March 20, 2000

EA 99-325

Mr. Michael J. Colomb
Site Executive Officer
New York Power Authority
James A. FitzPatrick Nuclear Power Plant
Post Office Box 41
Lycoming, New York 13093

SUBJECT: NRC INTEGRATED INSPECTION REPORT 05000333/2000001 AND FINAL SIGNIFICANCE DETERMINATION ON A WHITE FINDING

Dear Mr. Colomb:

On February 19, 2000, the NRC completed an inspection at the James A. FitzPatrick Nuclear Power Plant. The results of this inspection were discussed on March 2, 2000, with Mr. D. Lindsey and other members of your staff. The enclosed report presents the results of that inspection.

This 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.

This report provides the final significance determination for the high pressure coolant injection (HPCI) system issue previously described in NRC Inspection Report 05000333/1999009. At your request, a regulatory conference was conducted with members of your staff on February 7, 2000, to discuss your views on the significance determination and proposed apparent violation. A copy of the handout you provided at this meeting is attached.

During the regulatory conference you addressed two main issues for NRC consideration. First, that the characterization of the HPCI overspeed event as having White (low to moderate safety significance) was not appropriate, because you believed that had a valid HPCI initiation signal existed, HPCI would have injected without an overspeed trip. Secondly, you believed that the apparent violation, as written in NRC IR 05000333/1999009, was not appropriate because the testing cited in the apparent violation was not required for determining HPCI operability.

The significance determination of the HPCI event was reevaluated and the NRC concluded that the issue had been appropriately characterized as White. The NRC concluded that the assumptions and uncertainties contained in your evaluation of the event did not provide adequate justification for a reduced safety significance. The details of this evaluation are provided in this report. In the Mid-Cycle Performance Review dated January 3, 2000, we previously noted our plan to address this White finding and the associated corrective actions as part of a supplemental inspection under Inspection Procedure 95001, which we have planned for April 4, 2000. Finalizing the White significance determination has not altered that plan.

The NRC agreed with your position that the apparent violation was incorrect. Based on new information reviewed, we have concluded that the apparent violation proposed in NRC IR 05000333/1999009 regarding inadequate test control of the HPCI system did not in fact exist. However, we have concluded that NYPA failed to identify and correct problems with the HPCI governor control system. Specifically, NYPA failed to properly set the HPCI system hydraulic oil operating pressure. The improper oil operating pressure resulted in abnormalities in HPCI governor control system performance and could have resulted in an overspeed trip during a system injection. In addition, HPCI system performance monitoring was ineffective as evidenced by the failure of NYPA to identify the problems with hydraulic oil pressure, spring tension and general degradation of the system. These failures to identify and correct conditions adverse to quality associated with the HPCI system are cited in the attached Notice of Violation and the circumstances surrounding it are described in detail in this report.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

The inspectors identified one violation of NRC requirements related to timely corrective actions for a residual heat removal service water system strainer. This finding was evaluated using the applicable SDP and was determined to be Green (very low safety significance). This violation is being treated as a non-cited violation (NCV), consistent with the interim Enforcement Policy for pilot plants. This NCV is described in the inspection report and has been entered into your corrective action program.

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. Should you have any questions regarding this report, please contact Mr. Glenn Meyer at 610-337-5211.

Sincerely,

/RA/

Richard V. Crlenjak, Deputy Director
Division of Reactor Projects

Docket No. 05000333
License No. DPR-59

Enclosures:
1. Notice of Violation
2. Inspection Report 05000333/2000001

cc w/encls:
C. D. Rappleyea, Chairman and Chief Executive Officer
E. Zeltmann, President and Chief Operating Officer
R. Hiney, Executive Vice President for Project Operations
J. Knubel, Chief Nuclear Officer and Senior Vice President
H. P. Salmon, Jr., Vice President of Engineering
W. Josiger, Vice President - Special Activities
J. Kelly, Director - Regulatory Affairs and Special Projects
T. Dougherty, Vice President - Nuclear Engineering
R. Deasy, Vice President - Appraisal and Compliance Services
R. Patch, Director - Quality Assurance
G. C. Goldstein, Assistant General Counsel
C. D. Faison, Director, Nuclear Licensing, NYPA
G. Tasick, Licensing Manager
T. Morra, Executive Chair, Four County Nuclear Safety Committee
Supervisor, Town of Scriba
C. Donaldson, Esquire, Assistant Attorney General, New York Department of Law
P. Eddy, Electric Division, Department of Public Service, State of New York
G. T. Goering, Consultant, NYPA
J. E. Gagliardo, Consultant, NYPA
E. S. Beckjord, Consultant, NYPA
F. William Valentino, President, New York State Energy Research
and Development Authority
J. Spath, Program Director, New York State Energy Research and Development Authority
T. Judson, Syracuse Peace Council
F. Elmer, Sierra Club
S. Penn
B. Brown
S. Griffin, Chenango North Energy Awareness Group
T. Ellis
A. Slater, GRACE
C. Gagne
L. Downing
H. Hawkins, Syracuse Green Party
E. Smeloff, PACE Energy Project
C. Hehl, Incorporated
C. Terry
R. Toole
R. Schwarz

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Nuclear Safety Information Center (NSIC)
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NRC Resident Inspector
Region I Docket Room (with concurrences)
G. Meyer, DRP
R. Barkley, DRP
S. Barr, DRP
B. Platchek, DRP
R. Borchardt, OE (2)

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ENCLOSURE 1

NOTICE OF VIOLATION

New York Power Authority
James A. FitzPatrick Nuclear Power Plant

Docket No. 50-333
License No. DPR-59
EA No. 99-325

During NRC inspections conducted from October 18, 1999 to February 19, 2000, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG 1600, the violation is listed below:

10CFR50, Appendix B, Criteria XVI, “Corrective Action,” requires that measures shall be established to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Technical Specification 3.5.C requires that “the High Pressure Coolant Injection (HPCI) system shall be operable whenever the reactor pressure is greater than 150 psig...From and after the date that the HPCI system is made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding 7 days unless such system is sooner made operable...”

Contrary to the above, between May 1997 and February 5, 2000, NYPA failed to promptly identify and correct a condition adverse to quality involving speed control of the HPCI system turbine. Specifically, NYPA failed to identify and promptly correct problems with hydraulic oil pressure, spring tension, and general degradation of the HPCI governor control as evidenced by the following:

- Between May 1997 and February 2000 several changes were made to the HPCI hydraulic oil operating pressure; however, NYPA did not identify the proper operating pressure as specified in industry information. The hydraulic oil pressure was set improperly high, which caused speed transients to occur at normal operating reactor pressure. This condition was not identified and corrected until February 5, 2000.

- On February 4, 2000, NYPA identified that the governor lever spring tension deviated from the plant drawings. However, this deviation was not considered when the hydraulic oil pressure was corrected on February 5, 2000. With the governor lever spring tension out of specification, there was no assurance, although the hydraulic oil pressure was set in accordance with industry information, that the control valves would function properly to control turbine speed.

- Prior to October 14, 1999, HPCI system performance monitoring was ineffective as evidenced by the failure of NYPA to identify the problems with the hydraulic oil pressure, and general degradation of the system and components.

These problems resulted in abnormalities in HPCI governor control system performance that resulted in an overspeed trip during the startup of the system on October 14, 1999, and could have resulted in an overspeed trip when the system was called upon to perform

its intended function. As a result, the HPCI system was inoperable, contrary to Technical Specification 3.5.C, for a period greater than seven (7) days.

Pursuant to the provisions of 10 CFR 2.201, the New York Power Authority is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555 with a copy to the Regional Administrator, Region I, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or significance determination, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be placed in the NRC Public Document Room (PDR), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.790(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 20th day of March, 2000

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	05000333
License No.:	DPR-59
Report No.:	2000001
Licensee:	New York Power Authority (NYPA)
Facility:	James A. FitzPatrick Nuclear Power Plant
Location:	Post Office Box 41 Scriba, New York 13093
Dates:	January 9, 2000, to February 19, 2000
Inspectors:	R. A. Rasmussen, Senior Resident Inspector R. A. Skokowski, Resident Inspector
Approved by:	G. W. Meyer, Chief Projects Branch 3 Division of Reactor Projects

SUMMARY OF FINDINGS

James A. FitzPatrick Nuclear Power Plant
NRC Inspection Report 05000333/200001

The report covered a six-week period of resident inspection. The significance of issues is indicated by their color (GREEN, WHITE, YELLOW, RED) and was determined by the Significance Determination Process (SDP) in draft Inspection Manual Chapter 0609 (see Attachment 1).

Mitigating Systems

! **WHITE.** As demonstrated during the post-scram HPCI (high pressure coolant injection) system initiation on October 14, 1999, problems existed within the HPCI governor controls that degraded HPCI performance. An improper oil operating pressure resulted in abnormalities in HPCI governor control system performance, which adversely affected HPCI performance during this event and could have resulted in an overspeed trip during a system injection. This issue was determined to be White (low to moderate safety significance) because HPCI is an important mitigating system during a loss of offsite power event and was susceptible to an overspeed trip for a period greater than 30 days.

NYPA had missed several opportunities to properly set the system hydraulic oil operating pressure. In addition, HPCI system performance monitoring was ineffective as evidenced by the failure of NYPA to identify the problems with the electronic speed limiter, hydraulic oil pressure, spring tension and general degradation of the system and components. The inspectors concluded that this ineffective corrective action represented a violation. Also, based on new information reviewed, the inspectors concluded that the apparent violation issued in NRC Inspection Report 05000333/1999009 regarding inadequate test control of the high pressure coolant injection (HPCI) system was incorrect. (Final Significance Determination)

! **GREEN.** The inspectors identified untimely corrective actions for a strainer with a high differential pressure in the residual heat removal service water system. An inappropriate priority was assigned, which resulted in a delay for approximately three and one half months. This issue was considered to Green (very low safety significance) using the significance determination process (SDP) phase 1 evaluation, because the system was still capable of performing the safety function using the second strainer. The failure to promptly correct this condition was determined to be a non-cited violation. (Section 1R13)

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Report Details

SUMMARY OF PLANT STATUS

During the inspection period the plant was at full power, except for multiple temporary power reductions to address condenser tube leaks and cleaning. Also, on February 19, a planned down power to 80 percent was conducted for repairs of steam leaks in the turbine building.

FINAL SIGNIFICANCE DETERMINATION

White Finding Regarding Inadequate Testing of the High Pressure Coolant Injection (HPCI) System. (AV 05000333/1999009-01, EA-325)

Overview

Based on the new information reviewed, the inspectors concluded that the safety significance of this finding merited its White determination, but that the apparent violation proposed in NRC IR 05000333/1999009 regarding inadequate test control of the HPCI system was inappropriate. Nonetheless, the inspectors concluded that NYPA's failure to identify and correct problems with the HPCI governor control system was a violation of the 10 CFR Part 50 Appendix B, Criterion XVI, "Corrective Action," in that NYPA missed several opportunities to properly set the system hydraulic oil operating pressure. The improper oil operating pressure resulted in abnormalities in HPCI governor control system performance and could have resulted in an overspeed trip during system injection. In addition, HPCI system performance monitoring was ineffective as evidenced by the failure of NYPA to identify the problems with the electronic speed limiter, hydraulic oil pressure, spring tension and general degradation of the system.

Background

On October 14, 1999, FitzPatrick scrammed due to a turbine trip caused by a failure in the generator protection circuit. During the ensuing transient, the HPCI system received a signal to start due to low-low reactor water level. However, due to swell and feedwater injection, water level was restored prior to HPCI injecting. The HPCI turbine tripped during the transient. Initially, NYPA concluded that the HPCI turbine tripped, as designed, on high reactor vessel water level. Approximately five days later they determined that the HPCI system had experienced an overpressure condition during the time it was running, and that the HPCI turbine had tripped on mechanical overspeed before the high reactor vessel water level occurred. The details of this event were provided in NRC IR 05000333/1999009.

In response to the October 14, 1999, event, NYPA increased the frequency of HPCI testing, such that instrumented test starts were being performed monthly. Following the January 31, 2000, test, NYPA identified that HPCI experienced a speed transient similar to the ones experienced in October 1999. Although, the transient was not large enough to cause an overspeed trip of HPCI, NYPA declared the system inoperable in order to investigate the cause.

NYPA concluded that the governor control system hydraulic oil operating pressure was being set improperly high following subsequent troubleshooting. The hydraulic oil controls the opening of the HPCI turbine control valves (CVs). The higher oil pressure had allowed CV5 to open unexpectedly at normal operating pressures. This control valve is the largest of the HPCI CVs and was designed to admit additional steam to the turbine during low pressure operations. Therefore, the unexpected opening of CV5 at normal operating pressure had caused the speed transients to occur. After properly adjusting the oil pressure, NYPA successfully tested HPCI and declared the system operable on February 5, 2000.

Capability of HPCI to Perform the Intended Safety Function

During the regulatory conference, held on February 7, 2000, NYPA stated that the initiation of HPCI on October 14, 1999, was not a valid HPCI initiation because the low water level signal cleared prior to HPCI injecting. Moreover, NYPA indicated that had a valid signal existed, they believed that HPCI would have injected without an overspeed trip.

NYPA evaluated whether HPCI would have injected during the October 14, 1999, event had a real injection condition existed and determined that it would have injected. The October 14 overspeed trip occurred while HPCI was running unloaded because the reactor low level signal cleared prior to the discharge valve opening. NYPA concluded that because the peak speed of a loaded pump would be lower than that of an unloaded pump, HPCI would not have tripped on October 14 had a valid injection signal existed. The results of NYPA's evaluation concluded that the peak speed during the October 14th transient would have been approximately 1.0% lower than the overspeed trip setpoint.

The inspectors concluded that there was sufficient uncertainty in the assumptions to invalidate this conclusion. With respect to HPCI system operability, the inspectors considered the analysis insufficient to establish system operability because it did not address the entire spectrum of conditions for which HPCI is designed to perform its safety function. Furthermore, the analysis was based on the transient starting at the same turbine speed that was observed during the October 14, 1999 event. The inspectors concluded that this was an invalid assumption for determining system operability. The inspectors' conclusion was based on the unpredictability of the speed transient and the importance of the turbine speed at the onset of the transient. The unpredictable nature of the transient was described in NYPA's analysis and was apparent in the various initiating speeds observed throughout NYPA's troubleshooting.

Based on the above, the inspectors concluded that HPCI operability had not been established under all conditions and that the White finding remained. The transient initiation was unpredictable, based on the root cause of the speed transient and the operating characteristics of the control system, and there was a window of susceptibility in which the transient could occur. The susceptibility window would start at the onset of system flow and would end when the controller came out of saturation. The maximum transient starting speed would be limited by the controller's electronic speed limiter. Based on the electronic speed limiter setting, HPCI was vulnerable to a overspeed trip until February 5, 2000, when the oil pressure was corrected. Additionally, the improper electronic speed limiter setting found immediately following the October 14, 1999, event increased the likelihood of an overspeed trip for the period of time prior to the event.

Significance Determination

The inspectors used the NRC significance determination process (SDP) to evaluate the risk resulting from the degraded condition of the HPCI turbine. An SDP Phase 3 analysis was performed by the inspectors and regional senior reactor analysts (SRAs) because the SDP Phase 2 analysis had found elevated risk. The SDP Phase 3 analysis determined that the HPCI turbine overspeed trip during startup resulted in an increase in core damage frequency (CDF) of 5.6E-06 per reactor year. This is equivalent to a White SDP finding.

Specifically, the SDP Phase 3 analysis used data from the recent NYPA probabilistic risk analysis (PRA) to calculate the increase in CDF. The calculated baseline plant CDF from that PRA is 2.44E-06 per reactor year. The two core damage sequences affected were loss of off-site power No. 3 (LOOP - failure of high pressure injection and failure to depressurize) and transients No. 2 (Trans - failure of the power conversion system, failure of high pressure injection, and failure to depressurize). The risk achievement worth for a HPCI failure to start is 9.22. The exposure time for which this condition was assumed to have existed was 102 days, the period from discovery on October 14, 1999, until the condition was corrected on February 5, 2000. The analysis is also based on the assumption that the HPCI turbine was recoverable, either automatically from a re-start signal, or manually through operator actions. The probability of successful recovery was determined from historical equipment performance. When combined, these factors resulted in an increase in CDF of 5.6E-06 per reactor year.

NYPA Performance

Based on a review of NYPA's troubleshooting and HPCI system evaluations, the inspectors concluded that a combination of electronic speed limiter setting, hydraulic oil operating pressure, and governor lever spring tension had been improperly controlled and had resulted in HPCI being susceptible to overspeed trips. The inspectors also concluded that ineffective system performance monitoring had enabled these factors to go undetected.

Furthermore, each of these items were related to shortcomings in NYPA's performance. With respect to the electronic speed limiter setting, this NYPA performance issue was previously addressed in NRC IR 05000333/1999009, Section 1R03.2. The remaining issues are described below.

Improperly established hydraulic oil operating pressure In May 1997 NYPA changed their methodology for establishing the HPCI hydraulic oil operating pressure, which resulted in the pressure being inappropriately high. Subsequently, NYPA made additional changes to operating pressure or to the method they used for establishing the operating pressure that resulted in inappropriately high oil pressure. During NYPA's evaluations of these changes, they failed to identify and correct the deviations. (DERs 00-0391, 0411, 0412)

Improperly tensioned governor lever springs As part of the effort to troubleshoot HPCI, NYPA performed extensive inspections of the governor control linkages. During this troubleshooting NYPA identified that the governor lever spring tension deviated from the

plant drawings. However, the impact of improper spring tension was not adequately considered as part of the corrective actions prior to returning HPCI to an operable status on February 5, 2000. Specifically, the function of the governor lever springs is to provide a force on the turbine control valves in the closed direction that the hydraulic oil pressure needs to overcome in order for the control valves to open. Because NYPA set the hydraulic oil operating pressure in accordance with industry information, which is based on the other system components being within specification, the out-of-specification spring tension should have been corrected or addressed when NYPA established the hydraulic oil operating pressure. NYPA did neither prior to declaring the system operable. Even though NYPA failed to consider the impact of the improper spring tension in establishing the hydraulic oil operating pressure band, based on the as-left spring tension and the as-left hydraulic oil operating pressure, system operability was maintained. (DERs 00-00572, 00-00619)

Ineffective system performance monitoring Based on the information available at the close of NRC Inspection 05000333/1999009, the inspectors identified an apparent violation of 10 CFR 50 Appendix B, Criterion XI, "Test Control." Specifically, it appeared that NYPA failed to incorporate guidance from the December 8, 1989, General Electric (GE) Service Information Letter (SIL) 336, Revision 1, "Surveillance Testing Recommendations for HPCI and RCIC Systems," into their testing program.

At the regulatory conference NYPA stated that the apparent violation, as written in NRC IR 05000333/1999009, was not appropriate because the testing cited in the apparent violation was not required for determining HPCI operability. In a subsequent investigation, NYPA determined that it was not the intent of the SIL to monitor governor control system performance for determining HPCI system operability as part of the surveillance testing. Furthermore, NYPA concluded that at the time of the SIL, the HPCI system engineer was adequately monitoring system performance in accordance with the intent of the SIL. However, the details regarding the monitoring methodology, rigor and expectations were not documented. NYPA also determined that as time went on, new system engineers were assigned to HPCI and eventually system monitoring was no longer being completed in accordance with the intent of the SIL.

The inspectors concluded that NYPA's position was correct and that no violation of test control requirements existed.

However, based on onsite review and the information provided by NYPA at the regulatory conference, the inspectors concluded that for the last several years the performance monitoring of the HPCI system was not being completed in accordance with the intent of GE SIL 336 Revision 1. Furthermore, the performance monitoring was ineffective as evidenced by the failure of NYPA to identify the problems with the electronic speed limiter, hydraulic oil pressure, spring tension, and general degradation of the system and components. (DER 99-02956)

Corrective Action Violation

The inspectors concluded that NYPA failed to identify and correct problems with the HPCI governor control system. 10CFR50, Appendix B, Criteria XVI, "Corrective Action," requires that conditions adverse to quality are promptly identified and corrected. Contrary to the above, prior to February 5, 2000, the measures were inadequately established to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances associated with the high pressure coolant injection system were promptly identified and corrected. Specifically, several changes made to the HPCI system hydraulic oil operating pressure failed to identify the proper operating pressure as specified in industry guidance. The improper oil operating pressure resulted in abnormalities in HPCI governor control system performance and could have resulted in an overspeed trip during the startup of the system. In addition, HPCI system performance monitoring was ineffective as evidenced by the failure of NYPA to identify the problems with hydraulic oil pressure, spring tension and general degradation of the system and components. The failure to have identified and corrected the condition adverse to quality associated with the HPCI system is a violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Action." **(VIO 05000333/1999009-01, EA 99-325)**.

NRC Conclusions

In summary, the inspectors concluded that:

1. Given the problems with the HPCI hydraulic oil operating pressure, HPCI operability under all design conditions was not established.

2. The preliminary White significance determination of this finding should be established as its final significance.

3. A violation on corrective action requirements existed.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather

a. Inspection Scope

On January 10, 2000, the National Weather Service issued a high wind warning for the area surrounding the FitzPatrick Nuclear Power Plant, with winds forecasted to increase to 30 to 40 miles per hour (mph), with gusts to 60 mph. The inspectors reviewed the New York Power Authority (NYPA) procedures and preparations for high winds. Subsequently, the National Weather Service downgraded the high wind warning to an advisory.

On January 18, 2000, lake temperatures decreased to 34 degrees Fahrenheit, creating the possibility for the formation of ice in the plant intake structure. As a result the inspectors reviewed the NYPA procedures and actions taken for colder lake temperatures.

b. Observations and Findings

There were no findings identified.

1R04 Equipment Alignments

a. Inspection Scope

The inspectors performed a complete system walkdown (visual inspection) of the standby liquid control (SLC) system.

As part of this inspection the inspectors reviewed actions taken by NYPA for previous instances of inadequate control of the configuration of safety systems. Specifically, the inspectors reviewed the corrective actions in response to non cited violation (NCV) 05000333/1999006-02 regarding the failure to adequately control the configuration of the high pressure coolant injection (HPCI) system. Additionally, the inspectors reviewed the corrective actions to deficiency and event reports (DERs) 99-2924 and 99-1925 associated with equipment alignment issues. These issues were selected based on the inspectors' routine review of the operators' logs.

The inspectors also performed a partial system walkdown of the B standby gas treatment system during planned maintenance on the A train.

b. Observations and Findings

There were no findings identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors focused on fire protection equipment during tours of the east and west electric tunnels.

The inspectors reviewed the corrective actions associated with DER 99-3025 regarding the unexpected start of all the fire pumps during annual testing.

b. Observations and Findings

There were no findings identified.

1R12 Maintenance Rule (MR) Implementation

a. Inspection Scope

The inspectors reviewed the implementation of Maintenance Rule (MR) as related to the following:

- Standby liquid control tank level indicator failures in excess of the MR goal.
- Repeated problems with the ability to shift the residual heat removal system service water strainers.

b. Observations and Findings

There were no findings identified.

1R13 Maintenance Risk Assessment and Emergent Work

a. Inspection Scope

The inspectors reviewed the maintenance risk assessment associated with the following activities:

- Planned inoperability of both divisions of standby liquid control for air sparging.
- Unplanned inoperability of the HPCI system after speed and flow anomalies were observed during surveillance testing.
- Unplanned removal of air compressor A from service for corrective maintenance.
- Emergent work to clean shells from the circulating water inlet bays.
- Planned maintenance to clean a residual heat removal system service water (RHRSW) strainer.

b. Observations and Findings

The inspector identified untimely corrective actions for a RHRSW strainer having a high differential pressure indication. Corrective maintenance for an indication of high differential pressure on a safety system strainer had not been taken for approximately three and one-half months.

On October 16, 1999, operators initiated a deficiency tag as a result of receiving a high differential pressure alarm for the B RHRSW strainer basket. The strainer was subsequently shifted, placing a clean strainer in service. (The RHRSW system has a duplex strainer arrangement such that one side can be removed from service for cleaning while the other side remains in operation. The RHRSW system is not normally in operation and has a safety function to supply cooling to the residual heat removal system following an accident.)

On January 31, 2000, the deficiency on the B RHRSW strainer was being worked on as part of the planned maintenance schedule. The inspector questioned the appropriateness of this work priority, i.e., permitting the corrective maintenance to be delayed until January 31. The inspector noted that during this time period, NYPA was experiencing significant shell intrusion from the circulating water system into the main condenser. NYPA reviewed the issue and concluded that the strainer should have been classified as a priority B deficiency, which would have resulted in the corrective maintenance being scheduled as soon as practicable.

This issue was considered to have very low risk significance (Green) using the Significance Determination Process (SDP) phase 1 evaluation, because the system was still capable of performing the safety function using the good strainer. Nonetheless, the failure to promptly correct this condition is a violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Action," which requires, in part, that conditions adverse to quality be promptly identified and corrected. This violation is considered a non-cited violation, consistent with the Interim Enforcement Policy for pilot plants. The issues associated with this violation are in the NYPA corrective action program as DER -00-00362. **(NCV 05000333/2000001-01)**

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed operability determinations associated with the following plant equipment challenges:

- **!** Operability of HPCI concerning an unexpected control valve operation.
- **!** Operability of HPCI concerning increased heat exposure to control circuit conduit due to missing lagging on a nearby turbine casing drain line.
- **!** Operability of the containment air dilution system concerning insufficient margin between the system operating pressure and rupture disk burst pressure.
- **!** Operability of HPCI concerning governor spring tension not in accordance with the plant drawings.
- **!** Operability of HPCI concerning oil leaks on the governor control oil system.

Additionally, the inspectors reviewed portions of NYPA's root cause determination and corrective actions regarding the untimely operability determinations associated with the HPCI system in October 1999.

b. Observations and Findings

There were no findings identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspector reviewed and observed portions of the following post maintenance testing:

- **!** HPCI testing following system maintenance and troubleshooting.

b. Observations and Findings

There were no findings identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed HPCI surveillance testing.

b. Observations and Findings

There were no findings identified, beyond those identified in the above Final Significance Determination.

4. OTHER ACTIVITIES [OA]

4OA1 Identification and Resolution of Problems

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

- **!** Section 1R13 - Corrective Maintenance on RHRSW Strainer. This demonstrated weak evaluation (and priority) for an identified problem.

- **!** Section 1R22.2 - HPCI Overspeed Trip. This demonstrated weak identification of problems, in that HPCI system monitoring did not previously determine problems regarding speed limiter settings, hydraulic oil operating pressure, and governor lever spring settings.

Additional items associated with the NYPA's corrective action program were reviewed without findings and are listed in Sections 1R04, 1R05, and 1R15 of this report.

4OA2 Performance Indicator Verification

a. Inspection Scope

The inspector reviewed the performance indicators for *Safety System Functional Failures.* Specifically, the inspectors verified that the HPCI system inoperability as described in Licensee Event Report (LER) 99-008 was appropriately accounted for as a safety system functional failure.

b. Observations and Findings

There were no findings identified.

4OA4 Other

.1 (Closed) LER 50-333/99-008: High Pressure Coolant Injection System Declared Inoperable Due to Instrument Malfunction During Surveillance Testing. This LER was a minor issue and was closed during an on-site review.

.2 (Closed) LER 50-333/99-012: Main Turbine Trip and Reactor Scram Due to Moisture Separator Reheater and Moisture Separator Reheater Drain Tank High Level Trip Signals. This LER pertained to a minor issue and was closed during an onsite review.

.3 (Closed) LER 50-333/97-003-02: Potential Over Pressurization of Containment Penetrations due to Thermal Expansion. This LER update presented the results of an evaluation which showed that a containment penetration, X-18, was in fact susceptible to overpressurization during certain scenarios. The previous operability determination concluded that the penetration would remain operable following a postulated accident. This LER update committed to a modification in the next refueling outage to install relief protection at this penetration. No new issues were revealed during an in-office review of this LER.

4OA5 Meetings

Exit Meeting Summary

On March 2, 2000, the inspectors presented the inspection results to Mr. D. Lindsey and other members who acknowledged the findings presented.

During the exit, in addition to the HPCI White issue, one issue of very low risk significance was discussed that was determined to be a non cited violation (NCV). Should NYPA elect to contest this NCV, a written response within 30 days of the date of this Inspection Report, with the basis for their denial, should be sent 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, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the FitzPatrick facility.

The inspectors asked the NYPA personnel whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

Public Meeting

On February 7, 2000, the NRC conducted a Regulatory Conference with NYPA in the NRC Region I office to review the White inspection finding described in NRC Inspection Report 05000333/99009. The White inspection finding was related to the performance of the high pressure coolant injection system following the October 14, 1999, reactor scram. Conclusions drawn as a result of this meeting are described in Section 1R22 of this report.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

M. Colomb, Site Executive Officer
J. Flaherty, Quality Assurance Manager
D. Kieper, General Manager Maintenance
D. Lindsey, Plant Manager
W. O'Malley, General Manager Operations
K. Pushee, Radiological Protection Supervisor
P. Russell , Operations Manager
G. Tasick, Licensing Manager
G. Thomas, Director Design Engineering
A. Zaremba, General Manager Support Services

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened
VIO 05000333/1999009-01, EA 99-325: Failure to identify and correct conditions adverse to quality regarding the HPCI system.

Opened and Closed
NCV 05000333/2000001-01: Inadequate corrective actions for a RHRSW strainer having a high differential pressure indication.

Closed
AV 05000333/1999009-01, EA 99-325: Apparent Violation regarding Inadequate Testing of the HPCI system.

LER 50-333/99-008: High Pressure Coolant Injection System Declared Inoperable Due to Instrument Malfunction During Surveillance Testing.

LER 50-333/99-012: Main Turbine Trip and Reactor Scram Due to Moisture Separator Reheater and Moisture Separator Reheater Drain Tank High Level Trip Signals.

LER 50-333/97-003-02: Potential Over Pressurization of Containment Penetrations due to Thermal Expansion.

LIST OF ACRONYMS USED

AV	Apparent Violation
CDF	Core Damage Frequency
CFR	Code of Federal Regulations
CV	Control Valve
DER	Deficiency and Event Report
ESW	Emergency Service Water
GE	General Electric
HPCI	High Pressure Coolant Injection
IR	Inspection Report
LER	Licensee Event Report
mph	miles per hour
MR	Maintenance Rule
NCV	Non-Cited Violation
NOV	Notice of Violation
NRC	Nuclear Regulatory Commission
NYPA	New York Power Authority
PRA	Probabilistic Risk Assessment
RCIC	Reactor Core Isolation Cooling
RHRSW	Residual Heat Removal Service Water
SDP	Significance Determination Process
SIL	Service Information Letter
SLC	Standby Liquid Control
TS	Technical Specification
UPS	Uninterruptable Power Supply

ATTACHMENT 1

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently 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 and assessing 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:

Reactor Safety	Radiation Safety	Safeguards
! 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 that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

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 varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

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. 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. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.

ATTACHMENT 2