with Section VI.A. of the NRC Enforcement Policy. **(NCV 05000286/2004003-02, Failure to identify and correct repetitive failures of the 31 Common Control Room Air Conditioning System.)**

2. 34 Auxiliary Boiler Feedwater Flow Indicator

Introduction. The inspector identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, for a failure to identify and correct a material deficiency with the 34 Auxiliary Boiler Feedwater flow indicator. Under no flow conditions, the TS required indicator erroneously displayed a value that exceeded the required instrument

tolerance. If left uncorrected, this condition could have caused operators to reduce flow to below the value required by emergency operating procedures during a reactor trip response.

Description. On April 30, 2004, the inspector noted that FI-1203 was indicating flow above zero and brought this to the attention of the licensee's Operations Department. On May 4, 2004, the operators observed FI-1203 displaying a value of 60 GPM and generated CR IP3-2004-01570. As a result of questions by the inspector concerning the instrument's operability, the licensee performed a formal operability evaluation on May 19, 2004, and began taking actions to troubleshoot on May 21, 2004. Previous problems with the flow indicator occurred on July 20, 2003, when the control room operators observed 34 Auxiliary Boiler Feedwater flow indicator (FI-1203) displaying a value of 105 GPM (CR IP3-2003-04303), and on November 4, 2003, when the control room operators observed FI-1203 displaying a value of 75 GPM.

FI-1203 is required to be calibrated every eighteen months in accordance with SR 3.3.3.2. Calculation IP3-CALC-AFW-01801 establishes the tolerances for the as-found and as-left conditions for the calibration of FI-1203. The inspector noted that the required tolerance for the as-found condition of FI-1203 with a zero flow input is an instrument display between zero and 59.5 GPM. The requirements for the accuracy of FI-1203 are based on operators being able to properly control and ensure adequate auxiliary feedwater flow after a design basis event.

Analysis. The inspectors determined that Entergy's failure to promptly identify and correct a material deficiency with the 34 Auxiliary Boiler Feedwater flow indicator is a performance deficiency associated with the Mitigating Systems Cornerstone, and is contrary to NRC regulations. Traditional enforcement does not apply because an event did not occur that resulted in an actual safety consequence, the failure to follow procedures did not impact the NRC's regulatory function, and the failure to follow procedures was not the result of a willful violation of NRC requirements or Entergy procedures. The finding is greater than minor because it is associated with the Mitigating Systems Cornerstone attribute of equipment performance and adversely affected the objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. This finding involved the Mitigating Systems Cornerstone and was evaluated using Phase I of the Significance Determination Process for Reactor Inspection Findings for At-Power Situations. The finding involved the unavailability of a post-accident monitoring safety-related instrument, and the evaluation used the screening criteria in the Phase I worksheet for Initiating Events, Mitigating Systems and Barrier Integrity Cornerstones. The 34 steam generator level indication remained operable during the period that FI-1203 was inoperable and would have allowed operators to recognize an abnormal auxiliary feedwater flow condition. Therefore, the finding was determined to be of very low safety significance (Green).

This finding is associated with the cross-cutting area of problem identification and resolution, in that the failure to identify and correct a deficiency impacted the reliability



and availability of a mitigating system and could have caused an additional challenge to operators during an accident condition (see Section 4OA2).

Enforcement. 10 CFR 50, Appendix B, Criterion XVI, states that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment are promptly identified and corrected. Contrary to the above, Entergy did not promptly identify and correct failures of FI-1203. Because this issue was entered into the licensee's CAP (reference CR-IP3-2004-01715), this violation is being treated as an NCV consistent with Section VI.A. of the NRC Enforcement Policy. **(NCV 05000286/2004003-03, Failure to identify and correct an erroneous 34 auxiliary boiler feedwater flow indicator.)**

1R19 Post-Maintenance Testing

a. Inspection Scope (71111.19 - 5 samples)

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 selected testing activities involved components that were risk significant as identified in the IP3 Individual Plant Examination. The regulatory references for the inspection included Technical Specification 6.8.1.a and 10 CFR 50, Appendix B, Criteria XIV, "Inspection, Test, and Operating Status." The following testing activities were evaluated.

- WO IP3-02-20189: Post Work Test (PWT) after inspection and maintenance of 32 Central Control Room Air Conditioning (CCRAC) Service Water Relief valve performed on April 2, 2004.
- WO IP3-03-10806: PWT to perform 3PT-Q038B, "32 Boric Acid Transfer Pump Functional Test," Rev. 13, after replacement of mechanical seal of 32 Boric Acid Transfer Pump performed on April 22, 2004.
- WO IP3-04-16176: PWT after troubleshooting on 32 Static Inverter performed on June 23, 2004.
- 3PT-79MC: PWT after repairing unit-parallel relay on 33 EDG on June 10, 2004.
- WO IP3-04-15698: Test breaker No. 1 prior to returning to service after solenoid operated closing valve replacement.

b. Findings

Introduction. The inspector identified a Green non-cited violation of Technical Specification 5.4.1, for a failure to operate the safety-related 32 CCRAC unit in accordance with station procedures. This violation involved the failure to perform a required step in the procedure to open the 32 CCRAC unit discharge damper, which caused the 32 CCRAC unit's compressors to trip.

Description. On April 1, 2004, the maintenance technicians performed work activities that required securing the 32 CCRAC unit. This maintenance was completed and the 32 CCRAC unit was started using procedure SOP-V-004, "Control Room Heating, Ventilation and Air Conditioning," Rev. 14. On April 2, 2004, both compressors for the 32 CCRAC unit were found tripped. Plant operators investigated the cause of the problem and discovered ACU32-E2-Outlet, air conditioning units 32 outlet damper 'E2' shut.

Step 4.1.8 of SOP-V-004, "Control Room Heating, Ventilation and Air Conditioning," Rev. 14, requires the operator to ensure ACU32-E2-Outlet is open prior to starting the unit. The operators did not properly position ACU32-E2-Outlet due to confusion regarding the position indicator of the damper. Entergy subsequently determined that the damper was not properly labeled in accordance with OAP-044, "Plant Labeling Program."

The 32 CCRAC unit is completely isolated when ACU32-E2-Outlet is shut. This renders the 32 CCRAC unit inoperable. The 32 CCRAC unit is one of two safety-related trains of CCRAC. The CCRAC system is required to maintain safety-related equipment within the control room cooled below design temperature limits during design basis events.

Analysis. Entergy's failure to conduct activities in accordance with established procedures is a performance deficiency associated with the Mitigating Systems Cornerstone, and is contrary to NRC regulations. Traditional enforcement does not apply because an event did not occur that resulted in an actual safety consequence, the failure to follow procedures did not impact the NRC's regulatory function, and the failure to follow procedures was not the result of a willful violation of NRC requirements or Entergy procedures. The finding is greater than minor because it is associated with the Mitigating Systems Cornerstone attribute of configuration control and adversely affected the objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. This finding was evaluated using Phase I of the Significance Determination Process for Reactor Inspection Findings for At-Power Situations. The finding involved the unavailability of a train of safety-related equipment, and the evaluation used the screening criteria in the Phase I worksheet for Initiating Events, Mitigating Systems and Barrier Integrity Cornerstones. This finding was determined to be of very low safety significance (Green) because the 31 CCRAC unit remained operable for the duration of the period that 32 CCRAC unit was inoperable and because the 32 CCRAC unit was unavailable for a short period of time (seven hours and thirty-seven minutes).

This finding is associated with the cross-cutting area of human performance, in that operators had documented procedures available to operate the 32 CCRAC unit and they were not followed. This error impacted the availability of mitigating systems (see Section 4OA4).

Enforcement. Technical Specification 5.4.1, "Procedures," states that written procedures shall be established, implemented, and maintained per Regulatory Guide 1.33. Contrary to this requirement, Entergy did not properly implement procedure SOP-V-004 which required damper ACU32-E2-Outlet to be opened prior to starting the 32 CCRAC unit. Because this failure to follow procedures was entered into the licensee's CAP (reference CR-IP3-2004-01125), this violation is being treated as an NCV consistent with Section VI.A. of the NRC Enforcement Policy.

**(NCV 05000286/2004003-01, Failure to operate 32 Common Control Room Air Conditioning System in accordance with procedures.)**

#### 1R22 Surveillance Testing

##### a. Inspection Scope (71111.22 - 5 samples)

The inspectors observed portions of the surveillance tests listed below and reviewed the test procedures to assess whether: 1) the test pre-conditioned any of the components; 2) the effect of the testing was adequately addressed in the control room; 3) the scheduling and conduct of the tests were consistent with plant conditions; 4) the acceptance criteria demonstrated system operability consistent with design requirements and the licensing basis; 5) the test equipment range and accuracy were adequate for the application, and the test equipment was properly calibrated; 6) the test was performed in the proper sequence in accordance with the test procedure; and, 7) the affected system was properly restored to the correct configuration following the test.

- 3PT-Q110, "Main Steam Valves PCV-1310A, PCV-1310B, and PCV-1139 Stroke Test," Rev. 11; performed on April 7, 2004.
- 3PT-A029A, "31 EDG Underground FOST Leak Test Press/Vac/UT Method," Rev. 7; performed on April 13, 2004.
- 3PT-M13B1, "Reactor Protection Logic Channel Functional Test (Reactor Power Greater Than 35% - P8)," Rev. 9; performed on April 19, 2004.
- 3PT-D001, "Control Room Operations Surveillance Requirements," Rev. 9; performed on June 4, 2004.
- 3PT-M79C, "33 EDG Functional Test," Rev. 33; performed on June 10, 2004.

##### b. Findings

No findings of significance were identified.

### 1R23 Temporary Modifications

a. Inspection Scope (71111.23 - 1 sample)

The inspector reviewed documentation on Temporary Alteration No: TA-03-3-045 "Disconnect RCP-31 Vertical Frame Vibration Monitoring." The Reactor Coolant Pump (RCP) vertical vibration signal is normally processed by a Bentley Nevada Series 7000 monitoring system which then provides input for the RCP high vibration category alarm. The modification involved installing a jumper from the input of the normal monitoring system to a temporary data recording computer. The modification also involved disabling the alarm input for the RCP-31 vertical frame vibration to the RCP high vibration category alarm.

b. Findings

No findings of significance were identified.

### 1EP6 Drill Evaluation

a. Inspection Scope (71114.06 - 1 sample)

On May 12, 2004, the inspectors observed the licensee's emergency response organization during an announced emergency preparedness training drill initiated at Indian Point Unit 3 and extending to the entire site. The simulated emergency included the activation of the Operations Support Center (OSC), Technical Support Center (TSC), Emergency Operations Facility (EOF), and the Joint News Center (JNC) after an Alert (simulated) was declared by the simulator control room operators.

The inspectors observed the conduct of the exercise in the TSC and the EOF. The inspectors assessed licensed operator performance, the licensee's adherence to Emergency Plan Implementing Procedures, and their response to simulated degraded plant conditions. The inspectors verified licensee performance in the classification, notification, and protective action recommendations. In addition to the drill, the inspectors observed the licensee's controller critique and evaluated the licensee's self-identification of weaknesses and deficiencies. CR-IP2-2004-00599 concluded that three of four performance indicator opportunities (classifications, notifications, and protective action recommendations) were successful. The inspectors compared the licensee's identified findings against their observations.

b. Findings

No findings of significance were identified.

## 2. **RADIATION SAFETY**

Cornerstone: Occupational Radiation Safety (OS)

## 2OS3 Radiation Monitoring Instrumentation and Protective Equipment

### a. Inspection Scope (71121.03 - 9 samples)

During May 10-14, 2004, the inspector conducted the below listed activities to evaluate the operability and accuracy of radiation monitoring instrumentation, and the adequacy of the respiratory protection program for issuing self-contained breathing apparatus to emergency response personnel. Implementation of these programs was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and the licensee's procedures. Nine inspection activity samples were selected consistent with Sections 02.01 through 02.06 of Inspection Procedure 71121.03.

Plant walkdowns of accessible plant radiation monitors, review of the calibration methods and review of the most recent calibration records were performed for the following instruments:

- R-62A, B, C, D, main steam line radiation monitors
- R-11,12, gaseous and particulate containment radiation monitors
- RM-7, in-core detector/seal table area radiation monitor
- RM-2, containment area radiation monitor
- RM-14, plant ventilation radiation monitor
- R-15, condenser air ejector radiation monitor
- RE-19, steam generator blow down radiation monitor

The inspector selected in-use portable radiation survey and continuous air monitor instruments for operable condition, source response checks and reviewed the most recent calibration records for the following instruments:

- DMC-100 electronic dosimeters Nos. 104402 and 102378
- RO-2 ion chambers Nos. 10597, 10895 and 10599
- Merlin Gerin telepoles Nos. 11688 and 11690
- Gilian Iapal air samplers Nos. 05266 and 05269
- PING-1A continuous air monitor No. 10500

The inspector evaluated the adequacy of the respiratory protection program regarding the maintenance and issuance of self-contained breathing apparatus (SCBA) to emergency response personnel. Training and qualification records were reviewed for 43 licensed operators, who would be required to wear SCBA's in the event of an emergency. Emergency plan specified SCBA equipment and air bottle inventory for the Unit 3 control room and technical support center were verified. Selected SCBAs and air bottles were verified to be operable and maintenance records were reviewed.

### b. Findings

No findings of significance were identified.

## 4. **OTHER ACTIVITIES (OA)**

Enclosure

#### 4OA1 Performance Indicator Verification

##### a. Inspection Scope (71151 - 2 Samples)

The inspectors sampled licensee submittals for the performance indicators (PIs) listed below for the period from January 2003 through March 2004. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Rev. 1, were referenced.

##### Reactor Safety Cornerstone

- Safety System Functional Failures
- Reactor Coolant System Leakage

The inspector reviewed a selection of Licensee Event Reports, portions of operator log entries, daily morning reports (including the daily CR descriptions), the monthly operating reports, and PI data sheets to determine whether the licensee adequately identified the number of safety system functional failures that occurred during the previous four quarters. This number was compared to the number reported for the PI during the current quarter. The inspectors also reviewed daily morning reports, reactor coolant leakage surveillances, reactor coolant leakage evaluations and PI data sheets to determine whether the licensee adequately identified the reactor coolant system leakage over the previous four quarters. In addition, the inspectors also interviewed licensee personnel associated with the PI data collection, evaluation, and distribution.

##### b. Findings

No findings of significance were identified.

#### 4OA2 Problem Identification and Resolution

##### 1. Daily Review (71152)

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive failures or specific human performance issues for follow-up, the inspectors screened all items entered into the licensee's CAP. This review was accomplished by reviewing hard copies of each condition report.

##### 2. Semi-annual Trend Review (71152 - 1 sample)

##### a. Inspection Scope

The inspectors performed a semi-annual review to identify trends that might indicate the existence of a more significant safety issue. The inspectors included in this review repetitive or closely related issues that may have been documented by the licensee outside the normal CAP, such as trend reports, performance indicators, major

equipment problem lists, maintenance rework lists, departmental challenges, system health reports, maintenance rule assessments and maintenance and CAP backlogs.

The inspectors reviewed the licensee's CAP database over the last two calendar quarters of 2003 and the first two quarters of 2004 in order to assess the total number and significance of condition reports (CR) written in various subject areas such as equipment or processes, and to discern any notable trends in these areas. The CRs entered into the CAP in all quarters included those written as a result of NRC findings.

b. Findings

No findings of significance were identified.

3. Cross-References to PI&R Findings Documented Elsewhere

Inspection findings in previous sections of this report also had implications regarding Entergy's identification, evaluation, and resolution of problems, as follows:

Section 1R15.1 - failure to promptly identify and correct repetitive failures of the 31 Central Control Room Air Conditioning Unit.

Section 1R15.2 - failure to identify and correct a degraded condition affecting the accuracy of the 34 Auxiliary Boiler Feedwater flow indicator.

4OA4 Cross Cutting Aspects of Findings

Section 1R19 describes a finding in which operators failed to operate the 32 CCRAC per established written procedures. This error impacted the availability of mitigating systems. Consequently, a train of safety-related equipment was rendered inadvertently inoperable. This finding was determined to be associated with the cross-cutting area of human performance.

4OA5 Other Activities

1. Offsite Power System Operational Readiness

Cornerstones: Initiating Events, Mitigating Systems

a. Inspection Scope (2515/156)

The inspectors performed Temporary Instruction 2515/156, "Offsite Power System Operational Readiness." The inspectors collected and reviewed information pertaining to the offsite power systems related to the areas of the maintenance rule (10 CFR 50.65), the station blackout rule (10 CFR 50.63), offsite power operability, and corrective actions. The inspectors reviewed this data against the requirements of 10 CFR 50 Appendix A General Design Criterion 17, "Electric Power Systems," and IP3 Technical Specifications. This information was forwarded to NRR for further review.

Enclosure

b. Findings

No findings of significance were identified.

4OA6 Meetings

Exit Meeting Summary

1. On July 21, 2004, the inspectors presented the inspection results to Mr. F. Dacimo and other Entergy staff members, who acknowledged the inspection results presented. The inspectors asked the licensee what materials examined during the inspection should be considered proprietary. No proprietary information is presented in this report.

2. Management Site Visits

On July 14, 2004, Ellis Merschoff, Deputy Executive Director of Reactors and Brian Holian, Deputy Director, Division of Reactor Projects, visited the Indian Point Energy Center, toured IP2 and IP3 plant areas, and met with senior members of Entergy Nuclear Northeast, Inc.

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 NCVs:

1. 10 CFR 50.65 (a)(1) requires that non-safety related structures, systems and components that are used in plant emergency operating procedures (EOPs) be monitored against licensee established goals in a manner sufficient to provide reasonable assurance that such structures, systems and components are capable of fulfilling their intended functions. On October 7, 2003, engineering personnel discovered that the emergency lighting and plant communications systems were not scoped into the maintenance rule and their performance was not being tracked against licensee established goals. This issue was documented in the CAP as CR IP2-2003-06179. This licensee-identified violation was of very low safety significance because the emergency lights and plant communications systems remained operable.
2. Technical Specification Surveillance Requirement 3.3.1.1 requires that a channel check of feedwater flow instrumentation be performed every 12 hours. On June 8, 2004, control room operators discovered that this required channel check had not been performed since the implementation of Improved Standard Technical Specifications on February 27, 2001. This issue was documented in the CAP as CR IP3-2004-02047. This licensee-identified violation was of very low safety significance because all channels of feedwater flow instrumentation remained operable.



3. 10 CFR 55.46 (c)(1) requires, in part, that the simulator must demonstrate expected plant response to transient conditions. On June 25, 2004, Entergy's training staff discovered that the 32 auxiliary boiler feedwater pump steam supply line isolation valves were improperly modeled as standard valves, vice stop-check valves. This created confusing indications to operators since the simulator allowed a path for pressure from the 33 steam generator to be equalized with the 32 steam generator, but the actual plant configuration does not permit pressure equalization. The steam generator pressure is an important parameter in evaluating U-tube integrity. This issue was documented in the CAP as CR IP3-2004-02262. This licensee-identified violation was of very low safety significance because the discrepancy did not have an adverse impact on operator actions such that safety related equipment was made inoperable during normal operations or in response to a plant transient.

ATTACHMENT: SUPPLEMENTAL INFORMATION

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee personnel

C. Bergeren, In-Service Testing Engineer  
J. Boccio, Instrumentation and Controls Supervisor  
T. Burns, NEM/Respiratory Protection Supervisor  
J. Comiotes, Director, Nuclear Safety Assurance  
P. Conroy, Manager, Licensing  
S. D'Auria, Design Engineer  
F. Dacimo, Site Vice President  
R. Daley, Systems Engineer  
G. Dean, Assistant Operations Manager - Training  
R. DeCensi, Technical Support Manager  
R. Deschamps, Radiation Protection Coordinator  
R. Dolansky, In-Service Testing Engineer  
P. Donahue, Senior Environmental Specialist  
F. Gumble, Reactor Engineer  
J. Herrera, Systems Engineer  
M. Imai, Systems Engineer  
F. Inzirillo, Emergency Planning Manager  
T.R. Jones, Licensing Supervisor  
D. Gately, Assistant Radiation Protection Superintendent  
G. Hocking, Instruments and Dosimetry Supervisor  
R. LaVera, ALARA Supervisor  
D. Mayer, Unit 1 Project Manager  
R. Milici, Senior Electrical Engineer  
V. Myers, Systems Engineering Primary Systems Supervisor  
K. Naku, Unit 2 Instrumentation and Controls Assistant Superintendent  
E. O'Donnell, IP3 Assistant Operations Manager  
J. Perrotta, Quality Assurance Manager  
J. Peters, Unit 2 Plant Chemist  
S. Petrosi, Design Engineering Manager  
F. Phillips, Emergency Preparedness Staff  
P. Platt, Unit 3 Instrumentation and Controls Supervisor  
P. Rubin, Manager, Site Planning and Outage Services  
C. Schwarz, General Manager, Plant Operations  
I. Sinert, Systems Engineer  
R. Sutton, Systems Engineer  
A. Vitale, Operations Manager, IP3  
J. Ventos, Site Operations Manager  
R. Walpole, Labor Relations Response Coordinator  
C. Wend, Radiation Protection Manager

J. Zarella, Programs and Components Engineer  
W. Zolotas, Radiation Protection Technician

### **LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

#### Opened and Closed

NCV 2004-003-01	Failure to operate the safety-related 32 Central Control Room Air Conditioning Unit in accordance with station procedures.
NCV 2004-003-02	Failure to promptly identify and correct repetitive failures of the 31 Central Control Room Air Conditioning Unit.
NCV 2004-003-03	Failure to identify and correct an erroneous 34 Auxiliary Boiler Feedwater flow indicator.

### **LIST OF DOCUMENTS REVIEWED**

#### **Section 1R04: Equipment Alignment**

##### Procedures

SOP-4-004	Control Room Heating, Ventilation and Air Conditioning System, Rev. 14
COL-CVCS-1	Chemical and Volume Control System, Rev. 24
3-COL-RW-2	Service Water System, Rev. 38
COL-FW-2	Auxiliary Feedwater System, Rev. 28
SOP-FW-004	Auxiliary Feedwater System Operation, Rev. 24

##### Condition Reports

CRIP3-2004-00451  
CR IP3-2001-02283  
CR IP3-2002-04006  
CR IP3-2003-04717  
CR IP3-2001-03275

#### **Section 1R05: Fire Protection**

##### Procedures

FP-9	Control of Combustibles, Rev. 11
FP-8	Controlling of Ignition Sources, Rev. 9
Fire Pre-Plan 10	General Floor Plan-Primary Auxiliary Building, Rev. 3
Fire Pre-Plan 27	Cable Spread Room/Battery Rooms - Control Building, Rev. 3
Fire Pre-Plan 21	General Floor Plan - Fuel Storage Building, Rev. 2

Fire Pre-Plan 28      Control Room - Control Building, Rev. 2  
Fire Pre-Plan 40      Main Boiler Feed Pumps - Turbine Building, Rev. 2  
Fire Pre-Plan 29      Diesel Generators 31, 32 and 33, Rev. 4

**Section 1R11: Licensed Operator Requalification Program**

Procedures

LRQ-SES-61              Dropped Control Rod, Pressurizer Steam Space Leak, Rev. 0

**Section 1R12: Maintenance Effectiveness**

Work Orders

WO IP3-04-06456  
WO IP3-04-06528

Condition Reports

CR-IP3-2004-01796

**Section 1R13: Maintenance Risk Assessment and Emergent Work Control**

Procedures

3PT-Q028              Containment Isolation Valves PCV-1190, PCV-1191, and 1192 Pressure Relief System, Rev. 15

Work Orders

WO IP3-04-09182  
WO IP3-019098  
WO IP3-04-09128

Condition Reports

CR-IP3-2004-02263  
CR-IP3-2004-02048  
CR-IP3-2004-02063

Miscellaneous

IP3-RPT-RCS-01799              NYPA Technical Report: Indian Point 3 Containment Isolation Valve Closure Time Including Phase "A" Valves, Rev. 0

Entergy memo from Floyd Gumbe for K. Kingsley (RE-01-057), dated March 1, 2001

**Section 1R14: Operator Performance During Non-Routine Evolutions**

Procedures

3-SOP-FW-001 Main Feedwater System Operation, Rev. 35

**Section 1R15: Operability Evaluations**

Procedures

PCE-SD-03 Charcoal Filtration Monitoring, Rev. 0  
3PC-R60D Auxiliary Feedwater Flow Rate Check and Calibration (FI-1203R and FT-1203), Rev. 6

Calculations

IP3-CALC-AFW-1801 Flow/Pressure Uncertainty for AFW Pump Cut-Back Control (F-1200, F-1201, F-1202 and F-1203) Indication, Rev. 2

Condition Reports

CR-IP3-2004-01099  
CR-IP3-2004-01502  
CR-IP3-2004-01570  
CR-IP3-2004-01524  
CR-IP3-2003-04303  
CR-IP3-2003-05288  
CR-IP3-2003-05886  
CR-IP3-2004-02048  
CR-IP3-2004-02063  
CR-IP3-2004-01571  
CR-IP3-2004-01715

Operability Evaluations

OE-04-09  
OE-04-10

**Section 1R19: Post-Maintenance Testing**

Condition Reports

CR IP3-2004-01125

Procedures

OAP-44	Plant Labeling Program, Rev. 0
SOP-V-004	Control Room Heating, Ventilation and Air Conditioning System, Rev. 14
3PT-Q038B	32 Boric Acid Transfer Pump Functional Test, Rev. 13
3PT-79MC	33 EDG Functional Test, Rev. 33

Work Orders

WO IP3-02-20189  
WO IP3-03-10806  
WO IP3-04-16176  
WO IP3-04-15698

Miscellaneous

Control Room Operations Log for April 2, 2004

**Section 1R22: Surveillance Testing**

Procedures

3-PT-Q101	Main Stem Valves PCV-1310A, PCV-1310B, and PCV-1139 Stroke Test, Rev. 11
3PT-A029A	31 EDG Underground FOST Leak Test Press/Vac/UT Method, Rev. 7
3PT-M13B1	Reactor Protection Logic Channel Functional Test (Reactor Power Greater Than 35% - P8), Rev. 9
3PT-D001	Control Room Operations Surveillance Requirements, Rev. 9
3PT-Q110	Main Steam Valves PCV-1310A, PCV-1310B, and PCV-1139 Stroke Test,
3PT-M79C	33 EDG Functional Test, Rev. 33

**Section 40A1: Performance Indicator Verification**

Procedures

SOP-RCS-004	Reactor Coolant Leakage Surveillance, Rev. 22
SOP-RCS-005	Reactor Coolant Leakage Evaluation, Rev. 18

**LIST OF ACRONYMS**

ABFP	Auxiliary Boiler Feedwater Pump
CAP	Corrective Action Program
CCR	central control room
CCRAC	central control room air conditioning
CFR	Code of Federal Regulations
COL	check-off list
CR	condition report
EDG	emergency diesel generator
EOF	Emergency Operations Facility
EOP	Emergency Operating Procedure
FSAR	Final Safety Analysis Report
IMC	Inspection Manual Chapter
IP3	Indian Point 3
JNC	Joint News Center
kV	kilo volts
MFRV	Main Feedwater Regulating Valve
NCV	Non-cited Violation
NRC	Nuclear Regulatory Commission
ONOP	off-normal operating procedure
OSC	Operations Support Center
PFP	Pre-Fire Plan
PI	performance indicator
PWT	post-work test
RHR	residual heat removal
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SOP	system operating procedure
TS	Technical Specifications
TSC	Technical Support Center
WO	Work Order