U.S. NUCLEAR REGULATORY COMMISSION REGION I

Report Nos. <u>50-220/91-01</u> 50-410/91-01

Docket Nos. <u>50-220</u> <u>50-410</u>

License Nos. <u>DPR-63</u> NPF-69

Licensee: Niagara Mohawk Power Corporation

Facility Name: <u>Nine Mile Point Nuclear Station Units 1&2</u>

Inspection At: Scriba and Syracuse, New York

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Inspection Conducted:

January 7-11, 1991

Inspectors:

J. F. Lara, Reactor Engineer, Plant Systems Section, EB, DRS

R. Bhatia, Reactor Engineer, Plant Systems Section, EB, DRS

1/30/91

date.

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Approved by:

C. J./Anderson, Chief, Plant Systems Section, Engineering Branch, DRS

<u>Inspection Summary</u>: Routine announced inspection on January 7-11, 1991 for Nine Mile Units 1&2. The areas inspected included review of the licensee's control of design, design changes, and permanent and temporary modifications. Also included within the scope of this inspection was the engineering organization, staffing, quality assurance, training, and management support.

<u>Results</u>: Of the areas inspected, one non-cited violation (NCV) was identified pertaining to the lack of Station Operations Review Committee review of a Unit 1 plant modification as required by site procedures. Engineering support to the units in the other inspection areas was determined to be adequate.

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DETAILS

- 1.0 Persons Contacted
- 1.1 Niagara Mohawk Power Corporation
 - Baker, D., Program Director Unit 2 Licensing
 - * Bebko, J., Engineering Performance Services
 - * Boyer, L., Administrative Staff
 - * Dooley, M., Regulatory Compliance
 - * Francisco, P., Manager, Licensing
 - * Gresock, G., Manager, Technology Services
 - * Klosowski, L., Nuclear Design, Unit 1
 - * Kroehler, J., Manager, QA Engineering McMahon, T., Electrical Design, Unit 1
 - * Pike, D., Plant Evaluation
 - * Rademacher, N., Executive Nuclear VP Asst. Sandwick, D., Project Management, Unit 1
 - * Spadafore, J., ISEG
 - * Spagnoletti, N., Program Director Unit 1 Licensing Sullivan, J., Project Management, Unit 2
 - * Terry, C., V.P. Nuclear Engineering
 - * Vaura, L., MATS
 - * Ward, K., Nuclear Design, Unit 2
 - * Wilczek, S., Nuclear Support
 - * Wolniak, D., Licensing Support Yaeger, B., Engineering Manager, Unit 1
- 1.2 U. S. Nuclear Regulatory Commission (NRC)

Cook, B., Sr. Resident Inspector

* denotes those present at exit meeting held on January 11, 1991

2.0 <u>Introduction</u>

The objective of this inspection was to ascertain whether design changes and modifications are performed in accordance with the requirements and commitments specified in the facility's Technical Specifications (TS), NRC rules and regulations, Safety Analysis Report, and the Quality Assurance program. In addition, the inspectors also assessed the engineering and technical support provided to Nine Mile Point Units 1&2 and the associated interfaces between the various offices.

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The above objectives were accomplished through the review of plant design changes and modifications (including temporary modifications). The inspectors also interviewed members of the licensee's engineering management and staff throughout the inspection period.

- 3.0. Design Changes and Modifications (MC 37700 and 37828)
- 3.1 Administrative Controls For Design Changes and Modifications

<u>Scope</u>

The inspectors reviewed the licensee's program for initiating and implementing plant design changes and modifications to verify the following elements:

- * Process established for ensuring that modifications are reviewed and approved by onsite review organizations.
- * Administrative guidelines established for ensuring design changes and modifications are controlled by approved procedures.
- Requirements for the establishment of post-modification tests with provisions
 for appropriate review of results.
- * Means for ensuring station procedure changes are made prior to the affected system being declared operable.
- * Means for ensuring marked-up copies of as-built drawings are distributed prior to declaring the modified system operable.
- * Appropriate preventive maintenance and in-service inspection and test programs are properly updated when appropriate.
- * Requirements for ensuring that installation of modifications conform with Design Change Packages.

Findings

The licensee's program for controlling plant design changes and modifications is described in several procedures. These procedures include the following:

- * AP-3.4.1, "Station Operations Review Committee"
- * AP-6.0, "Modification/Simple Design Change Program"
- * NEL-027, "Design Verification"
- * NEL-200, "Plant Modifications"

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NEL-301, "NMP1 Design Changes to Plant Configuration or Modification"

NEL-350, "NMP2 Design Change Control Program"

NEL-401, "Design Change Initiation"

NEL-415, "10CFR 50.59 Safety Evaluations - Preparation and Control"

The above procedures provided administrative guidelines and controls for ensuring a review of all plant design changes and modifications to ensure that the changes do not involve an unreviewed safety question. Plant modifications are classified as either a modification or a simple design change. Modifications are typically multi-disciplined and require the establishment of modification teams to coordinate and control the plant change. Simple design changes are typically single disciplined with a narrow scope. Each plant change is evaluated via a 10CFR 50.59 determination checklist to determine if the change requires a detailed safety evaluation. A safety evaluation is required if the change affects the plant as described in the safety analysis report. In either method of implementing the change, a technical review is required prior to implementation.

The inspectors interviewed several members of the licensee's technical staff to ascertain their understanding of the modification process. Discussion indicated that they were knowledgeable of the procedural requirements and guidelines. Though the above procedures provided the guidelines for initiating and implementing plant modifications, the inspectors found the overall modification program at times difficult to follow due to the various procedures involved in the process with no one overall procedure describing the process. The inspectors concluded that despite the numerous procedures involved in the modification process, plant changes were nevertheless being implemented in accordance with the procedures.

<u>Conclusions</u>

The licensee has established procedures for ensuring that plant design changes and modifications are performed in a controlled manner. Adequate measures are in place to provide for technical reviews, independent verifications, approval, proper installation, and post-modification testing. The review and approval process ensure that plant changes are evaluated to determine if an unreviewed safety question is involved as required by 10CFR 50.59.

3.2 Design Changes and Modification Program Implementation

Scope

The inspectors reviewed selected design changes and modifications for Units 1 and 2. The modifications and their supporting documentation were evaluated using the criteria specified in Section 3.1 of this report. The inspectors reviewed the design packages, .

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10CFR 50.59 determinations, safety evaluations, installation plans, and other supporting documentation such as post-modification test results. Where necessary, the inspectors interviewed the responsible engineers for the subject modifications. The inspectors also verified the as-built configuration of installed modifications.

Findings

The following randomly selected modification packages were reviewed to evaluate the implementation of modification program requirements and the technical adequacy of the design.

(*) Installation verified by NRC inspection.

<u>Unit 1</u>

- *(1) Modification N1-89-176 replaced the 125 Vdc motor operator for the drywell air cooler cooling water isolation valve 70-94.
- *(2) Modification N1-89-210 added fuses to RPS Bus 11 (Circuit 12) and RPS Bus 12 (Circuit 7) to provide additional isolation.
- *(3) Modification N1-89-253 corrected RPS Bus 11 and 12 wiring/fusing deficiencies.
- *(4) Modification N1-89-208 connected the safety related instrument air system with a non-safety air system to supply the inner track bay door air seal.
- (5) Simple Design Change PC1-013-90 isolated the non-safety air compressor from the safety related instrument air system which serves the inner track bay door air seal (Item 4 above).
- (6) Simple Design Change SC1-017-90 provided a mechanical stop to protect valve stem for valves 26-01 through 26-16.

<u>Unit 2</u>

- *(1) Modification PN2Y88MX174 modified the EDG starting circuit.
- *(2) Modification N2-89-065 rewired the starting seal-in feature of the Service Water Pump operating coil.
- (3) Modification PN2Y90MX054 added two weld pads on the interior of the MSIV AOV-6C to ease the mating of the main disc with the seat and reduce the potential of seat leakage.
- .(4) Simple Design Change PC2-005-90 redesigned the instrument air supply to the Spent Fuel Pool Filters Bypass Valve 2SFC-FV113.

(5) Simple Design Change SC2-0025-90 provided engineering guidance to set the trip settings of selected molded case circuit breakers.

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The overall design of the modifications was found to be adequate. The modifications reviewed were found to be well organized, complete and in accordance with the applicable procedures. Materials, processes, parts and equipment were properly identified and suitable for application. Applicable design inputs were documented correctly into the design. The design considerations included evaluation of technical specifications, ALARA considerations, equipment qualification, fire protection, fuel analysis and control room habitability study review. -The associated safety evaluations were observed to have been marked-up to reflect the as-built configuration. With the exception of one modification (described later in this section), modifications and associated safety evaluations which required review by SORC were determined to be adequate.

The inspectors verified the installation of six (6) modifications and the establishment of post modification test requirements for the modifications denoted with an asterisk (*) above. Review of records indicated that the installation and tests were performed correctly and in accordance with the procedures and installation plans as described in the modification package.

The team reviewed Unit 1 modification N1-89-208 which upgraded the reliability of the air supply system which serves the inner track bay door's inflatable seal. Previously, air was supplied to the seal by house air or a dedicated compressor, neither of which was safety-related. The modification connected the safety related instrument air system to supply the door seal through newly installed piping. The inspectors reviewed the modification documentation including the safety evaluation (89-024) which concluded that an unreviewed safety question was not involved. In accordance with NEL-415, safety evaluations are required to be reviewed by the Station Operations Review Committee (SORC) if the modification is determined to affect nuclear safety. The procedure provides guidelines for determining whether nuclear safety is affected. These guidelines specify that if the change involves safety related equipment or is classified as Q, the change is deemed to affect nuclear safety. Since the modification affected a safety related system, the associated safety evaluation should have been reviewed by SORC in accordance with NEL-415. Review of the associated safety evaluation by the inspectors revealed that no SORC review was initiated since it was incorrectly determined not to affect nuclear safety. It should be noted that Unit 1 Technical Specification requirements were satisfied in that appropriate technical reviews were performed.

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As a result of this finding, the licensee submitted the modification to SORC for review on January 11, 1991. The modification was concluded not to involve an unreviewed safety question. The licensee also initiated a review of past modification safety evaluations to verify that required SORC reviews were accomplished in accordance with procedural requirements. At the completion of this inspection, the licensee had completed a review of Unit 1 safety evaluations and a Unit 2 review was continuing. No similar cases were identified.

This finding would normally be classified as a Severity Level V violation. However, the violation is not being cited because the criteria specified in 10CFR 2, Appendix C, Section V.A. of the Enforcement Policy was satisfied. Specifically, this violation is a Severity Level V and the licensee initiated prompt corrective actions prior to the end of the inspection. Therefore, this violation constitutes a non-cited violation (50-220/91-01-01).

<u>Conclusions</u>

With one exception, the modification packages and associated safety evaluations were determined to be adequate and addressed the essential elements to conclude that the plant change did not involve an unreviewed safety question. Plant changes were reviewed and approved in accordance with technical specification and procedural requirements with the exception of a Unit 1 modification. Modification N1-89-208 was installed without proper review by SORC to verify that no unreviewed safety question was involved as required by procedures.

4.0 <u>Engineering and Technical Support</u>

4.1 Organization/Staffing/Management Support

Scope

The inspectors reviewed the licensee's organization structure and staffing levels to ascertain the level to which they contribute to the technical support of the plant. Throughout the inspection, the inspectors interviewed several engineering staff members and management personnel to evaluate the management involvement in the resolution of technical problems.

Findings

In October 1990 the licensee implemented a reorganization plan affecting the various engineering groups within the Nuclear Engineering and Licensing (NE&L) department. The Vice President of Nuclear Engineering now has six (6) groups under his direction. These include:

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- * Unit 1 Engineering
 - * Unit 2 Engineering
 - * Installation Services
 - Technology Services
 - * Engineering Performance Services
 - * ISEG

Under each respective unit engineering manager is a design group which is responsible for the development of plant design changes. Also under the direction of the responsible unit engineering manager is a site engineering group which provides direct representation at each unit to establish an interface with the plant technical staff. The total engineering budgeted staff for Unit 1 and 2 is 123 and 138, respectively, including contractor support. The engineering management indicated the continuing goal of reducing the number of design contractors for both units. Both units also have a site technical support group consisting of system engineers. This staff is involved in the resolution of operational problems including those resulting from surveillance tests. The respective technical staff consists of 43 budget positions for each unit.

Conclusions

The reorganization and established interfaces should provide an effective means for assuring adequate communication channels between the Salina Meadows office and the sites. The site engineering group stationed at each plant provides responsible representatives for the Salina Meadows engineering department. This enables the engineering staff to be in the forefront of emerging technical issues and problems. The inspectors did note that due to the recent reorganization, clear lines of responsibilities are still being defined to effectively utilize personnel in the support of the units.

4.2 Engineering Input To Nonconformance Reports (NCR)

Scope

The inspectors selected several nonconformance reports (NCR) to ascertain the degree of engineering support in their resolution. The NCRs were also evaluated to determine whether the dispositions were technically correct and based on established requirements.

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<u>Findings</u>

The NCRs listed below were reviewed to ascertain the level to which the various engineering groups were involved in the dispositions:

NCR 1-90-0121 pertained to a secondary building supply breaker which failed to meet - long-time overcurrent trip test requirements.

NCR 1-90-0117 pertained to the replacement of components in the battery charger circuit to eliminate voltage oscillations.

The dispositions of the above NCRs were found to be adequate and in conformance with requirements. Where required, the dispositions also addressed elements such as replacement parts, applicable procedures and drawings, vendor manuals, and postmaintenance testing requirements.

<u>Conclusions</u>

The dispositions provided by engineering for the above NCRs were determined to be technically correct and demonstrated a good understanding of applicable procedural and design requirements.

4.3 **Quality Assurance Audits**

<u>Scope</u>

The inspectors reviewed selected QA audits performed pertaining to engineering activities. The purpose was to ascertain the degree to which the audits addressed the functions of the engineering groups, the significance of any findings, and to review associated corrective actions.

Findings

The Quality Assurance Engineering group has the responsibility for implementing QA functions associated with engineering and design. This group provides surveillances of nuclear engineering activities as well as review of engineering design input and outputs when required to assure that appropriate acceptance criteria are adequately specified.

The inspectors reviewed the following two QA audit reports addressing engineering activities:

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QA Audit Report 90005 RG/IN: Nuclear Engineering & Licensing Activities (NMP-1 and NMP-2) - July 1990. Audit 90005 focused on the modification process and other selected engineering activities. It concluded that Nuclear Engineering and Licensing (NE&L) had not been totally effective in carrying out assigned responsibilities and resulted in the issuance of five (5) Corrective Action Requests (CAR). Weaknesses identified included errors in previous contract engineering work, administration of Problem Reports, NE&L training, drawing legibility and updating of drawings to reflect modified plant configuration.

QA Audit Report 90013 RG/IN: SRAB B Operations and Technical Support November 1990. Audit 90013 focused on the functions of the Operations and Technical Support Departments. It included a review of temporary modifications procedures. One CAR was identified pertaining to the installation of temporary modifications.

The audits were found to be comprehensive in addressing essential NE&L functions and responsibilities. Strengths, problem areas and recommendations were identified throughout the report.

Conclusions

The Quality Assurance audits were found to be comprehensive and addressed various elements of the engineering organization. Corrective Action Requests were initiated by the QA organization. These CARs require engineering response to resolve the deficiencies.

4.4 <u>Technical Training</u>

Scope

The licensee's program for providing training to the technical staff was reviewed to determine the program enhancements since this area had been previously identified as a weakness by the NRC. This effort was accomplished through the interview of engineering management and members of the technical staff.

Findings

The Nuclear and Licensing Department (NE&L) training program has been previously identified as a programmatic weakness by the NRC. In response, the licensee implemented an initial training program to address the identified weaknesses. The Critical Training Program was completed in 1990. Presently, the licensee is completing a training needs assessment to determine the types of continuing technical training required. The program will encompass approximately 74 training areas.

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These areas include nuclear plant systems, safety analysis report, technical specifications, and other specialized training. Members of the technical staff will attend the various courses depending on the specific job requirements. To ensure effective implementation of the program, the licensee has established attendance goals for the training classes. Though the program seems to be thorough and complete, the effectiveness through implementation cannot be evaluated at this time. The licensee stated that the program is in the final stages of review with expectations of internal approval by the end of January 1991.

<u>Conclusions</u>

The program developed to address training needs of the technical staff seems to be comprehensive with much forethought. However, effectiveness of the program is indeterminate since it has yet to be formally approved and implemented. The establishment of attendance goals is a positive step toward assuring that technical training remains a high priority.

5.0 <u>Exit Interview</u>

At the conclusion of the inspection on January 11, 1991, the inspectors met with the licensee representatives denoted in Section 1.0. The inspectors summarized the scope and results of the inspection at that time.

At no time during this inspection was written material given to the licensee.

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