

April 10, 1996

Mr. B. Ralph Sylvia
Executive Vice President - Generation Business Group
Niagara Mohawk Power Corporation (NMPC)
Nine Mile Point Nuclear Station
P. O. Box 63
Lycoming, NY 13

SUBJECT: NRC COMBINED INSPECTION REPORT NOS. 50-220/95-24 AND 50-410/95-24

Dear Mr. Sylvia:

This letter acknowledges receipt of your letter dated February 22, 1996, which was in response to a Notice of Violation (Notice) contained in the subject inspection report, dated January 23, 1996. The Notice identified two distinct violations. The first violation dealt with the failure of Unit One to adequately identify and correct deficiencies associated with Agastat relays; the second violation addressed the failure of your emergency response organization to declare a site area emergency within a timely manner during your off-year annual emergency preparedness exercise.

We reviewed your response to the corrective action violation on the Agastat relay in accordance with NRC Inspection Manual (NIM) Procedure 92903, "Followup - Engineering". Our preliminary assessment indicated that you did not discuss the corrective actions for several identified root causes of the problem. On March 14, 1996, Mr. L. Cheung, of this office, discussed this matter with Messrs. T. Roman and A. Vierling of your staff in a teleconference. They indicated that they would revise your response to include appropriate corrective actions for all stated root causes. We request your additional response within 20 days of the date of this letter.

Also, we reviewed your response regarding the emergency preparedness issue in accordance with NIM Procedure 92904, "Followup - Plant Support." Our preliminary assessment indicated that your response was timely and acceptable, and that your apparent root cause of failure to properly use the procedure for the classification of emergency conditions is correct. The additional training given to the individuals involved, as well as training provided to the other emergency response team members involved in the classification process, appears to be appropriate. The NRC staff will continue to periodically monitor your emergency preparedness drills. In addition, with the assistance of emergency preparedness specialists from Region I, we will observe your next annual exercise scheduled for May 15, 1996, to determine if the actions to prevent recurrence were adequate.

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Mr. B. Ralph Sylvia

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A response to this letter is required. Thank you, thus far, for informing of us of the corrective and preventive actions documented in your letter. Your cooperation with us is appreciated.

Sincerely,

Original Signed By:

Richard J. Conte, Chief
Projects Branch 5
Division of Reactor Projects

Docket Nos. 50-220
50-410

cc w/enclosure:

R. Abbott, Vice President-Nuclear Generation
C. Terry, Vice President-Nuclear Engineering
M. McCormick, Vice President - Safety Assessment and Support
N. Rademacher, Unit 1 Plant Manager
J. Conway, Unit 2 Plant Manager (acting)
D. Wolniak, Manager, Licensing

cc w/cy of Licensee's Response Letter:

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Mr. B. Ralph Sylvia

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Distribution w/cy of Licensee's Response Letter:

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RICHARD B. ABBOTT
Vice President
Nuclear GenerationFebruary 22, 1996
NMPIL 1035U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE:	Nine Mile Point Unit 1	Nine Mile Point Unit 2
	Docket No. 50-220	Docket No. 50-410
	<u>DPR-63</u>	<u>NPF-69</u>

Subject: RESPONSE TO NOTICE OF VIOLATION
NRC Inspection Report No. 50-220/95-24 and 50-410/95-24

Gentlemen:

Niagara Mohawk Power Corporation's response to the Notice of Violation contained in the Inspection Report dated January 23, 1996 is enclosed as Attachments A and B.

With regard to the delay in classification of a Site Area Emergency during the 1995 annual exercise, we share your concern that this is the second consecutive annual emergency preparedness exercise in which we have failed to properly classify the event, notwithstanding that the causes of the two failures were different.

The 1994 misclassification was due to the failure to recognize an error in the calculated release rate data as being inconsistent with known plant conditions, which resulted in an overclassification. The 1995 misclassification was due to the misuse of the procedure which resulted in failure to reclassify the emergency situation in a timely manner.

We have adjusted our training program and drill schedule for 1996 to include five drills (one for each Emergency Response Organization Team) to enhance our skills in implementing our Emergency Plan. Additionally, we are maintaining emphasis on Emergency Plan implementation in our operator continuing training program.

Niagara Mohawk is committed to achieving excellent performance in the implementation of our Emergency Plan. We expect that our corrective actions and continuing training efforts in this area will enable us to achieve this goal.

Sincerely,

Richard B. Abbott
Vice President - Nuclear Generation

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RBA/kap
Enclosures

xc: **Regional Administrator, Region I**
Mr. B. S. Norris, Senior Resident Inspector
Mr. L. B. Marsh, Director, Project Directorate I-1, NRR
Mr. G. E. Edison, Senior Project Manager, NRR
Records Management

ATTACHMENT A

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT UNIT 1
DOCKET NO. 50-220
DPR-63

"RESPONSE TO NOTICE OF VIOLATION," AS CONTAINED IN
INSPECTION REPORT 50-220/95-24 AND 50-410/95-24

VIOLATION 50-220/95-24-01

10 CFR 50, Appendix B, Criterion XVI, Corrective action, requires measures to be established to assure that conditions adverse to quality, such as deficiencies, defective material and equipment, and nonconformances are promptly identified and corrected.

Contrary to the above, measures were not established to ensure that conditions adverse to quality were promptly identified and corrected in that:

1. Before February 7, 1995, 68 severely-degraded, normally-energized (NE) Agastat GP series relays at Unit 1 were not identified and replaced after more than 14 years of service, although the service life of these relays was only 4.5 years. NMPC was informed of these relay problems on several occasions; and
2. Before February 7, 1995, six non-safety related Agastat 7000 series time-delay-relays, that were used for safety-related functions at Unit 1, were not identified and replaced after more than 20 years in service. NMPC was informed of this relay problem in 1987.

This is a Severity Level IV violation (Supplement I). This applies to Unit 1 only.

I. THE REASON FOR THE VIOLATION

Niagara Mohawk agrees that measures to assure that conditions adverse to quality, such as deficiencies, defective material and equipment, and nonconformances were not promptly identified and corrected.

A root cause analysis was performed in accordance with Nuclear Interface Procedure NIP-ECA-01, "Deviation/Event Report," for each of the two occurrences. Since the root causes for the two occurrences are not the same, they will be addressed separately.

A. Agastat GP Series Relays

The cause for not replacing the 68 normally energized (NE) Agastat GP relays earlier was attributed to an incorrect aging calculation performed by Wyle Laboratories in 1988. The cause of the failure to detect this error has been determined to be a lack of a thorough review of the Wyle report due to cognitive personnel error by NMPC and the fact that Amerace, the relay manufacturer, concurred with the incorrect activation energy used in the calculation.

In March 1984, NRC issued Information Notice (IN) 84-20 to alert nuclear utilities of accelerated thermal degradation of NE Agastat GP relays. Based on test data obtained by GE, the service life of NE Agastat GP relays was determined to be 4.5 years. In response to 10 CFR 50.49 and IN 84-20, Niagara Mohawk contracted Wyle Labs to perform an Equipment Qualification Deficiency Resolution for these relays. Wyle was to specifically address energized life concerns of these relays. Wyle Lab issued a report setting the qualified energized life of these relays at 26 years and de-energized life at 40 years. Based on this report, the service life for NE Agastat GP relays was incorporated in the Equipment Qualification (EQ) program.

Also, in January 1988, NMPC issued a position paper which stated, "The surveillance and maintenance programs for mild environment equipment are adequate without replacements based on calculated qualified life durations." This position paper in conjunction with the Wyle report provided the justification for the functional capabilities of the Agastat GP series relays beyond the calculated service life. Subsequent review of industry events regarding relay failures due to relay age and thermal degradation were analyzed based on this position paper which stated that relay replacements were not necessary.

In 1992, NMPC was informed of an age related failure of Agastat GP series relays at the James A. Fitzpatrick Nuclear Power Station as documented on INPO Operating Experience OE 5063. As a result of the OE notice, DER 1-92-0500 was initiated to investigate the event. The disposition to the DER was not thorough enough because the disposition focused on another Agastat problem of post-mold shrinkage. The root cause of not adequately addressing this event was inadequate management oversight. The assigned dispositioner had inadequate experience and did not properly review this event, and subsequent review by supervision failed to ensure the Agastat relay concerns identified in OE 5063 were addressed.

Two other Operating Experiences concerning age-related failures, OE 4040 from Turkey Point Unit 3 dated July 17, 1990 and OE 4615 from the Perry Plant dated May 28, 1991 were found during our OE investigation of Agastat relay problems in 1995. There is no evidence that these events had been entered into the NMPC OE review process. The procedure in effect at that time AP-4.3.2, "Operating Experience Assessment," did not require low level OE reports to be evaluated.

On February 7, 1995, while replacing two NE GP relays at NMP1, technicians observed that both relays were severely degraded. Investigation into this condition identified that the service life for NE Agastat GP relays, calculated by Wyle Labs, was in error. The activation energy used by Wyle Labs in their calculation was found to be incorrect. NMPC had not detected the error during its review and acceptance of the Wyle Lab report in 1988 or in 1992 during review of OE 5063.

B. Agastat 7000 Series Relays

Information Notice (IN) 87-66 was issued by the NRC in December 1987, and stated that commercial grade Agastat 7000 series relays were not suitable for safety-related applications. IN 87-66 recommended replacing these relays with nuclear grade Class 1E Agastat E7000 series relays. NMPC issued a Problem Report (PR 1529) in May 1989 to address IN 87-66. The Problem Report disposition stated that no Agastat 7000 series safety-related relays were used at NMP1. The designer who performed the review used the panel layout drawings, for the control room and auxiliary control room only, which contain the Bill of Materials for each panel. The panel layout drawings were not up to date, because a 1973 modification which added six Agastat 7000 series relays, only updated the electrical connection drawings with the relay make and model number, but did not update the panel layout drawings. This was not in compliance with NMPC drawing conventions. Therefore, the cause for not identifying and replacing the six safety-related Agastat 7000 time-delay relays with nuclear grade Agastat E7000 series was the panel layout drawings were not up to date, due to personnel error.

In May 1992, NMPC issued DER 1-92-2016 to close out an open item on IN 87-66 from the Nuclear Commitment Tracking System (NCTS) database. IN 87-66 and the Agastat 7000 series issue were re-visited. Another designer performed an independent review looking for Agastat 7000 series relays on the control room and auxiliary control room panel layout drawings. This review was more thorough than the 1989 review because it also included panels outside the control complex. Consequently, two safety-related relays were found outside the control complex. However, the six Agastat 7000 series time delay relays in the auxiliary control room were missed again due to the panel layout drawing not being up-to-date.

In March 1995, while resolving the Agastat GP series relay issue under DER 1-95-0275, NMPC located six (6) safety-related Agastat 7000 series relays in the Master Equipment List (MEL) database, which was developed under the Design Basis Reconstitution (DBR) effort in 1994. Plant walkdowns were initiated to locate Agastat 7000 safety-related relays. No additional relays were found as a result of this walkdown. These Agastat 7000 series relays were removed and replaced by six (6) nuclear grade E7000 series relays during the Spring 1995 refueling outage.

In 1989 and 1992, the main tool available to locate relays by make and model number was the panel layout drawings for each panel, where today the main source for this information is located on the computerized MEL. The MEL was developed using the

various drawings, walkdown results, and databases, and did not strictly rely on panel layout drawings.

II. CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED

A. Agastat GP Series Relays

Based on the February 7, 1995 incident, NMPC initiated a normal plant shutdown on February 8, 1995, since this degraded condition could have affected many NE relays in the Reactor Protection System. During the plant shutdown (coincident with the refueling outage), NMPC replaced all affected relays. Sixty-four relays were replaced in the Analog Trip System (ATS) cabinets and four NE Agastat GP relays were replaced in the Anticipated Transient Without Scram (ATWS) system.

B. Agastat 7000 Series Relays

Based on the February 7, 1995 event, NMPC issued DER 1-95-0773 to resolve the Agastat 7000 series relay problem. The six 7000 series relays were replaced with nuclear grade E7000 series relays. Engineering subsequently revised drawings, calculations, and updated the MEL database to reflect the E7000 relays.

III. ACTIONS TAKEN TO PREVENT RECURRENCE

A. Agastat GP Series Relays

1. NMPC initiated an effort to determine if other normally energized EQ equipment had similar problems (equipment operated beyond qualified life). The EQ files for the following equipment were reviewed: 1) other types of NE relays, 2) NE solenoid operated valves, and 3) certain NE electric motors. The results of this effort verified that the qualified lives were correct and that no other EQ equipment had been operated beyond its qualified life.
2. The Equipment Qualification Required Maintenance Program (EQRM) was revised to reflect the correct qualified service life. The service life of the newly installed normally energized Agastat GP series relays as well as the normally de-energized relays has also been incorporated into the Preventative Maintenance and Surveillance Test (PMST) database to facilitate tracking the end of the service life.

3. NMPC's failure to properly evaluate operating experience concerns was reviewed with Engineering Department personnel. The management expectation of assigning Engineering personnel with adequate experience and providing the necessary management oversight for operating experience concerns was emphasized.

B. Agastat 7000 Series Relays

1. Since 1994, as a result of the DBR program, NMPC has been using the MEL as the official record for electrical equipment. The panel layout drawings will be de-controlled by December 31, 1996.
2. Agastat E7000 series relays have been entered into the PMST database to facilitate tracking the end of their service life.
3. The Agastat 7000 series relay root cause will be discussed with appropriate Unit 1 Engineering personnel and management expectations of performing walkdowns, updating the correct drawings, and thoroughness of design reviews will be re-emphasized.

This action will be complete by March 29, 1996.

IV. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance with 10 CFR 50, Appendix B, Criterion XVI, Corrective Action was achieved on April 1, 1995 when relay replacement was completed and tested satisfactorily for the Agastat GP and E7000 series relays.

ATTACHMENT B

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT UNIT 1 AND UNIT 2
DOCKET NO. 50-220/50-410
DPR-63, NPF-69

"RESPONSE TO NOTICE OF VIOLATION," AS CONTAINED IN
INSPECTION REPORT 50-220/95-24 AND 50-410/95-24

VIOLATION 50-220/95-24-04 and 50-410/95-24-04

During an NRC inspection conducted from October 15 through November 15, 1995, violations of NRC requirements was identified. In accordance with the NRC "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG 1600, (60 FR 34381; June 30, 1995), the violation is listed below:

- 10 CFR Part 50, Appendix E, Section IV, specifies the requirements for the contents of the emergency plan for each licensee. Subsection IV.B details the requirements for assessment actions; specifically, the means to continually assess the magnitude impact of the release of radioactive materials. This assessment is to be the basis for determining the emergency action level (EAL) that is used as criteria for notifications to state and federal agencies. In addition, the EAL is to be used to determine when and what type of protective measures should be considered to protect the public health and safety. The EALs shall be based on inplant conditions and instrumentation of onsite and offsite monitoring.

Section IV.F, specifies the requirements for emergency preparedness training programs. The training, and the conduct of drills and exercises, is to ensure that employees of the licensee are familiar with their specific emergency response duties. Unique training is required for all personnel responsible for accident assessment, including control room shift personnel.

NMPC procedure EPIP-EPP-02, "Classification of Emergency Conditions at Unit 2," Section 2.1, requires the Station Shift Supervisor (SSS), to maintain awareness of any abnormal plant condition and to evaluate the need to classify the event. Section 2.2 requires the Site Emergency Director (SED), upon activation of the Technical Support Center (TSC), also is to maintain awareness of the plant conditions and to reclassify the event as necessary.

Contrary to the above:

During the NMPC emergency preparedness exercise conducted on October 24, 1995, both the SED, in the TSC, and the SSS, in the Unit 2 Simulator Control Room, failed to recognize that the simulated plant conditions met the criteria for EAL 3.4.1 (reactor

water cleanup system isolation resulting in a release pathway outside primary containment). The failure to recognize the EAL resulted in the failure to declare a Site Area Emergency until seventeen minutes after the EAL criteria had been met.

This is a Severity Level IV violation (Supplement VIII).

I. THE REASON FOR THE VIOLATION

An apparent cause analysis was performed in accordance with Nuclear Interface Procedure NIP-ECA-01, "Deviation/Event Report." The cause for the failure of the SSS and the SED to recognize that simulated plant conditions met the criteria for EAL 3.4.1 was the failure to properly apply the procedure for the classification of emergency conditions.

On October 24, 1995 at 1000, with the exercise in progress and the Station at an "Alert" status, a malfunction was entered into the simulator in accordance with the exercise scenario. This was to have resulted in plant indications of an unisolable reactor coolant leak from the reactor water cleanup system outside the primary containment, and thus, was intended to be the establishment of plant conditions in which the SSS was to have declared a Site Area Emergency (SAE) in accordance with EAL 3.4.1. However, an error in the simulator computer instructions to implement the scenario resulted in the closing of the Reactor Water Cleanup System (WCS) valve that was intended to remain open and provide the WCS isolation failure. At that time, the lead controller instructed the operating crew to disregard the closed valve indication and proceed as if the valve had failed open. Subsequently, the simulator operator entered the correct simulator instruction, resulting in correct indication of the failed open valve. Once the valve was failed open, numerous high temperature and radiation alarms should have activated, giving indications of a WCS system leak outside primary containment due to a failed valve bonnet. However, an error in the simulator computer code caused only one high area temperature and one radiation alarm. This condition was not corrected by the lead controller.

Between 1000 and 1007 hours, the SSS assessed the plant conditions as presented to him, including evaluating whether a fire or other event could have caused a single high temperature alarm. At 1007, the SSS correctly diagnosed plant conditions as a WCS failure to isolate and a leak outside primary containment.

This information was provided to the SED at 1008. However, the SSS and SED focused attention on the applicability of EAL 4.1.1 (Primary system discharging into the reactor building with high reactor building temperatures in more than one area) and neglected to review other EALs (specifically 3.4.1) that may apply to the plant conditions. The SSS and SED continued to monitor plant conditions, anticipating a second reactor building high temperature alarm which would have satisfied the conditions of EAL 4.1.1. However, additional alarms never came in due to the simulator computer code error.

The SSS and SED did not discuss whether the current plant conditions met other EALs. The reason for this is that neither the SSS or the SED effectively reviewed the entire EAL matrix for applicability to current plant conditions.

At 1018, the lead controller asked the SSS what the plant conditions were in order to verify that the SSS was not misled by the earlier errors in the simulator. The SSS stated that a WCS system failure to isolate with a leak outside primary containment had occurred and a second temperature alarm was anticipated. The lead controller then prompted the SSS with the scenario contingency message stating that the conditions for EAL 3.4.1 were met, and a SAE should be declared. The SSS called the SED and recommended that an SAE be declared based on EAL 3.4.1. Subsequent discussion among the SSS, SED, and CED resulted in a SAE declaration at 1023.

In summary, the SSS and SED failed to properly use the EAL procedure and recognize that plant conditions met the criteria for a SAE. In addition, the cause of the simulator instructions error was typographical, and the error in the simulator computer code was a programming error. The first of the simulator errors could have been prevented had the scenario been validated against the final typed version of the simulator instructions. The computer code error would not have been discovered by validation, and was a fortunate discovery during this exercise.

II. CORRECTIVE ACTIONS AND RESULTS ACHIEVED

- A. The SSS was removed from shift duties for additional training in order to ensure the adequacy of his knowledge on the EALs, EAL Technical Bases, and the importance of reviewing all EALs for applicability prior to declaration.
- B. The SED was remediated to ensure the adequacy of his knowledge on the EALs, EAL Technical Bases, and the importance of reviewing all EALs for applicability.
- C. This misclassification event was immediately communicated to all other ERO Teams.

III. ACTIONS TO BE TAKEN TO PREVENT RECURRENCE

- A. All five emergency response team SEDs, CEDs, and TSC Technical Data Coordinators (TDCs) took part in and successfully completed EAL classification mini-drills. This included an actual shift crew and utilization of the simulator and emergency facility communications, and focused on assessing plant conditions and applying them to the EAL procedure to determine proper EAL classifications. This action is complete.

- B. The TSC TDCs have been trained on the EALs and their technical bases. This provides additional personnel to assist in the classification process. This action is complete.
- C. Changes to the CED, SED, and TDC qualification and continuing training program with respect to the EAL procedure use and technical bases will be made by May 1, 1996.
- D. Procedure EPMP-EPP-04, "Emergency Drills and Exercises" will be revised to strengthen the validation of drill and exercise scenarios prior to use. This will be completed by March 1, 1996.

IV. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance with EPIP-EPP-02 was achieved on October 24, 1995, when the SAE was declared during the exercise.