

December 28, 1999

Mr. Harold W. Keiser  
President and Chief Nuclear Officer  
PSEG Nuclear LLC  
Post Office Box 236  
Hancocks Bridge, NJ 08038

SUBJECT: NRC INTEGRATED INSPECTION REPORT 05000354/99007

Dear Mr. Keiser:

On November 28, 1999, the NRC completed an inspection of your Hope Creek facility. The enclosed report presents the results of that inspection. The preliminary findings were presented to PSEG Nuclear management led by Mr. Mark Bezilla in an exit meeting on December 8, 1999.

NRC inspectors examined numerous activities as they related to reactor safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspection consisted of selective review of procedures and representative records, observations of activities, and interviews with personnel. Specifically, this inspection involved seven weeks of resident inspection, and three region-based inspections of radioactive effluent controls, radioactive material shipping, and emergency preparedness. Findings were assessed using the significance determination process; all findings were determined to be Green (very low safety significance).

NRC determined that two violations of NRC requirements existed, involving the design basis of set points in a test procedure and verifications of primary containment integrity. These violations are being treated as non-cited violations (NCVs), consistent with the Interim Enforcement Policy for pilot plants. The NCVs are described in the enclosed inspection report.

In accordance with 10 CFR 2.790 of the NRC's Rules of Practice, a copy of this letter and its enclosures will be placed in the NRC Public Document Room (PDR).

Sincerely,

ORIGINAL SIGNED BY:

Glenn W. Meyer, Chief  
Projects Branch 3  
Division of Reactor Projects

Docket No. 50-354  
License No. NPF-57

Mr. Howard W. Keiser

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Enclosure: Inspection Report 05000354/99007

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No: 05000354  
License No: NPF-57

Report No: 05000354/99007

Licensee: PSEG Nuclear LLC

Facility: Hope Creek Nuclear Generating Station

Location: P.O. Box 236  
Hancocks Bridge, NJ 08038

Dates: October 11 - November 28, 1999

Inspectors: J. G. Schoppy, Jr. Senior Resident Inspector  
J. D. Orr, Resident Inspector  
J. T. Furia, Senior Radiation Specialist  
J. C. Jang, Senior Radiation Specialist  
N. T. McNamara, Emergency Preparedness Specialist

Approved By: Glenn W. Meyer, Chief,  
Projects Branch 3  
Division of Reactor Projects

## EXECUTIVE SUMMARY

### Hope Creek Generating Station NRC Integrated Inspection Report 05000354/99007

The report covers a seven-week period of resident inspection and three region-based inspections using the guidance contained in NRC Inspection Manual Chapter 2515\*. The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process in draft Inspection Manual Chapter 0609 (see Attachment 1).

#### **Cornerstone: Barrier Integrity**

- ! Green. NRC inspectors identified inadequate acceptance criteria for the closing time for the inboard main steam line isolation valves (MSIVs). PSEG had performed a design change and lowered the primary containment instrument gas compressor start set point. The design change calculated a more restrictive MSIV closing time during test conditions to ensure that the MSIVs would close within technical specification (TS) requirements. However, the stroke time test acceptance criteria was not updated. The safety significance of this issue was low because the actual closing times were within the new calculated value. This issue was a non-cited violation. (Section 1R22)
- ! Green. Operators identified that they had failed to adequately perform primary containment integrity verifications for 11 valves during several monthly verifications within the last year. The NRC staff determined that this deficiency had low safety significance based on the valves being closed when properly verified later and other administrative systems confirming the valves= closed positions during the period of improper verifications. This was a non-cited violation of TS 4.6.1.1.b. (Section 4OA4.4)

#### **Performance Indicator Verification**

- ! The inspectors identified two errors in the reported data for the *Reactor Coolant System Specific Activity* PI. PSEG reported the maximum activity for July 1999 conservatively high due to a data acquisition error. In addition, PSEG used an incorrect value for the TS limit in calculating the PI. PSEG documented these errors in their corrective action process and corrected the TS limit error in their October 1999 PI package submittal. The errors were not significant and the PI remained green.
- ! PSEG submitted accurate data for the PIs on *Reactor Coolant System Leakage, Drill/Exercise Performance, Emergency Response Organization Drill Participation, Alert and Notification System Reliability, Radiological Effluent Occurrence, and Exposure Control Effectiveness* based on a verification of the submitted data.

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## **Report Details**

### Summary of Plant Status

Operators maintained Hope Creek at or near power for the duration of the inspection period.

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

(Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity)

##### 1R03 Emergent Work

###### 1. Inspection Scope

The inspectors reviewed PSEG's corrective actions and risk management controls associated with a main transformer trouble alarm, a reactor manual control system lock-up condition, and a C service water pump backwash valve deficiency.

###### 2. Observations and Findings

There were no findings identified.

##### 1R04 Equipment Alignments

###### a. Inspection Scope

The inspectors performed partial redundant equipment alignment verifications during system outages on the C emergency diesel generator, the reactor core isolation cooling (RCIC) system, and the D station service water pump.

###### b. Observations and Findings

There were no findings identified.

##### 1R05 Fire Protection

###### 1. Inspection Scope

The inspectors performed a walkdown of the high pressure coolant injection (HPCI) pump room, the RCIC pump room, the core spray pump rooms and residual heat removal (RHR) pump rooms. The inspectors also reviewed fire impairments and compensatory measures associated with these rooms.

2. Observations and Findings

There were no findings identified.

**1R09 Inservice Testing****a. Inspection Scope**

The inspectors observed, reviewed the results of, and verified the adequacy of the A standby liquid control pump, B station service water pump, and the B diesel fuel oil storage tank transfer pump inservice tests.

**b. Observations and Findings**

There were no findings identified.

**1R12 Maintenance Rule Implementation****a. Inspection Scope**

The inspectors reviewed maintenance rule implementation for six potentially risk significant equipment failures or problems: Notification 20004961/B core spray test return valve failure, Notifications 20004207, 20004430 & 20004441/main steam system problems, Notification 20004525/low 125Vdc battery cell voltages, and Notification 20013230/reactor manual control system failures.

**b. Observations and Findings**

There were no findings identified.

**1R13 Maintenance Work Prioritization****a. Inspection Scope**

The inspectors evaluated PSEG's on-line risk management for the C emergency diesel generator outage and a RCIC system outage.

**b. Observations and Findings**

There were no findings identified.

**1R15 Operability Evaluations**

a. Inspection Scope

The inspectors reviewed three operability determinations during this period which impacted mitigating systems or could have potentially complicated an initiating event. The operability evaluations involved safety auxiliary cooling system leaks, high Non-ASME vibrations on the D station service water pump and the No. 6 combined intermediate valve failure to stroke.

b. Observations and Findings

There were no findings identified.

1R16 Operator Work-Arounds

a. Inspection Scope

The inspectors reviewed the operator work around list and other equipment deficiencies to evaluate potential impacts on the operators' ability to implement abnormal or emergency operating procedures.

b. Observations and Findings

There were no findings identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed the results and adequacy of post maintenance tests associated with the D station service water pump and strainer outage and the safety and turbine auxiliary cooling system fast action isolation valve, 2522B, solenoid replacement.

b. Observations and Findings

There were no findings identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed portions of, and reviewed the adequacy of, surveillance tests associated with drywell temperature monitoring, the B primary containment instrument gas pressure switches, and the RCIC system motor control center starters.

b Observations and Findings

The primary containment instrument gas (PCIG) compressors, controlled by a pressure switch, cycle on and off to maintain receiver pressure between 94 and 106 psig. The PCIG system supports operation of the gas operated inboard main steam isolation valves (MSIVs), as well as other gas operated valves in the drywell. The inboard MSIVs are the most limiting component for the PCIG compressor start setpoint and receiver pressure.

The inspectors verified that PSEG is adequately maintaining the calibration of the PCIG compressor start setpoint. However, the inspectors reviewed supporting design calculations, *MSIV Performance After A Postulated Pipe Break/H-1-AB-MDC-1312*, and identified that PSEG had not incorporated all requirements from the calculation conclusions. One conclusion noted that the inboard MSIVs must be stroke time tested at less than 4.85 seconds to ensure that the inboard MSIVs would close within 5 seconds as required by technical specification 3.4.7 and used in the Updated Final Safety Analysis Report accident analysis. Closing times during an accident would be different than that measured during a test because of changes in containment pressure. The inspectors reviewed Hope Creek procedure, *MSIV Loss of Power - Cold Shutdown - Inservice Test*, and identified that the MSIV closing test acceptance criteria was 3 to 5 seconds. PSEG's failure to include the more restrictive 4.85 seconds is a violation of 10CFR50 Appendix B Criterion III, *Design Control*. The inspectors verified that all the inboard MSIVs now and since November 1997, had actual closing times below 4.85 seconds.

PSEG initiated corrective action Notification 20014324 for the design control problems. PSEG also intended to evaluate the appropriateness of technical specification 3.4.7 as part of Notification 20014324. Because this inspection finding involved the containment barrier cornerstone, an NRC Senior Reactor Analyst (SRA) was consulted. The NRC risk analyst considered that there was low safety significance to this finding since the inboard MSIVs had actual closing times below 4.85 seconds; thus this finding is considered Green. This violation of 10CFR50 Appendix B Criterion III, *Design Control*, is being treated as a non-cited violation, consistent with the Interim Enforcement Policy for pilot plants. **(NCV 50-354/99-07-01)**

Cornerstone: Emergency Preparedness [EP]

1EP1 Drill, Exercise, and Actual Events

a. Inspection Scope

The inspectors reviewed emergency preparedness (EP) drill and exercise reports and critique forms to determine if PSEG personnel accurately identified and captured issues in their corrective action program (CAP). Also, a review was conducted of PSEG corrective actions related to emergency declarations at Hope Creek and Salem that have occurred since December 1998.

b. Observations and Findings

There were no findings identified, but the inspectors had the following observations.

In Salem Inspection Report 050000272/990009 & 050000311/990009, the inspectors identified a White finding regarding ineffective corrective actions for untimely emergency declarations. Based on review of Hope Creek events and exercises, the inspectors concluded that although emergency declaration problems may exist at Hope Creek (based

on an incorrectly classified General Emergency during an emergency preparedness exercise on June 16, 1999), there was no evidence of similar declaration timeliness concerns or an uncorrected EP performance problems. For example, PSEG properly and promptly classified an Unusual Event at Hope Creek on September 29, 1999. Nonetheless, based on the common emergency preparedness program between Salem and Hope Creek, the corrective actions determined by PSEG based on Salem evaluations should be evaluated for application at Hope Creek.

In addition, the inspectors noted disparities regarding how EP problems were characterized at various levels with PSEG. For example, the corrective action system contained exercise findings and areas of improvements from the past two years. The inspectors found the deficiency list to be comprehensive and the player critique forms to be self-critical. The EP department staff gathered exercise comments and documented the findings in a comprehensive exercise report for internal (EP staff) review.

However, these PSEG findings were characterized differently in separate reports to senior management providing short synopses of their overall conclusions issued within five days of exercises. When the inspectors compared conclusions and issues described in the two reports, the finding characterizations did not always coincide. For example, there were repetitive critical player comments in several exercises with respect to issuing press releases without management approval because the emergency operations facility was not always responsive in a timely manner. (Not having management's approval of the facts in a press release can lead to misinformation being given to the public.) The controller's conclusions were rolled up to be some communication problems in the Emergency News Center (ENC). The report to management stated that the ENC operated effectively and no issues were noted. Another example was that the final reports noted performance problems associated with making emergency classifications. This was not reflected in the report to senior management. The inspectors determined the reports did not afford senior management the opportunity to adequately assess the emergency response program and any possible decline in emergency response organization performance.

The EP Manager stated that the purpose of the management report was to provide conclusions in a timely manner, but realized that this was based on preliminary information. However, EP had not reissued any report to management if conclusions changed.

The inspectors also noted that some of the critical comments by players on the respective critique forms did not coincide with the controller's report that was used for input into the CAP. PSEG stated that some of the significant players' comments may not have been documented because they may have been immediately addressed. However, there was no mechanism for the inspectors to determine if PSEG was entering all significant exercise findings in their CAP and if corrective actions were effective.

PSEG planned to review this area of concern and the process by which they document immediately resolved issues in their problem identification and resolution system.

### 1EP2 Alert and Notification System Testing

#### a. Inspection Scope

The inspector evaluated the design of the offsite siren testing system and reviewed test records to determine compliance with 10 CFR 50.47(b)(5). Also, PI&R issues were reviewed to determine the adequacy of PSEG in identifying and tracking siren related problems.

#### b. Observations and Findings

There were no findings identified.

### 1EP3 Emergency Response Organization Augmentation

#### a. Inspection Scope

The inspector reviewed (ERO) augmentation to determine PSEG-s ability to achieve facility activation goals and identify any problems related to the effectiveness of ERO augmentation.

#### b. Observations and Findings

There were no findings identified.

### 1EP4 Emergency Action Level Revisions

#### a. Inspection Scope

The inspector reviewed any changes to PSEG-s emergency action level (EAL) scheme since 1998 to determine that the changes did not decrease the effectiveness of the Emergency Plan.

#### b. Observations and Findings

There were no findings identified.

## **2. RADIATION SAFETY**

Cornerstone: Public Radiation Safety [PS]

### 2PS1 Gaseous and Liquid Effluent

#### a. Inspection Scope



The inspection of the liquid and gaseous effluents control program included walkdowns of the liquid and gaseous treatment and release systems, and reviews of the following:

- ! Radiological Effluent Release Report for 1998, and effluent release permits for 1999, together with a comparison of projected doses from effluents, using the NRC's PC Dose computer code;
- ! Calibration, functional testing and maintenance records for the liquid and gaseous effluent monitoring systems (liquid radwaste discharge line monitor and flow rate monitor; cooling tower blowdown effluent monitor and blowdown weir; south plant vent stack and flow measurement device; north plant vent stack and flow measurement device; filtration, recirculation and ventilation system (FRVS) noble gas monitor; and control room vent);
- ! Ventilation system surveillance tests, including filter performance verifications (FRVS; control room emergency filtration; offgas exhaust; and Reactor Building exhaust);
- ! Calibration records for count room instruments utilized in the radiological effluents program; and
- ! Performance indicators, self-assessments and audits of the radiological effluents technical specification (RETS) program.

b. Observations and Findings

There were no findings identified.

2PS2 Radioactive Material Shipping

a. Inspection Scope

1. Systems review (i.e., description, control panel review & facilities tour) of:
  - 1) Reactor water clean-up
  - 2) Spent fuel pool clean-up
  - 3) Floor drain
  - 4) Equipment drain
  - 5) Miscellaneous waste
  - 6) Solid waste processing
2. Abandoned liquid and solid waste processing components/systems (method of lay-up, walkdowns, UFSAR review)
3. Interim radwaste storage (walkdown, records)
4. Process Control Program (PCP)

- a) PCP procedures
  - b) Process documentation
  - c) Scaling factors (derivation, sampling type, sampling frequency)
5. Solid radwaste shipping records review
6. Assurance of Quality
- a) Quality Assurance audits (1998-1999), including most recent PCP audit
  - b) Quality surveillances
  - c) Departmental self-assessments (radiation protection, chemistry, operations)
7. Training
- a) NRC IE Bulletin 79-19
  - b) DOT 49 CFR, Subpart H

b. Observations and Findings

There were no findings identified.

**4. OTHER ACTIVITIES (OA)**

4OA2 Performance Indicator Verification

.1 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors verified the accuracy of and methods used to calculate the PI on *Reactor Coolant System (RCS) Specific Activity* and reviewed the PI data submitted for the months of July, August, and September 1999.

b. Observations and Findings

The inspectors determined that the maximum activity reported was consistent with chemistry sample analyses as recorded in the chemistry data management (CDM) system, with one minor exception. The specific activity reported for July 1999 was 5.10E-5 (microcuries per gram); however, the maximum recorded value in the CDM was 2.97E-5. Chemistry determined that the error occurred when raw data from the counting room printouts was used instead of validated CDM data. Chemistry determined that the correct value was 2.97E-5. This error was conservative and did not change the indicator. PSEG initiated Notification 20014867 to address the discrepancy in PI data acquisition.

In addition, the inspectors noted an error in the listed value for the technical specification (TS) limit. Hope Creek TS 3.4.5 specifies a maximum activity of 0.2 microcuries per gram dose equivalent I-131, whereas PSEG listed a TS limit of 1.0 microcuries per gram dose

equivalent I-131. This error resulted in an actual indicated value five times higher than previously calculated. In this case, due to the relatively low RCS specific activity (~4.0E-5 microcuries per gram), the resultant actual indicated value (maximum activity/TS limit) remained unchanged (0.0 percent) and the PI remained green. PSEG corrected the TS limit error in their October 1999 PI package submittal and initiated Notification 20014867 to address the inaccurate July 1999 data.

Because the errors were not significant in that no change in the NRC's action would have resulted from this data and the errors were not willful, this is a minor violation and not subject to formal enforcement action.

.2 Reactor Coolant System Leakage

a. Inspection Scope

The inspector verified the accuracy of and methods used to calculate the PI on *Reactor Coolant System Leakage* and reviewed the PI data submitted for the months of August, September, and October 1999.

b. Observations and Findings

There were no findings identified.

.3 Drill/Exercise Performance, Emergency Response Organization Drill Participation, Alert and Notification System Reliability

a. Inspection Scope

The inspector reviewed PSEG's programs for gathering and submitting data for the PIs on *Drill/Exercise Performance, ERO Drill Participation, and Alert and Notification System Reliability*. The inspector reviewed PSEG's exercise/drill reports, tracking and trending reports, self-assessment reports, and emergency preparedness event reports for the PI data submitted from the 4th quarter of 1998 through the 3rd quarter of 1999.

b. Observations and Findings

There were no findings identified.

.4 Effluent Releases

a. Inspection Scope

The inspector reviewed PI data submitted by PSEG for the PI on *Radiological Effluent Occurrence* and sampled records from January 1, 1998 through September 30, 1999.

b. Observations and Findings

There were no findings identified.

.5 Occupational Radiation Safety

a. Inspection Scope

The inspector reviewed PI data submitted by PSEG for *Occupational Exposure Control Effectiveness* and sampled records from January 1, 1998 through July 15, 1999, for occurrences of unanticipated and unintended doses exceeding an established percentage of regulatory limits or non-compliances with the access requirements established to prevent unauthorized entry into those areas having dose rates exceeding 1000 millirem per hour.

b. Observations and Findings

There were no findings identified.

40A3 Event Follow-up

- .1 (Open/Closed) LER 354/99-009-00: License condition violation - minimum feedwater temperature limits. The issue involving this LER was described in NRC Inspection Report 50-354/99-05, Section 1R14. The inspectors determined that this LER was complete and accurate. This LER was closed.
- .2 (Open/Closed) LER 354/99-008-00: License condition violation - fire protection program. The issue involving this LER was described in NRC Inspection Report 50-354/99-05 Section 1R05. The inspectors determined that this LER was complete and accurate. This LER was closed.
- .3 (Open/Closed) LER 354/99-011-00: Unplanned inoperability of the high pressure coolant injection (HPCI) system due to a failed trip unit. This issue involved an equipment failure that rendered the HPCI system inoperable for about nine hours. The inspectors verified that there were no performance problems and that PSEG captured the unavailability time in the *Safety System Unavailability, High Pressure Injection System* PI. This LER is closed.
- .4 (Open/Closed) LER 354/99-012-00: Inadequate performance of primary containment integrity verification. Operators identified that containment isolation valve position verification was not performed properly for 11 valves during several monthly verifications conducted in the previous year. Operators initiated Notification No. 20009755 to evaluate the condition. PSEG determined that an inadequate revision to their primary containment integrity verification procedure caused the event. During a subsequent verification, operators confirmed that the associated valves were in the correct position. In addition, operators noted that previous tests had verified the position status of these valves via their tagging request inquiry system database. Because this inspection finding involved the containment barrier cornerstone, an NRC risk analyst was consulted. The NRC risk analyst determined that this deficiency had low safety significance and characterized the

issue as a Green finding. The operators' failure to adequately perform containment isolation valve position verifications is a violation of TS 4.6.1.1.b. This violation is being treated as a non-cited violation, consistent with the Interim Enforcement Policy for pilot plants. This violation is in the corrective action program as Notification 20009755. **(NCV 50-354/99-07-02)**

- .5 (Closed) IFI 354/98-80-03: This issue involved a lack of manufacturer's recommended preventive maintenance or alternate planned maintenance for class 1E battery room ventilation in-duct heaters. This problem screened Green in Phase 1 of the significance determination process. The inspectors verified that PSEG intended corrective actions as documented in Notification TS981026149. This IFI was closed.
- .6 (Closed) IFI 354/98-09-01: PSEG performed a test discharge of the automatic CO2 fire suppression system in the EDG rooms in September 1997. The test discharge was performed as a post maintenance test following a design change. The test demonstrated that the CO2 fire suppression change was inoperable because the room doors blew open from the pressurization. This IFI was discussed in NRC Inspection Reports 50-354/97-07 and 50-354/98-09. The inspectors verified that PSEG resolution of this problem was addressed by corrective action program Notification CR970916281. The inspectors also verified that fire protection compensatory measures remained in effect for the EDG rooms. This IFI was closed.

#### 4OA5 Management Meetings

##### Exit Meeting Summary

On December 8, 1999, the inspectors presented their overall findings to members of PSEG Nuclear management led by Mr. Mark Bezilla. PSEG Nuclear management acknowledged the findings presented and did not contest any of the inspectors' conclusions. Additionally, they stated that none of the information reviewed by the inspectors was considered proprietary.

During the exit, the two non-cited violations were discussed. The inspectors informed PSEG management that should they elect to contest these NCVs, that a response should be provided within 30 days of the date of this inspection report, with the basis for their denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Hope Creek facility.

PSEG management noted that they were aware of the process to contest NCVs and had contested an NCV at Salem in a letter dated October 28, 1999.

## ITEMS OPENED AND CLOSED

### Opened/Closed

50-354/99-07-01	NCV	Inadequate closing time acceptance criteria for the inboard main steam line isolation valves. (Section 1R22)
50-354/99-07-02	NCV	Inadequate performance of primary containment integrity verification. (Section 4OA4.4)
50-354/99-009-00	LER	License condition violation - minimum feedwater temperature limits. (Section 4OA4.1)
50-354/99-008-00	LER	License condition violation - fire protection program. (Section 4OA4.2)
50-354/99-011-00	LER	Unplanned inoperability of the high pressure coolant injection system due to a failed trip unit. (Section 4OA4.3)
50-354/99-012-00	LER	Inadequate performance of primary containment integrity verification. (Section 4OA4.4)

### Closed

50-354/98-80-03	IFI	Lack of manufacturer-s recommended preventative maintenance or alternate planned maintenance for class 1E battery room ventilation in-duct heaters. (Section 4OA4.5)
50-354/98-09-01	IFI	Test discharge of the automatic CO2 fire suppression system in the EDG rooms in September 1997. (Section 4OA4.6)

**LIST OF ACRONYMS USED**

CDM	Chemistry Data Management
CFR	Code of Federal Regulations
EAL	Emergency Action Level
ENC	Emergency News Center
EP	Emergency Preparedness
ERO	Emergency Response Organization
FRVS	Filtration, Recirculation and Ventilation
HPCI	High Pressure Coolant Injection
LER	Licensee Event Report
MSIVs	Main Steam Isolation Valves
NCVs	Non-Cited Violations
NRC	Nuclear Regulatory Commission
PCIG	Primary Containment Instrument Gas
PCP	Process Control Program
PDR	Public Document Room
PI	Performance Indicator
PI&R	Performance Identification and Resolution
PSEG	Public Service Electric Gas
RCS	Reactor Coolant System
RETS	Radiological Effluents Technical Specification
SDP	Significant Determination Process
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
VIO	Violation



## ATTACHMENT 1

### NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

<b>Reactor Safety</b>	<b>Radiation Safety</b>	<b>Safeguards</b>
! Initiating Events	! Occupational	! Physical Protection
! Mitigating Systems	! Public	
! Barrier Integrity		
! Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues with low to moderate safety significance, which may require additional NRC inspections. YELLOW findings are more serious issues with substantial safety significance and would require the NRC to take additional actions. RED findings represent issues with high safety significance with an unacceptable loss of safety margin and would result in the NRC taking significant actions that could include ordering the plant shut down.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. The color for an indicator corresponds to levels of performance that may result in increased NRC oversight (WHITE), performance that results in definitive, required action by the NRC (YELLOW), and performance that is unacceptable but still provides adequate protection to public health and safety (RED). GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, as described in the matrix. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings.