U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Report Nos.: 50-220/90-06
50-410/90-06

Docket Nos.: 50-220
50-410

License Nos.: DPR-63
NPF-69

Licensee: Niagara Mohawk Power Corporation
301 Plainfield Road
Syracuse, New York 13212

Facility: Nine Mile Point, Units 1 and 2

Location: Scriba, New York

Dates: May 31, 1990 through July 12, 1990

Inspectors: W. A. Cook, Senior Resident Inspector
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Approved by: Glenn W. Meyer 7-26-90
Glenn W. Meyer, Chief Date
Reactor Projects Section No. 1B

Inspection Summary:

This inspection report documents routine and reactive inspections during day and backshift hours of activities including: plant operations; surveillance and maintenance; emergency preparedness; security; engineering and technical support; and safety assessment/quality verification.

Results:

Two examples of a violation of Administrative Procedure 4.2 were identified and are discussed in Section 1.1.a.

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EXECUTIVE SUMMARY

Nine Mile Point Unit 1 and 2 Combined Inspection Report

Nos. 50-220/90-06 and 50-410/90-06

May 31, 1990 - July 12, 1990

Plant Operations: (Unit 1) Niagara Mohawk assessment of the incident involving the running of the #11 feedwater pump with its suction valve shut was determined to have been incomplete. In addition, a Notice of Violation was issued against AP 4.2 due to inadequate system configuration control. The task force investigation of the feedwater pump impeller problems was good. The reactor building integrity issue raised while rolling the 34-15 stub tube reflects incomplete planning and communications. (Unit 2) The review of an inadvertent standby gas treatment system initiation indicated weak operator planning and review.

Radcon: Efforts to locate a vacuum leak were well planned and executed with good ALARA practices.

Surveillance and Maintenance: (Unit 2) Inspector observations of preventive maintenance on the standby gas treatment fan were indicative of poor procedural adherence practices.

Emergency Preparedness: Preliminary review of the proposed drill scenario for the August 1990 exercise revealed no major concerns.

Security: Resolution of potentially sensitive security plan information not safeguarded was observed to be appropriate.

Engineering and Technical Support: (Unit 1) A review of the outstanding Detailed Control Room Design Review and associated items by the inspector identified no impediments to Unit 1 restart. Inspector review of the core spray sparger/pipe whip issue identified a conservative interim resolution and good technical engineering identification of the potential operability concern. (Unit 2) The identification of a pipe stress analysis concern and the approach to resolution of the problem by Niagara Mohawk engineers were considered satisfactory. Resolution of the concern represents an unresolved item.

Safety Assessment/Quality Verification: The repetition of inadvertent actuations of the Unit 1 reactor building emergency ventilation actuation system demonstrates a weakness in Niagara Mohawk's problem identification and corrective action program.

DETAILS

1. Plant Operations (Modules 71707, 71710, 93702)

1.1 Unit 1

During this period Niagara Mohawk made significant progress in completing the last major tests required to support startup of Unit 1. Progress continues towards Unit 1 startup with surveillance testing as the current critical path.

a. (Closed) Unresolved Item (50-220/90-04-01): This item was opened pending NRC review of the circumstances leading to the operation of the #11 motor-driven feedwater pump (MDFWP) with its suction valve shut. Although Niagara Mohawk has not yet finalized their evaluation of the event, the inspectors have reviewed this incident with Unit 1 management in sufficient detail to conclude that Administrative Procedure (AP) 4.2, Control of Equipment Markups, was violated and that Niagara Mohawk's evaluation and corrective actions for this event were incomplete.

As previously discussed in Inspection Report 50-220/90-04, the #11 MDFWP was run for several seconds on May 23 with its suction valve shut. Niagara Mohawk investigation revealed that the suction valve was closed and tagged on May 21 to prevent rotation of the pump while mechanical maintenance personnel decoupled the pump from the motor. The inspector determined that when the mechanics were preparing for this job, they had originally requested that the pump and its isolation valves be tagged in the protective position using a Red Markup (RMU). However, operations informed the mechanics that a Blue Markup (BMU) was already in effect for testing the #11 MDFWP and that the suction valve could be added to this BMU.

The inspector notes that in accordance with AP-4.2, BMUs permit switches or valves which have been tagged in the protective position to be operated for electrical or other tests which are required or desirable before completion of the work. A RMU prevents any operation of the component or valve and the RMU must be cleared prior to repositioning or energizing a component for a post-maintenance test. Nothing in AP-4.2 or the Niagara Mohawk Accident Prevention Rules (Green Book) specifically prohibits the conduct of maintenance under a BMU. The inspector determined that it had become common practice to relax the BMU use, for convenience, and allow a broad variety of maintenance activities to be conducted under them.

As defined by AP-4.2, the markup person is the individual that requests and receives an equipment markup from the controller (normally the chief shift operator). Per Sections 5.5.4 and 6.1.11.d of AP-4.2, the markup person shall maintain positive control over the assigned markup(s) to ensure the safety of personnel performing work. The markup person shall also remain aware of, and responsible for, the performance or direction of work within the scope of the markup until the markup is surrendered to the controller. When applied to BMUs, which allows repositioning of components, the markup person shall remain cognizant of the position of components on that BMU at all times.

When the #11 MDFWP suction valve was added to the BMU on the evening of May 21, the markup person was not on site. Per AP-4.2, he was required to be informed, by telephone, that his markup was being modified by the addition of the pump's suction valve. An unsuccessful attempt was made to inform the markup person of the BMU change. More pressing demands distracted the onshift operators and the markup person was never informed of the addition of the suction valve to his BMU. Consequently, prior to the #11 MDFWP being run on May 23, the markup person had no apparent cause to reverify his BMU and the suction valve was not reopened prior to pump start. The failure of the markup person to be informed of a change to his blue markup of the #11 MDFWP on May 21, is contrary to the requirements of AP-4.2, Section 5.5.4 and will be identified as a VIOLATION (50-220/90-06-01).

In response to this event, Niagara Mohawk revised (Revision 3) Unit 1 Operations Department Instruction (ODI) 5.06, Markups, to clarify the conditions under which BMUs and RMUs are to be applied. Specifically, BMUs should be used for minor maintenance only. Some examples are illustrated in Revision 3 to clarify what constitutes minor maintenance. Revision 3 also requires a review of a BMU prior to testing of the effected system to verify proper system configuration. Other corrective actions included the initiation of a formal root-cause evaluation (still pending final SORC approval), and a proposed revision to AP-4.2 to incorporate both Unit 1 and 2 markup ODIs and to clarify the use of BMUs and RMUs. In addition, discussions led by the operations superintendent with all shift crews on proper control of testing and markups were held. Lastly, a special test procedure to govern all subsequent feedwater pump testing was developed to ensure positive testing control.

The corrective actions for control of testing appear to have been effective as evidenced by inspector observations of several major tests this inspection period. These tests have been carried out carefully, in an appropriately paced, professional manner and with no operator errors. The inspectors assessed the special test procedures for subsequent feed pump runs on June 8 as providing good positive control of the evolution.

After ODI-5.06 had been changed to clarify when BMUs should be used for maintenance, the inspectors determined that no specific effort was made by operations management to review the markup logs for compliance with the change to ODI-5.06. Further, the inspector was concerned that Niagara Mohawk's review of the event did not identify the vulnerability of BMUs to proper communications, relative to maintaining awareness of component status. This concern was discussed with station management on June 27 and to test this concern, on June 28, the inspector reviewed the markup log books in the Unit 1 control room and randomly selected BMU 15270 (hung for modifications to the stack gas monitoring system), to determine if the markup person was aware of the status of all components under that markup.

Initial in-office review of BMU 15270 with the markup person identified that all the components on the blue markup should be energized/plugged in. The markup man was unsure of the status of only one component, which had been released by him to another individual for repositioning. The inspector then accompanied the markup man in the field to verify the stated status of the components on the markup. The inspector observed that the markup man was knowledgeable of the equipment under control of the BMU and was able to quickly locate all of the tagged components in the control room and out in numerous plant locations. However, contrary to the markup man's expectations, two items on the BMU were not in their expected configuration. These included a disconnected amphenol connector and a pair of fuses that were found pulled. This is a second example of a violation of AP-4.2, in which the markup person had not been notified of a change in component status under his control.

The markup man promptly notified his management of the inspector's findings and initiated an investigation into the identified BMU discrepancies. On the following day, June 29, the Unit 1 operations superintendent ordered a field verification of all components under BMU control.

Assessment

Similar to the source range monitor bypass incident discussed in Inspection Report 50-220/89-33, which also involved failure to properly use the markup system, Niagara Mohawk's review and corrective actions for the MDFWP suction valve incident discussed above was incomplete. It is apparent from the two examples stated above, that the BMU system is dependent upon verbal communications to ensure proper configuration control. Inspector review of the program also indicates that there is no formal mechanism (ie. status sheet) for maintaining an accurate day to day status of valves, switches, fuses, etc. under control of a BMU. Consequently, the current BMU procedures leave systems vulnerable to poor configuration control.

b. On June 8, the #11 feed pump was run per special test procedure STP-12. The first pump run was secured within seconds due to high pump amperage. The pump was run a second time, but was also secured within seconds due to flow oscillations and pipe sway. All further testing on the feed pumps was stopped.

On June 9, Niagara Mohawk management created a task force to examine all information from previous pump runs and to attempt to resolve all of the performance problems. The task force established several avenues of investigation. One approach was to run the pump motors decoupled to check the electric motors. This was done with no electrical problems noted. Then, with the pump decoupled, flow was induced through the pump via the condensate system. The pump shafts were observed to rotate backwards when this was done. The decision was then made to examine the pump internals by use of a boroscope. The boroscopic inspection revealed that the impellers on the #11 and #12 feed pumps appeared to be installed backwards. Disassembly of the pumps confirmed the boroscopic examination results in that the impellers were installed backwards on the pump shafts. Subsequent investigation revealed that the pumps were delivered from the vendor with the impellers installed backwards.

Niagara Mohawk was still developing the root cause analysis for this event at the close of the inspection period. In addition to examining and making changes to their procurement and receipt inspection process, Niagara Mohawk requested the vendor to examine their own quality assurance processes and to identify why the impellers were improperly installed on the pump shafts. During the week of July 9, the vendor informed Niagara Mohawk that they had erred in the fabrication/assembly of the pump rotor and impeller. They considered the error to be isolated to the two assemblies fabricated in 1987/1988 for Niagara Mohawk. Niagara Mohawk has committed to review their final root cause analysis with the inspectors.

Following teardown and reassembly of the #11 and #12 feed pumps, HPCI testing was resumed on June 29. The testing was controlled under special test procedure, STP-13, High Pressure Coolant Injection Pump Curves Field Validation Test. STP-13 was a synthesis of procedures STP-12 and N1-88-7.1 and provided instructions for feed system alignment, pump starts and obtaining the HPCI pump curves. The inspector observed various portions of STP-13 over several days and concluded that the testing was being well controlled both locally and in the control room. It was also noted that the feed system operated well with no flow oscillations or recirculation line swaying problems. STP-13 was completed with satisfactory results obtained for the feedwater/high pressure core injection (HPCI) pump curves.

Assessment

Niagara Mohawk's decision to assign a task force to review the anomalous pump data was a good decision that resulted in rapid identification of the impeller misalignment problem. This is an example of good problem identification and resolution.

c. On June 28, 1990 the inspector conducted a routine review of the control room logs and the previous evening's operations superintendent's instructions to the station shift supervisor (SSS). The inspector noted that to support control rod drive 34-15 stub tube rolling, conducted the evening of June 27, a temporary diesel powered air compressor was needed. The air line from the diesel air compressor to the pneumatic stub tube rolling mechanism was extended through the reactor building track bay personnel airlock doors. This resulted in a breach of secondary containment (reactor building) integrity.

The inspector determined that the day shift SSS, before compromising reactor building integrity with this configuration, questioned whether or not Technical Specification (TS) 3.4.1 was being adequately satisfied given the activities engaged in under the reactor vessel. Operations management responded to the SSS's concern with a memorandum concluding reactor building integrity may be suspended during the stub tube rolling activity. This conclusion was made by operations management, in spite of Technical Specification Interpretation No. 22, which states that it is Nuclear Engineering and Licensing's position that reactor building integrity is recommended and should be maintained during control rod drive work and while performing

operations that could potentially drain the reactor vessel while fuel is in the vessel. The memorandum stated that the basis for differing from the TS interpretation recommendations was that the volume of air needed to support the rolling operations is greater than can be supplied by permanently installed equipment or equipment that can be located within the reactor building. Secondly, the limited duration (a few hours) of the rolling activity itself.

The inspector expressed a concern to Niagara Mohawk that the basis for their conclusion to suspend reactor building integrity requirements was insufficiently supported, with respect to the TS interpretation No. 22 recommendation. The inspector asked for further clarification of the licensee's position that reactor building integrity was not needed for conducting stub tube rolling.

On June 29, the inspector met with operations management and a member of the licensing staff, to discuss the basis for operations deviating from TS interpretation No. 22. During that meeting, operations management provided further information on factors they had considered prior to the decision to deviate from the TS interpretation recommendation. Based on this information, the inspector concluded that adequate consideration had been given to the TS interpretation prior to breaching reactor building integrity. However, the memorandum to the SSS did not explicitly state the considerations nor were they adequately communicated to the inspector during initial discussions. Further, at that meeting, the licensing staff concluded that in their after-the-fact review of the issue, technical requirements had been met and their review did not conflict with the previous operations management decision.

The inspector remained concerned that the process used to deviate from the TS interpretation recommendation was informal and unstructured. The discussion held on June 29 clarified that the operations management decision to deviate from the recommendation was not thoroughly researched outside the operations department. Operations management treated the TS interpretation recommendation as a discretionary action without consulting further with engineering or licensing before making their final decision. More importantly, the apparent lack of proper planning, research, and review for an alternate means of supplying a high volume air supply resulted in overlooking a secondary containment penetration installed a few years prior for this type of activity.

The inspector concluded that, although there was no significant safety impact by breaching reactor building integrity for the 34-15 stub tube rolling on June 27, better planning and more thorough review could have avoided this situation. Further, the inspector concluded that a more structured review process for handling Technical Specification interpretation recommendations should be considered by Niagara Mohawk. Niagara Mohawk agreed with these conclusions and was evaluating corrective actions.

1.2 Unit 2

The inspection period began with the unit operated at reduced power (approximately 30%) due to condenser vacuum leakage. The leakage was corrected and the unit was returned to full power on June 8. The end of cycle coastdown began on June 14 and power was 88% at the end of this inspection period.

a. During a plant startup on May 29, the unit experienced excessive condenser inleakage resulting in high offgas flow. Power ascension was stopped at 30% in order to minimize exposure to the leak detection personnel and prevent a further reduction in condenser vacuum. Niagara Mohawk personnel searched for the source of the leakage utilizing helium leak detection rigs. The leak was identified as a crack in the turbine labyrinth seal exhaust line at the condenser penetration. A temporary patch was placed over the crack and flow in the offgas system returned to normal. Power ascension was continued and the unit was returned to rated power. The inspector concluded that Niagara Mohawk proceeded cautiously by maintaining the plant at low power until the leak was identified and thus minimized the man-rem exposure received by the leak detection crews.

b. A review of active Unit 2 Blue Markups (BMU) was performed by the inspector to determine if similar problems experienced at Unit 1 existed at Unit 2. There were approximately 90 BMUs in effect. The inspector determined the BMUs were generally being used for testing and minor maintenance activities. However, the inspector noted that ten of the BMUs were being used for configuration control purposes, despite procedural guidance that yellow holdout tags should be used for this purpose. This was discussed with operations management who agreed with the misapplication of the BMU tags. Niagara Mohawk took the following corrective actions to prevent recurrence:

-- Cleared the BMUs that were utilized for configuration control and substituted yellow holdout tags, as appropriate.

-- Instructed operators that BMU tags are not to be used for configuration control.

-- Administrative Procedure 4.2 will be enhanced to clarify when BMUs should or should not be used.

The inspector considered these corrective actions adequate.

c. Improper sequence of hanging a Blue Markup for preventive maintenance on a reactor building fan resulted in an inadvertent actuation of standby gas treatment fan A. Once the air supply to an air operated damper was isolated, the damper failed open and caused its associated fan to windmill in parallel with the operating fan. This resulted in a low flow condition, which tripped the normal reactor building ventilation and automatically initiated the standby gas treatment system initiation. Niagara Mohawk properly initiated a 10 CFR 50.73 report (LER 90-15). The inspector concluded that in this event, the planning of the Blue Markup and its review by operations personnel had been weak.

2. Surveillance and Maintenance (Modules 71707, 61726, 62703)

2.1 Unit 1

a. The following tests were observed and assessed by the inspectors:

-- N1-ST-R2, Loss of Coolant Accident and Emergency Diesel Generator Simulated Automatic Initiation Test.

-- N1-PAT-10-1, Loss of Off-Site Power.

-- N1-PAT-4.1, Feedwater Control System Testing.

All the tests observed were performed in a well controlled and satisfactory manner. Good communications and teamwork were noted during these evolutions, especially during N1-PAT-10-1, which was a complex evolution requiring massive data collection. Feedwater testing performed per N1-STP-13 was observed and is discussed in Section 1.1.b.

b. Tear down and assembly of the feedwater pumps to support rotor replacement were observed. Replacement of the #12 CRD pump was also observed. The inspector assessed the work practices to be adequate and no concerns were identified.

2.2 Unit 2

a. The inspector observed the performance of mechanical preventive maintenance on standby gas treatment fan A per N2-MPM-GEN-A560. Two examples were identified where procedural steps were not properly executed. The step requiring notification of quality control personnel was erroneously marked as Not Applicable because the maintenance personnel thought the fan was non-safety related. The standby gas treatment system is classified as an engineered safety feature and is safety related. Another procedural step required checking the fan mounting fasteners for tightness. The maintenance technicians randomly checked various fasteners for tightness, but failed to check the fan mounting fasteners. However, the fasteners were verified tight by the technicians after the inspector brought the procedure requirement to their attention. The inspector's assessment was that although the safety significance of these observations was low, these examples demonstrated poor performance by the maintenance technicians and poor procedural adherence.

To address the inspector's concerns, the licensee held discussions with all of the maintenance personnel emphasizing the importance of procedure adherence. Additionally, the licensee informed the inspectors that this and other similar procedures would be enhanced during the procedures upgrade program.

b. Based upon a recent automatic depressurization system (ADS) problem identified at a different boiling water reactor, the inspector reviewed the ADS accumulator and pneumatic supply leak rate testing (N2-ISP-ADS-R106) methodology to ensure a similar condition did not exist at Unit 2. The design problem had been identified during leakage testing of the nitrogen supply check valves and accumulators. The differential pressure required to open the check valves was found to be 25 psid and resulted in a lower than expected pressure in the accumulators available to actuate the safety relief valves. A recent change in test methodology and newly installed pressure gages had resulted in this discovery.

The inspector reviewed the Unit 2 leakage test procedure and system drawings and discussed the issue with responsible station personnel. ADS accumulator test pressure is established using the normal nitrogen supply and the test pressure is monitored using installed gages. The inspector and Niagara Mohawk staff concluded the FitzPatrick design issue was not a concern at Unit 2.

The inspector noted that a review of the Unit 1 ADS for this design concern was not warranted as the ADS valves are of an electro-mechanical design.

c. The inspector conducted a followup to a problem at Unit 2 involving the control building ventilation chiller units. The problem involved the sticking open of the four-inch check valve at the discharge of the service water recirculation/tempering pump. This pump and associated piping recirculates a portion of the service water discharge from the chiller back to the suction of the chiller to maintain service water inlet temperature above 60 degrees Fahrenheit. The tempering of the service water is for chiller thermal efficiency.

Both trains of control building ventilation are normally in service, and because of the relatively cool service water temperature, the tempering pumps are typically in service for extended periods of time (except during the warmer summer months). On June 17, service water temperature had risen above 60 degrees, and both ventilation train tempering pumps automatically secured within approximately 15 minutes. Both trains of control building ventilation subsequently tripped on chiller low flow. Niagara Mohawk investigation identified that service water flow was being short-circuited through the recirculation line and resulting in a low flow condition through the chiller causing the units to automatically trip. Further review identified that the check valves in both recirculation loops were stuck open, providing the reverse flow path (bypass flow). Subsequent internal inspection identified a small amount of rust and dirt buildup on the check valve pivot pins. Exercising of the flappers was sufficient to restore free movement of the valve.

Followup by the inspector identified that these recirculation systems are subjected to a quarterly surveillance test which does result in the exercising of the pump discharge check valves. All previous surveillance tests were completed satisfactorily and no indication of restricted check valve movement was noted. Niagara Mohawk suspects that the buildup of rust and dirt on the check valve pivot pins was progressive and finally reached a state where it inhibited free valve movement. The rust and dirt were cleaned from the valves before they were restored to use. Niagara Mohawk plans to more closely monitor the check valve performance and will increase the number of check valve internal examinations in the service water system during the upcoming September 1990 refueling outage. The inspector concluded that this approach was acceptable.

d. The inspector observed portions of a surveillance on SWP-2A per N2-OSP-SWP-Q002 which demonstrates pump operability. The inspector observed test preparations and reviewed the test data. Quality control personnel were present during the test. The test was executed properly and the pump data was acceptable.

3. Emergency Preparedness (Module 71707)

The inspector reviewed the proposed drill scenario for the August 1990 Emergency Preparedness Exercise. The drill scenario appears adequate. The inspector had no comments or concerns. A regional specialist review of the scenario is pending and any comments will be addressed with Niagara Mohawk prior to the drill.

4. Security (Module 71707)

a. During the week of June 4, the NRC Office of Nuclear Reactor Regulation staff conducted a Regulatory Effectiveness Review (RER) on site. The NRC personnel were assisted by members of the U.S. Army Special Forces. The purpose of the RER was to assure that the safeguards measures implemented by Niagara Mohawk adequately satisfy the NRC safeguards regulations and performance objectives. A summary of the RER team findings was documented by letter dated June 29, 1990 to Niagara Mohawk.

b. While NRC Region I license examiners were preparing for the Unit 1 licensed operator requalification program review, scheduled for the weeks of July 9 and 16, the examiners identified potentially sensitive security plan information not properly safeguarded. This potentially sensitive information was part of the documentation package provided by Niagara Mohawk for their examination preparation. The documents in question were reviewed by Region I security specialists and Niagara Mohawk staff for proper disposition. One document was removed from use by Niagara Mohawk and the other document was reviewed and found not to contain sensitive safeguards information. The inspector was satisfied that the concern was appropriately resolved and that the limited distribution of the documents in question did not compromise the security plan.

5. Engineering and Technical Support (Module 71707)

5.1 Unit 1

a. Status of Detailed Control Room Design Review

In preparation for Unit 1 startup, the inspector conducted a review of Niagara Mohawk's progress in resolving identified concerns developed from the Detailed Control Room Design Review (DCRDR). An onsite NRC headquarters team audit was conducted in this area on June 13 and 14, 1989 to assess Niagara Mohawk progress and preliminarily found their efforts satisfactory. A summary report of the June 1989 headquarters team audit is pending final review and issuance.

The inspector reviewed Niagara Mohawk's October 19, 1989 summary listing of Human Engineering Observations developed as a result of a multi-disciplinary team review. The review team assembled observations from the DCRDR, Emergency Operating Procedures Review, Safety Parameters Display System Review and a Regulatory Guide 1.97 Audit all conducted since an initial in-progress NRC audit performed in November 1984. The summary listing was reviewed to assess any outstanding observations which may adversely impact Unit 1 restart and to assess the adequacy of the current Niagara Mohawk tracking and resolution systems. The inspector observed no impediments to safe unit restart with respect to the DCRDR.

b. Part 21 Review

The inspector reviewed a Part 21 evaluation (No. F90-02) conducted by Niagara Mohawk's licensing department. The evaluation was performed to determine if operability requirements were satisfied for the core spray system following a recent review of the FSAR which states that a core spray line could be damaged by rupture and subsequent pipe whip of either the recirculation or safety relief valve discharge lines. This event would leave only one core spray sparger in operation to mitigate the consequences of LOCA. Previous analysis performed by GE showed that this scenario does not present a significant safety concern. The analysis states that had the unit experienced a LOCA during power operation, with only one core spray loop (sparger) available, the 10 CFR 50.46 criteria would be met. However, the current core load Appendix K analysis assumes two sparger operation. Due to this new concern over the effect that pipe whip could have on the core spray system, Niagara Mohawk has had GE modify this analysis and has taken a core thermal limit penalty. The penalty will be in effect until the issue of the recirculation line break damaging a core spray line is appropriately resolved.

The inspector reviewed the current "Core Operating Limits Report", (COLR), Rev. 1. As a result of the pipe whip analysis concern over single sparger availability, a multiplication factor (penalty) of 0.85 has been imposed on the maximum Average Power Linear Heat Generation Rate (APLHGR) calculated assuming two sparger operation in Figures A, B, C and D of the COLR. This reduction in maximum APLHGR limits translates to a core power derate of approximately 3% to 4% at beginning of cycle and a maximum derate of approximately 13% at end of cycle (EOC).

The current multiplication factor of 0.85 is conservative and will be used for the planned startup. Additionally, Niagara Mohawk has engaged GE to perform more refined evaluations which may result in increasing the multiplication factor to around 0.91 to 0.94. This could lessen the required core derate, especially at EOC.

The inspector assessed that the evaluation of the pipe whip concern is being handled in a conservative manner, that conservative restrictions have been imposed for plant restart and that appropriate steps are being taken to resolve the issue long term.

5.2 Unit 2

a. On June 20, Niagara Mohawk notified the inspectors of potentially nonconforming conditions involving pipe stress calculations for numerous large and small bore piping systems (including emergency core cooling systems) at Unit 2. This was identified as a result of engineering staff efforts to reduce the number of safety systems seismic snubbers. Specifically, the architect/engineer (Stone & Webster Engineering Corporation) inappropriately applied certified material test reports (CMTRs) to qualify certain high stress piping components and deviated from the analytical techniques set forth in the ASME Code Editions specified in the Updated Safety Analysis Report (USAR).

Conference calls were held between Niagara Mohawk and NRC specialists on June 21 and 22 to gain a better understanding of the scope of the issue. This type of problem had surfaced at other nuclear facilities in the U.S. and the NRC staff was familiar with the resolution techniques outlined by Niagara Mohawk to resolve the immediate system operability concerns. Niagara Mohawk presented their findings and preliminary conclusion to the NRC, including an operability determination for the standby liquid control system (SLS). SLS was considered one of the worst case pipe stress reconciliation systems.

Niagara Mohawk concluded that, based upon their operability determination of SLS, they were confident that all other piping systems were bounded and could be satisfactorily reconciled with the stated USAR pipe stress analysis. The NRC staff accepted Niagara Mohawk's approach and preliminary conclusions. In addition, the NRC staff requested the Niagara Mohawk findings, preliminary conclusions and generic implications be documented for further staff review. Niagara Mohawk complied with the staff's request by letter dated June 29, 1990. The inspector concluded that the identification of the concern and the approach to resolution of the problem by Niagara Mohawk were satisfactory. This item is unresolved pending completion of Niagara Mohawk evaluation and NRC review (UNR 50-410/90-06-02).

6. Safety Assessment/Quality Verification (Modules 71707, 40500)

a. Management Changes

Niagara Mohawk announced two senior management changes on May 14. Effective July 1, 1990, Ralph Sylvia will become the Senior Vice President, Nuclear Generation replacing the retiring Charles Mangan. Mr. Sylvia will subsequently replace Lawrence Burkhardt as Executive Vice President on November 15, 1990. Also effective July 1, Joseph Firlit will become Vice President and General Superintendent, Nuclear Generation replacing the retiring James Willis.

b. While reviewing recent Unit 1 Licensee Event Reports (LERs), the inspector noted that so far in 1990, there have been five inadvertent initiations of the reactor building emergency ventilation system (RBEVS), thus indicating an adverse trend. The inspector reviewed LERs from 1985 through present and determined that a total of 27 LERs documenting 35 RBEVS initiations have been issued. The inspector determined that many initiations were caused by similar root causes and that it was apparent that past corrective actions have been ineffective in reducing the number of RBEVS initiations.

The inspector's concerns and findings were discussed with the Unit 1 superintendent who requested the Independent Safety Engineering Group (ISEG) to review and validate the inspector's concern. ISEG's review of the LER data base corroborated the inspector's concern. ISEG's findings and report were discussed with the inspector and the unit superintendent at a meeting on July 6, 1990. The ISEG report concluded that "it is evident that an adverse trend involving RBEVS exists." The ISEG report identified primary causes for the initiations and gave several recommended actions to avoid future actuations.

The inspector assessed that the ISEG report was well written and researched, and served as a basis to provide specific recommended actions, programmatic and hardware, to improve the actuations trend. The unit superintendent has also committed to assign a group, as yet unspecified, to be responsible for developing a data base for trending analysis. The inspector concluded that, trending systems aside, the adverse trend in RBEVS initiations and the inadequacy of past corrective actions appeared to be readily apparent and should have been identified earlier by Niagara Mohawk. This area reflects a weakness in Niagara Mohawk's problem identification and corrective action program.

7. Allegation Followup

RI-89-A-0107: During the August 23, 1989 public meeting to receive comments on the Nine Mile Point Unit 1 Restart Action Plan, information was received from an individual alleging that radiation monitors had been turned off when radioactive releases or unusual events were in progress. By letter dated October 12, 1989, the NRC staff requested Niagara Mohawk address this allegation. Niagara Mohawk was provided a copy of the pages from the public meeting transcript which included the individual's above stated concern and other unrelated remarks.

By letter dated December 26, 1989, Niagara Mohawk responded to the NRC request. The Nuclear Security staff had conducted interviews with the alleger and were able to obtain some additional information to help focus their investigation. Allegedly, the Unit 1 stack radiation monitors were turned off during the time period of 1979, 1980 or 1981. No specific instances were known by the alleger and he claimed it to be a wide spread rumor in the local community. Niagara Mohawk used this information to perform a complete review of the original strip charts and stack activity release logs for the No. 7 and 8 stack gas monitors from January 1978 to December 1982. The Niagara Mohawk staff found no evidence in the period reviewed that the stack releases were unmonitored or that there was not at least one monitor was in service when required. Niagara Mohawk concluded that the allegation was unsubstantiated.

The inspector reviewed the Niagara Mohawk response and the summary investigation package prepared by the security department. The inspector considers the investigation to have been satisfactory, based upon the limited, non-specific information provided by the alleger and the broad data review performed.

8. LER Review (Module 92700)

8.1 Unit 1

The following LERs were reviewed and found satisfactory:

-- LER 89-15, Supplement 1, Emergency diesel failure modes not identified during Appendix "R" review.

-- LER 88-09, Supplement 1, Fire barrier penetrations non-functional due to being breached.

-- LER 88-12, Supplement 1, Failure to hydrostatically test a portion of the ASME Class 1 pressure boundary due to procedural error.

-- LER 90-08, May 23, 1990, Reactor building emergency ventilation initiation due to personnel error.

-- LER 88-01, Supplement 2, Technical Specification violation due to ISI program deficiencies.

-- LER 90-11, May 30, 1990, Reactor scram and reactor building emergency ventilation system initiation during surveillance test due to design deficiency.

-- LER 90-12, May 31, 1990, Main steam isolation valve isolation actuation during surveillance testing due to an inadequate procedure.

-- LER 89-10, Supplement 1, Design deficiency resulting in possible failure of safety system to perform its intended function.

-- LER 90-09, May 24, 1990, Reactor water cleanup system isolation due to a spurious signal from a high area temperature monitor.

-- LER 90-10, May 25, 1990, Two reactor scrams (and a reactor building emergency ventilation initiation) due to personnel error and equipment deficiency.

-- LER 90-07 (Voluntary), Containment spray inlet check valve found stuck open due to polybottle between seats.

The inspector reviewed this voluntary LER with the Niagara Mohawk staff and noted that following the initial 10 CFR 50.72 notification on May 15, 1990 Niagara Mohawk concluded the event was not reportable per 10 CFR 50.73 or 50.72. The inspector agreed with the conclusion. However, the inspector determined that the logic supporting the reportability conclusion was not accurate. An interpretation of 50.72(a)(2)(i)(B) cited in NUREG 1022, Supplement 1 was improperly applied. Instead, Niagara Mohawk should have referenced that following a review of the accident analysis the polybottle did not create a seriously degraded or unanalyzed condition that significantly compromised safety and therefore, did not satisfy the reporting threshold for 10 CFR 50.72(b)(2)(i) or 10 CFR 50.73(a)(2)(v). Niagara Mohawk concurred with this observation. No revision to the LER was requested by the inspector.

Special Reports

The following special reports were reviewed. The inspector determined that they were adequate and were issued within the time requirements required by the Unit 1 TS.

-- Special Report dated May 3, 1990 (NMP 59074)

-- Special Report dated June 19, 1990 (NMP 67580)

8.2 Unit 2

The following LERs were reviewed and found satisfactory:

-- LER 90-01, January 30, 1990, Control room special filter train actuation due to breaker cycling.

-- LER 90-02, January 18, 1990, Reactor scram while shutdown caused by spurious reactor water low level signal.

-- LER 90-03, January 28, 1990, Group 5 containment isolation actuation caused by poor work practices.

-- LER 90-04, February 1, 1990, Reactor scram while shutdown caused by a maintenance personnel error.

-- LER 90-05, February 6, 1990, Reactor water cleanup isolation caused by high differential flow with the root cause to be determined.

-- LER 90-06, February 13, 1990, Control room special filler actuation due to spurious trip.

-- LER 90-07, March 14, 1990, Inadequate calibration of the containment hydrogen analyzer results in non-compliance with USAR commitments.

9. Management Meetings (Module 30703)

Management Meetings Conducted by Region Based Inspectors During this Inspection Period

Date	Subject	Report No.	Inspector
6/8/90	Regulatory Effectiveness Review	N/A	David Orrick

Date	Subject	Report No.	Inspector
6/13/90	Power Ascension Test Program Review	50-220/90-17	Larry Wink
6/14/90	SALP Management Meeting	N/A	William Kane

Preliminary Inspection Findings

At periodic intervals and at the conclusion of the inspection, meetings were held with senior station management to discuss the scope and findings of this inspection. Based on the NRC Region I review of this report and discussions held with Niagara Mohawk representatives, it was determined that this report does not contain safeguards and proprietary information.