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SUBJECT: Outlines proposed program for integration of engineering evaluations & plant improvements resulting from current & anticipated regulatory requirements & reliability improvement needs.

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NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

October 19, 1983

Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

Dear Mr. Vassallo:

This letter is a follow-up to discussions between members of the Nuclear Regulatory Commission staff and Niagara Mohawk Power Corporation representatives held on September 7, 1983 in Bethesda, Maryland. Its purpose is to outline a proposed program for the integration of engineering evaluations and plant improvements resulting from current and anticipated regulatory requirements and from plant maintenance and reliability improvement needs. The proposed program is described in Enclosure 1 and is submitted for your review.

As discussed, there is a profusion of regulatory issues, Niagara Mohawk-initiated plant improvements and safety assessment tasks which are presently being handled independently and which compete for engineering and capital resources. Many of these issues and their resolution are interdependent and should be evaluated in a logical, integrated manner. In addition, there is a real need to establish an agreed upon mechanism for prioritizing these tasks, and any resulting plant improvements, in a systematic manner which properly considers safety, radiological exposure objectives, plant reliability and availability, human and capital resource limitations and schedular constraints.

The program outlined in Enclosure 1 is directed at achieving the desired integration and prioritization of necessary tasks. The scope of the program would include currently identified regulatory issues and plant improvement needs for Nine Mile Point Unit 1 as well as anticipated requirements. Anticipated regulatory requirements include the significant issues resulting from the Systematic Evaluation Program. In this area, Niagara Mohawk initiated in early 1982 a study to review the significant findings of the program and to assess their applicability to and potential impact on Nine Mile Point Unit 1. Significant projects related to the seismic assessment of the unit are also underway. Further, evaluation of the material condition of equipment and components to identify any major maintenance or plant improvement is in progress.

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The continuation of this important work requires that a program be developed and agreed upon for integrating these evaluations, their resolutions and scheduling in a manner which considers plant safety and reliability and which makes more efficient use of available resources. The proposed approach addresses these objectives through the use of an initial screening review of regulatory issues and plant needs, an integrated evaluation of these topics and the development of an integrated and prioritized schedule for implementation of required actions. The deferral of certain committed regulatory actions scheduled for the near future and a systematic way of handling the disposition of interim findings of specific evaluations are essential elements of the proposed program.

We will appreciate your review and comments on the proposed program and welcome the opportunity to meet with you to discuss its implementation for Nine Mile Point Unit 1. Your timely review is of utmost importance so that Niagara Mohawk can incorporate this program into the scheduling of projects for the upcoming refueling and maintenace outage which is currently planned for the spring of 1984. The specific menu of items to be included and a proposed schedule for the overall program will be developed as part of the initial topic screening review. We expect that this initial phase of the program can be completed within three to four months after a mutual agreement is made to proceed with this integrated program.

We look forward to your response to our proposal.

Sincerely,

C. V. Mangan
Vice President
Nuclear Engineering and Licensing

CVM/FHF:bd
Enclosure
cc: Mr. Robert A. Purple
Deputy Director, Division of Licensing
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, MD 20014

Enclosure 1

INTEGRATED SAFETY EVALUATION AND SCHEDULING PROGRAM FOR NINE MILE POINT UNIT 1

Niagara Mohawk Power Corporation
Syracuse, NY

NINE MILE POINT UNIT 1

INTEGRATED SAFETY EVALUATION AND SCHEDULING PROGRAM

Purpose

The purpose of this enclosure is to outline a program for the integrated evaluation and scheduling of outstanding regulatory actions and Niagara Mohawk Power Corporation-initiated plant improvements for Nine Mile Point Unit 1. It is based on discussions between Nuclear Regulatory Commission and Niagara Mohawk representatives at a meeting in Bethesda, Maryland on September 7, 1983. The principal objective of the proposed program is to provide an agreed upon mechanism for addressing the broad range of committed and anticipated regulatory requirements and necessary plant improvements in a systematic and safe manner, with clearly assigned priorities, consistent with resource and schedular constraints.

The basis and scope of the proposed approach and the key elements of the program are described herein.

Background

In the operation, maintenance and management of a nuclear/electric generating plant there are numerous demands on engineering and capital resources and numerous candidates for plant modifications and improvements. These include projects to address regulatory requirements and backfits, as well as owner-initiated safety assessments and plant improvements. The regulatory requirements stem from a variety of sources including Commission orders, Inspection & Enforcement Bulletins, Unresolved Safety Issues, and plant specific Inspection & Enforcement actions.

Typically, each source of regulatory requirement or action has its own set of criteria - ranging from the initial plant licensing basis to current regulatory criteria - and often each has its own set of Nuclear Regulatory Commission reviewers. Many of these seemingly independent tasks are related and in some cases interdependent. In addition, they must be coordinated with plant maintenance and improvement work which is required for safe and efficient plant operation.

The end result of the profusion and independent resolution of such tasks is often duplication of effort and improper utilization of limited resources. It could also result in the direction of disproportionate amounts of effort to tasks of low safety benefit at the expense of other significant plant improvements.

Accordingly, a program is proposed that would address committed and planned, as well as anticipated regulatory and owner-initiated tasks. This program would combine those tasks where appropriate, to eliminate insignificant tasks and to prioritize the remaining projects with respect to their safety significance, radiological exposure objectives, human and capital resource constraints, plant reliability, and schedular limitations. This proposed program is described below.

Scope of Program

We propose that the scope of the integrated evaluation and scheduling effort be sufficiently broad to cover not only presently identified licensing issues but also anticipated regulatory requirements and plant improvement needs. To this end, the scope of the proposed program would address (1) Nine Mile Point Unit 1 plant-specific licensing issues, (2) anticipated safety issues emanating from the Systematic Evaluation Program reviews of older operating nuclear plants similar to Nine Mile Point Unit 1, and (3) Niagara Mohawk-identified plant improvements.

A discussion of specific licensing issues which are considered to fall within the program scope and descriptions of Niagara Mohawk-initiated programs to address potential future regulatory issues and plant improvements is given below.

1. Outstanding Regulatory Issues

   Outstanding regulatory issues would include actions required by Nuclear Regulatory Commission orders, Inspection & Enforcement Bulletins, etc., as well as licensing commitments made by Niagara Mohawk. They would also include selected Unresolved Safety Issues to the extent that plant-specific criteria for their evaluation and resolution can be agreed upon early in the program.

   The preliminary review of outstanding licensing action items for Nine Mile Point Unit 1 indicates that a substantial number are logical candidates for integration in the proposed program. The specific issues which are proposed will be selected as part of a more detailed screening review performed as the initial task in the program.

2. Significant Safety Issues From The Systematic Evaluation Program

   Significant issues from the program include those safety issues identified as potentially significant during the integrated assessment phase for plants of comparable type and age to Nine Mile Point Unit 1. In order to obtain an early understanding of these issues, Niagara Mohawk has closely followed the Systematic Evaluation Program from its inception and has initiated engineering evaluations to identify and evaluate those lessons learned from Systematic Evaluation Program Phase II. The list of tasks which are under consideration in this area is given in Attachment 2. This list includes evaluations of Systematic Evaluation Program topics related to external phenomena (i.e. earthquakes, tornados, floods, etc.), certain structural topics and others which were significant for the Boiling Water Reactors.

   In addition, Niagara Mohawk has in progress a significant seismic re-assessment program which includes Research and Development tasks and the development of state-of-the-art analytical models of Nine Mile Point Unit 1 structures and piping.

3. Niagara Mohawk-Identified Plant Improvements

Niagara Mohawk-identified plant improvements include necessary major maintenance and equipment replacement tasks as well those aimed primarily at increasing plant availability and reliability. Niagara Mohawk-initiated projects also include those which anticipate future regulatory requirements. Examples of these tasks are given in Attachment 3. Such owner-initiated activities improve plant safety as well as reliability and need to be considered together with present regulatory requirements in the competition for available resources and schedule time. To this end, Niagara Mohawk has initiated an evaluation of the material condition of plant equipment and components with the primary objective of identifying those tasks which will be necessary to maintain plant availability and reliability.

Main Elements of Proposed Program

The main elements of the proposed program to integrate the issues within the overall program scope are described below.

1. Screening Review

As the initial task in this program, Niagara Mohawk would review outstanding regulatory action items for Nine Mile Point Unit 1, anticipated regulatory items, lessons learned from Systematic Evaluation Program Phase II, and planned and anticipated plant improvement projects. Based on this screening review, Niagara Mohawk would propose specific issues for inclusion and the basis for inclusion in the integrated safety evaluation and scheduling program. Where appropriate, related issues would be combined. For example, combination of structural review topics related to codes, standards, load combinations, wind and tornado loads, seismic loads, etc. would likely be combined.

The results of this screening review, together with a preliminary schedule for completion of the program, would be transmitted to the staff for review, discussion and concurrence. Where this initial screening review clearly indicates that certain topics are not applicable or significant for Nine Mile Point Unit 1, these topics would be deleted by mutual agreement between the Nuclear Regulatory Commission and Niagara Mohawk.

2. Topic Assessments

In this phase of the program, the individual topics identified in the screening review would be evaluated. The basis for this review would be current regulatory criteria following procedures developed in the Systematic Evaluation Program. The purpose of these engineering evaluations would be to (1) assess the significance and applicability of each issue to Nine Mile Point Unit 1, (2) identify significant differences between the plant design and the intent of applicable current criteria, and (3) evaluate the differences. Those topics which are considered to meet the intent of current criteria would be documented and completed. Those topics with identified differences with possible safety significance would be held for further resolution as part of the integrated assessment phase of the program.

The schedule for these individual topic reviews is obviously dependent upon the scope of the program established in item 1, above. In addition, work has already been initiated on many of the expected topics. Tentatively, it is expected that these engineering evaluations (topic assessments) can be completed in approximately one year after establishing the specific list of topics in the program.

Results of each topic assessment would be documented in the form of a technical evaluation report which would be transmitted to the Nuclear Regulatory Commission staff for review.

3. Integrated Assessment

Following completion of the individual topic evaluations and identification of potentially significant issues, an integrated assessment for resolutions of significant issues would be developed. The objective of this phase, which would be patterned after the integrated assessments performed for Systematic Evaluation Program plants, would be to identify and select corrective actions which best resolve the entire spectrum of identified problem areas.

It is anticipated at this time that the integrated assessment would be performed by a team of senior Niagara Mohawk engineering and operations personnel.

The basis for evaluation of differences in plant design as compared to current criteria would involve deterministic judgments similar to those exercised in the resolution of Systematic Evaluation Program Phase II issues. However, these judgments would be supplemented, as practical, by the results of available probabilistic risk assessments performed for Nine Mile Point Unit 1 and/or similar Boiling Water Reactors.

The results of the integrated assessment would be documented and subject to Nuclear Regulatory Commission review and concurrence.

4. Integrated Scheduling

A key element of this program is an integrated schedule for implementing corrective actions. The integrated schedule would be based on prioritization of tasks in order to achieve the best utilization of available resources. The criteria to be considered in establishing the prioritization of tasks would include the following:

- Safety significance
- Radiological exposure objectives
- Plant reliability/availability
- Niagara Mohawk manpower and capital resources
- Schedular constraints

- Physical limitations - e.g., the ability to perform certain tasks at the same time considering interfaces between jobs, number of workers required in a given area, etc.

- Training - e.g., the ability of plant personnel to assimilate plant modifications in a systematic and safe manner

5. Interim Deferral of Specific Licensing Requirements and Commitments

Since it is clear that time will be required to perform the screening reviews, specific topic evaluations, integrated plant assessment, and development of an integrated schedule, it will be necessary to defer certain planned, committed, and/or ordered licensing tasks. The tasks which fall in this category are (1) those which are not yet underway to any significant extent, (2) those which are likely to be impacted by the integrated assessment process (i.e., interrelated issues), and (3) those whose contribution to plant safety improvement may not be commensurate with their cost. The final list of topics which require deferral during the review and evaluation process will be established as part of the initial screening review. However, it is clear at this time that certain outstanding regulatory issues committed for completion over the next two years will require deferral. The specific issues for which deferral is needed are listed in Attachment 1. These are listed in priority; i.e. deferral is most important for those listed first. Regulatory issues which are well underway or need to be pursued to completion are listed in Attachment 4. These topics would not be included in the integrated safety evaluation program and, therefore, deferral is not requested.

Your specific approval is requested in a timely manner to defer the projects listed in Attachmment 1 until completion of the integrated assessment and development of an integrated schedule.

6. Disposition of Findings of Topic Evaluations

A feature of the proposed program which we consider essential is that findings shall be documented in a technical evaluation report for each major safety topic and reserved for further evaluation and resolution as part of the integrated plant assessment. Significant differences identified in this process would not be evaluated and resolved on a piece-meal basis unless they represent a clear and demonstrable safety hazard. This approach parallels that followed in Systematic Evaluation Program Phase II topic evaluations. Your formal concurrence with this approach is an important factor in Niagara Mohawk's decision making process to proceed with the Nine Mile Point Unit 1 integrated evaluation program.

Conclusion

The program outlined above is considered to provide a systematic and balanced approach to the review and resolution of regulatory issues and necessary plant improvements. Such an approach was demonstrated to be effective in the Systematic Evaluation Program and is considered essential for a plant such as Nine Mile Point Unit 1 which has been in operation since the late 1960's. While it clearly involves a substantial engineering effort, it is believed that the significant improvements in resource allocation, scheduling and implementation of plant improvements will result in a safer and more reliable plant. Such an approach will also bring order to the implementation of plant modifications in a manner which is consistent with continued safe plant operation.

NINE MILE POINT UNIT NO. 1

REGULATORY PROJECTS FOR WHICH COMPLETION DEFERRAL IS REQUIRED

TITLE	REASON FOR DEFERRAL
- Equipment Qualification ° Procurement and installation of environmentally qualified equipment	Equipment procurement should not be initiated until equipment seismic qualification requirements are developed. Definition of equipment requirements will continue.
- Masonry Walls (Bulletin 80-11)	This work should be deferred pending completion of seismic, structural codes and standards, load combinations and wind/tornado evaluations.
- Mark I Torus Mods ° Relief Valve Line Support	Dynamic analysis and any modifications should consider latest seismic floor response spectra and criteria under development for Systematic Evaluation Program seismic upgrade.
- Feedwater - HPCI Mods ° High Level Trip ° Low Flow Control	Safety improvement associated with these modifications should be re-evaluated. Piping mods could be impacted by seismic review.
- Control Room Habitability Evaluation	Defer pending evaluation of seismic adequacy of Control Room.
- Control Room Design Review	Defer pending evaluation of seismic adequacy of Control Room.
- Appendix R - Fire Protection	Safety improvements should be re-assessed in comparison with other plant modifications
- Regulatory Guide 1.97 (NUREG 0737, Suppl. 1)	Defer pending evaluation of seismic adequacy.
- Reactor Protection System Motor Generator Set Modifications	Review of RPS in general, and isolation devices in particular, could impact other plant modifications.
- Post LOCA Containment Vent	Modifications should not be undertaken pending results of seismic upgrade review.
- NUREG-0612 - Heavy Loads ° Equipment modifications, replacements	Potential impact from seismic upgrade review.

NMPC SAFETY TOPIC REVIEW PROGRAM

Main Tasks	Status
1. Design Document Retrieval	Complete for seismic, structural, piping
2. Preliminary Screening of SEP-II Topics	Potentially significant topics selected for review
3. Seismic Review	
° Seismic input criteria	° In process
° Seismic structural upgrade program	° In process, 3-D models of Reactor Building and Turbine Building complete, preliminary Floor Response Spectra available
° Design document review	° In process
° Seismic Walk-thru	° In process
° Walk-thru actions	° In process
° Piping review	° In process
4. Wind & Tornado Loads on Structures	In process
5. Missiles	
° Turbine	° Analysis complete, results acceptable
° Tornado	° Detailed analysis not yet performed; walk-thru indicates no essentiall equipment is exposed.
6. Flooding	Preliminary evaluation indicates Nine Mile Point Unit 1 is protected from maximum lake floods predicted for NMP-2 and for Ginna (Systematic Evaluation Program).
7. Structural Design Codes, Criteria and Load Combinations	Evaluation in process. Franklin and Ginna results being considered.
8. High Energy Line Break Evaluations	Preliminary review complete. Substantial analyses already complete. Results similar to Oyster Creek, Dresden 2, and Millstone. Leak-before-break analyses being initiated for four Reactor Building and Turbine Building systems.
9. Applicability of detailed SEP-II Findings for Oyster Creek (NUREG-0822) to NMP-1	In process. No significant problems identified.

Attachment 3

EXAMPLES OF SIGNIFICANT NMPC-INITIATED PROJECTS

TITLE
Spent Fuel Storage Expansion
Sewage Treatment Plant Expansion
Replacement of 24V Batteries
Replacement of High Pressure Feedwater Heater
Main Condenser Retubing
Installation of Additional Turbine Building Closed Loop Cooling Heat Exchanger
Torus Corrosion/Water Quality Monitoring Program
Installation of New Main Transformer
Installation of Reserve Transformer
Installation of Seventh Condensate Demineralizer
Installation of Three 600V Class 1E Motor Control Centers
Seismic R&D Project - Explosive Testing
Replacement of Turbine Buckets
Replacement of Drywell Stainless Steel Piping
Replacement of Radwaste Tasks and Piping System
General Capacity Factor Improvement Programs

Attachment 4

EXAMPLES OF REGULATORY PROJECTS WHICH WILL CONTINUE OUTSIDE OF INTEGRATED SAFETY EVALUATIONN PROGRAM

TITLE

Low Level Waste Disposal (10CFR61)

Mark I Torus Modifications (excluding piping modifications)

Mark I Torus - Reactor Low Low Level Setpoint Change

Scram Discharge Volume Diverse Level Instrumentation

Degraded Grid Voltage - Motor Modifications

TMI Related; NUREG-0737 Modifications (excluding Control Room Habitability Study and HVAC Upgrade)

On-going FSAR Update