

OCT 04 1990

Docket No. 50-220

Niagara Mohawk Power Corporation
ATTN: Mr. Lawrence Burkhardt, III
Executive Vice President
Nuclear Operations
301 Plainfield Road
Syracuse, New York 13212

Gentlemen:

Subject: NRC Region I Inspection Report No. 50-220/90-06

Gentlemen:

This refers to your letter dated September 14, 1990, in response to our letter dated July 31, 1990.

Thank you for informing us of the corrective and preventive actions documented in your letter related to the markup process. These actions will be examined during a future inspection of the maintenance area.

Your cooperation with us is appreciated.

Sincerely,

ORIGINAL SIGNED BY:
CURTIS J. COWGILL

Curtis J. Cowgill, Acting Chief
Reactor Projects Branch No. 1
Division of Reactor Projects

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cc:

- R. Sylvia, Senior Vice President
- W. Hansen, Manager, Corporate Quality Assurance
- M. Colomb, Unit 2 Superintendent, Operations
- C. Beckham, Manager, Nuclear Quality Assurance Operations
- R. Abbott, Unit 2 Station Superintendent
- J. Perry, Vice President, Quality Assurance
- K. Dahlberg, Unit 1 Station Superintendent
- R. Randall, Unit 1 Superintendent, Operations
- J. Firlit, Vice President, Nuclear Generation
- C. Terry, Vice President Nuclear Engineering and Licensing
- J. Warden, New York Consumer Protection Branch
- T. Conner, Jr., Esquire
- G. Wilson, Senior Attorney
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- Director, Power Division, Department of Public Service, State of New York
- State of New York, Department of Law
- Public Document Room (PDR)
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- Nuclear Safety Information Center (NSIC)
- NRC Resident Inspector
- State of New York, SLO Designee

bcc:

- Region I Docket Room (with concurrences)
- R. Bellamy, DRSS
- J. Linville, DRP
- D. Vito, DRP
- G. Meyer, DRP
- M. Miller, DRP
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- R. Martin, NRR
- R. Capra, NRR

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 10/4/90

NMP 70198

September 14, 1990

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555


RE: Nine Mile Point Unit 1
Docket No. 50-220
DER-63

Gentlemen:

Attached is Niagara Mohawk Power Corporation's response to the Notice of Violation contained in Inspection Report No. 50-220/90-06 dated July 31, 1990. If you have any questions concerning this matter, please call.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION



L. Burkhardt, III
Executive Vice President
Nuclear Operations

LB/AC/lmc
(A:0002.Doc)

ATTACHMENT

xc: Regional Administrator, Region I
Mr. W. A. Cook, Resident Inspector
Records Management

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NINE MILE POINT UNIT 1
DOCKET NO. 80-220
DPR-63

RESPONSE TO NOTICE OF VIOLATION CONTAINED IN
INSPECTION REPORT 80-220/90-06

VIOLATION

Technical Specification 6.8.1 states that written procedures and administrative policies shall be implemented to meet or exceed the requirements of Appendix A of Regulatory Guide 1.33, which states that administrative procedures shall be implemented for equipment control.

Nine Mile Point Nuclear Station Administrative Procedure AP-4.2, Control of Equipment Markups, Section 5.5.4 states that the markup person shall maintain positive control over assigned markups to ensure the safety of personnel performing the work. Additionally, Section 6.1.11 states the assigned markup person shall remain aware of, and responsible for, the performance or direction of work within the scope of the markup.

Contrary to the above:

1. On May 21, 1990, the suction valve to feedwater pump #11 was shut under the control of an existing blue markup to support a maintenance activity. The assigned markup person was not informed of this change in equipment status and his markup as required by AP-4.2. This resulted in the feedwater pump being started with the suction valve closed.
2. On June 28, 1990, the NRC resident inspectors identified two components under the control of blue Markup #15270 which were not in the specified configuration as required by the markup or as anticipated by the responsible markup man.

ADMISSION OR DENIAL OF THE ALLEGED VIOLATION

Niagara Mohawk Power Corporation admits to the violation as stated.

THE REASONS FOR THE VIOLATION

The two examples cited as violations of AP-4.2, sections 5.5.4 and 6.1.11 can be attributed to a combination of personnel performance problems and weaknesses in the markup process. The weaknesses in the markup process consequently placed an increased reliance on personnel work practices and communication to maintain positive control over markups. NMPC has performed a series of evaluations regarding the two events described above and the markup program. A summary of the evaluations and the corresponding conclusions is provided below.

THE REASONS FOR THE VIOLATION (CONTINUED)

1. A root cause analysis for the May 21 event was performed in accordance with Site Supervisory Instruction S-SUP-1, Root Cause Evaluation Program, and the Human Performance Evaluation System (HPES) published by the Institute of Nuclear Power Operations. The root cause for this event was determined to be personnel error due to inadequate managerial methods, omitted verbal communications, and poor work practices.

Inadequate managerial methods was a factor because the program utilized for controlling red and blue markups was not adequately defined. This program, described in the Niagara Mohawk Accident Prevention Rules handbook, AP-4.2, and Nine Mile Point Unit one (NMP-1) Operations Department Instruction, N1-ODI-5.06, Markups, permitted the evening Station Shift Supervisor (SSS) to use a blue markup to de-couple Feedwater pump 11 instead of using a red markup, which was the preferred method. Additionally, the procedures did not specifically require the controller to review the markup prior to operating the equipment.

Omitted verbal communications was a factor in that the evening SSS failed to notify the markup man regarding the addition of the feedwater pump suction valve to his existing blue markup. The SSS had assumed responsibility from the controller for making this notification. It was determined that the SSS was distracted from his intentions of notifying the markup man because of other activities requiring his attention. This omission was contrary to the Accident Prevention Rules, Section 9C5.04.

Poor work practices was a factor in that the chief shift operator failed to verify the system alignment against the markup prior to starting Feedwater pump 11 on May 23. He assumed that the original scope of the blue markup was unchanged. As noted above, there was no specific requirement to review the markup prior to operating the equipment.

2. A root cause analysis for the June 28 event was performed in accordance with Site Supervisory Instruction S-SUP-1, Root Cause Evaluation Program, and the Human Performance Evaluation System (HPES) published by the Institute of Nuclear Power Operations. The root cause for this event was determined to be an unauthorized change in the markup configuration. Specifically, the positions of two components were changed without the concurrence of the markup man. Contributing factors to this event were as follows:

Inadequate Managerial Methods: The markup policy did not require the markup man to document changes in component positions and did not specifically require the markup man to verify equipment status.

THE REASONS FOR THE VIOLATION (CONTINUED)

Inadequate Written Communications: The blue markup sheet did not provide the means to document position changes.

Poor Work Practices: The markup man failed to maintain positive control of the markup. The markup man relied on his memory to track the positions of each component listed and each work activity performed under his blue markup. He failed to field verify the configuration of the equipment under the control of his markup.

3. The Independent Safety Engineering Group (ISEG) performed an evaluation in response to a concern that the root cause analysis for the closed feedwater pump suction valve event was incomplete. ISEG determined that the root cause did not confront the issue of bounding the condition (determining if the condition could have existed elsewhere). Based upon a review of the root cause procedures, ISEG determined that the root cause procedure (S-SJP-1) currently in effect does not explicitly address the issue of bounding the condition.

4. ISEG also performed a formal evaluation to determine the cause of the failure to maintain administrative control of plant configuration; specifically control over markups. This evaluation focused on: (1) all related reportable and non-reportable incidents that had occurred at both units since 1985, (2) an evaluation of the analysis of these events and the specified corrective actions for effectiveness in preventing future events, (3) a determination of the root cause for the events, and (4) recommendations for improvement.

ISEG identified three most frequent root causes for the events evaluated. Two of the three most frequent causes were consistent with those identified in the root cause analyses for the May 21 and June 28 events: work practices and communication. The third most frequent cause of the evaluated events was work organization/planning. This was not a factor in either the May 21 or June 28 events and corrective actions were previously implemented to address this cause.

5. Further, Nuclear Quality Assurance Operations performed a surveillance of the markup process utilized at both operating units. This surveillance consisted of a review of applicable procedures, observation of the process in practice, and interviews of personnel at all levels of involvement. They concluded that inconsistencies involving varying levels of control, definition, and guidance complicates the process and impedes compliance. This was attributed to having three governing procedures for the markup process at both units (Accident Prevention Rules, AP 4.2, and ODI 5.06). Similar conclusions were reached by the root cause analysis for the closed feedwater pump suction valve event and the ISEG markup evaluation.

THE CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

1. N1-ODI-5.06 was revised to clarify the conditions under which a blue markup could be applied and specify additional requirements to ensure control of components under a blue markup. This revision of N1-ODI-5.06 specified that blue markups could only be used for minor maintenance, included examples of what constitutes minor maintenance, and required that component positions were verified prior to the operation of equipment under a blue markup.
2. The SSS involved in the May 21 event was disciplined by operations management for failing to notify the markup man of changes to the feedwater system markup.
3. Operations management cancelled the existing list of approved markup men and required markup men to re-qualify based on the new revision to N1-ODI-5.06. In addition, operations personnel were also trained on the new revision.
4. The Operations Superintendent ordered a field verification of all blue markups. No other instances of components in positions other than expected were identified. Additionally, markups were reviewed and blue markups were replaced with red markups, cleared or replaced with yellow tags where appropriate, based on the revision to N1-ODI-5.06.
5. A Lessons Learned Transmittal concerning the May 21 event was issued to the Operations, Maintenance, Fire Protection, Radwaste, and Systems Engineering Departments. The lessons learned transmittal described the event, focused on the personnel errors that contributed to the event, and stressed the importance of adherence to the existing markup procedures.
6. A task force was formed to review the existing markup procedures, practices at other utilities, recommendations from the ISEG evaluation and the root cause analysis, and NRC concerns relating to the markup system for incorporation into a new revision of AP-4.2

Based on assessments of operations and maintenance activities during Test Phase One of the power ascension program, the corrective actions taken to date appear to be satisfactory.

THE CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

The corrective actions remaining include the revision of AP-4.2 and training for all personnel on that revision. This revision will eliminate inconsistencies between the Accident Prevention Rules, the ODIs for both units, and the current revision of AP-4.2. In addition, it will incorporate any recommendations of the task force on markups, and ensure that the markup program is consistently implemented in the future.

THE CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS (CONTINUED)

ISEG's evaluation of the root cause procedures concluded that the new root cause procedure, NDP-16.01, Root Cause Evaluations will require addressing the issue of bounding of the condition. In addition, the procedure requires the Root Cause Evaluation Team Leader to specifically address "other susceptible items" when determining the corrective actions. This procedure will supersede S-SUP-1 on September 14, 1990, and will address the concern of incomplete root cause analyses in the future.

THE DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Niagara Mohawk will be in full compliance upon the completion of the revision to AP-4.2 and the training of personnel. These actions will be completed by November 30, 1990.