

September 7, 1989

Mr. William J. Donlon
Chairman and CEO
Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, NY 13202

Dear Mr. Donlon:

We, the undersigned members of the Restart Review Panel, are pleased to transmit to you the Restart Readiness Report (Report) related to Nine Mile Point Unit 1. It is the product of substantial effort by many individuals both within and outside the company. We have previously met with you to discuss our mission and methodology for our review.

Our individual and collective judgments, based on internal and external assessments, are that Nine Mile Point Unit 1 is ready for restart, subject to completion of the open items listed in the Report. We thoroughly tested this conclusion and are satisfied as to its validity. We are satisfied that sufficient attention has been given to all the restart issues such that the conclusion regarding restart can be made with confidence.

As you are aware, a number of the restart issues related to management, the so-called underlying root cause issues, are not readily amenable to objective tests of the acceptability of their resolution. In such cases we utilized our collective nuclear and management expertise to analyze the extensive information that we and our staff gathered to assure that these important areas were thoroughly explored and the basis for our judgments articulated.

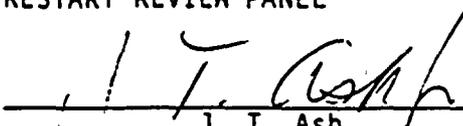
In summary, the Readiness for Restart Report includes:

1. The bases for concluding that NMP1 is ready for restart.
2. A self-assessment of the implementation of the Restart Action Plan.
3. The bases for concluding that Niagara Mohawk's current line management has the appropriate leadership and management skills to prevent, or detect and correct, future problems.

We would be pleased to meet with you to discuss the report or to answer any questions you may have.

Respectfully submitted,

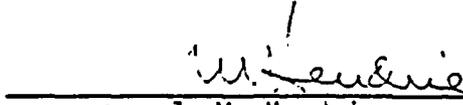
RESTART REVIEW PANEL



J. T. Ash



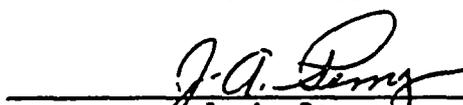
D. P. Hall



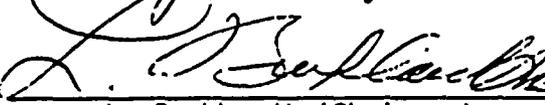
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NINE MILE POINT UNIT I

RESTART READINESS REPORT

SEPTEMBER 1989

NIAGARA MOHAWK POWER CORPORATION



RESTART READINESS REPORT
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SEPTEMBER 8, 1989

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EXECUTIVE SUMMARY

This Restart Readiness Report affirms Niagara Mohawk Power Corporation's readiness to re-start and operate the Nine Mile Point Unit 1. The Report summarizes the results of Niagara Mohawk's self-assessment process that concluded that the Plant is physically ready to operate and that Niagara Mohawk has the management and leadership skills necessary to safely operate it. The Report includes the bases for these conclusions and identifies the actions remaining to be completed prior to restart. The limited number of clearly identified and defined actions remaining to be completed before restart are delineated in an appendix (Appendix 4) to this report. The Report fulfills the third and final condition of the NRC's Confirmatory Action Letter dated July 24, 1988 (CAL 88-17).

In December 1987, Unit 1 was shut down due to excessive vibration in the feedwater system. During the shutdown, Niagara Mohawk committed to resolve identified problems associated with the Inservice Inspection Program (ISI). In the course of the outage, additional technical and programmatic deficiencies were identified by Niagara Mohawk and the Nuclear Regulatory Commission. These deficiencies led to the issuance of the Confirmatory Action Letter.

Niagara Mohawk formed a special task force to prepare a comprehensive Restart Action Plan (RAP) which was submitted to the NRC in accordance with the Confirmatory Action Letter. This Plan identified five underlying Root Causes for the management effectiveness problems and eighteen specific issues. The Plan described the identified problems, their root causes, and the intended corrective actions.

While the Restart Action Plan Corrective Actions were being implemented, Niagara Mohawk assembled a Restart Review Panel to perform the required restart readiness self-assessment and to prepare this report presenting the results of that self-assessment.

The Restart Review Panel consists of Niagara Mohawk and non-Company experts. Collectively, the Panel represents broad experience and extensive knowledge of management practices and nuclear operation, maintenance, engineering, quality assurance, and regulation. The Panel is supported by a staff consisting of a staff director, assessment area coordinators, assessors and interviewers.

The panel sought to focus the self-assessment process on determining the effectiveness of the RAP corrective actions by developing a set of seven bases for assessing restart readiness. Together these seven Bases describe the conditions expected when the plant is ready for restart. Broadly, the Panel views the seven Bases as positive descriptions of conditions which support safe nuclear plant operation in contrast to the negatively stated deficiencies identified in the RAP. For each of these seven Bases, one or more Targets were developed to act as measuring criteria. Together the Bases and Targets provide a results-oriented method to measure the effectiveness of the corrective actions. The Bases and Targets are contained in Appendix 2.

The self-assessment process involved gathering, analyzing, and synthesizing facts to determine the adequacy of Corrective Actions. Several methods, including interviews, documentation audits, and performance reviews, were employed to collect the information used for the self-assessment. The collection and analysis of information extended over 6000 hours and included interviews with hundreds of personnel and extensive direct observation throughout the plant, training center and other nuclear related facilities.

The results of the self-assessment confirm the appropriateness and validity of Niagara Mohawk's Restart Action Plan. Niagara Mohawk has concluded that the Company is ready for safe restart and continued, safe and reliable operation of Nine Mile Point 1. This conclusion results from the thorough and comprehensive self-assessment performed as described in this Report. The self-assessment has confirmed that Niagara Mohawk has satisfied the seven Bases for restart readiness that the Panel established.

The assessment of the corrective actions related to the five Underlying Root Causes, corroborated by an assessment based on generic NRC restart guidelines, confirms that, with the additional actions taken as a result of the recommendations of the Restart Review Panel, Niagara Mohawk's current line management has the appropriate leadership and management skills to safely operate Nine Mile Point 1. In particular, the assessment found that:

1. Management has characterized and communicated the direction for the Nuclear Division through vision, mission and goal statements. Policies and procedures have been established to provide a continuing process of planning to assure that plant operations will be conducted in compliance with regulations and in a safe and reliable manner,
2. Performance-limiting deficiencies have been identified and resolved, and a detailed plan for implementing an improved problem-solving process is in place,
3. The upper levels of the Nuclear Division have adopted, and are using, the vision, the goals, and Standards of Performance in day-to-day operations and in addressing employee needs and concerns,
4. Standards of Performance, with emphasis on achieving results, have been identified and communicated, and a plan for developing a long-term Nuclear self-assessment process is in place,
5. Progress toward effective teamwork is being demonstrated by working together to make decisions and solve problems.

The assessment of the eighteen Specific Issues, again corroborated by an assessment based on generic NRC restart guidelines, confirms that Nine Mile Point 1 is physically and organizationally ready to resume operation. Each Specific Issue was thoroughly evaluated to assure that the results achieved through the implementation of the corrective actions in the RAP are sufficient to provide management with assurance that these issues concerning operator training and qualification, administrative process, and hardware deficiencies will not have an adverse effect on safe plant operation.

The self-assessment also confirms that Niagara Mohawk's current line management has the appropriate leadership and management skills to prevent, or detect and correct, future problems. The assessment found that the Nuclear Division and support organizations have adopted high standards of performance which are being demonstrated in the identification and effective resolution of problems. The assessment also found that the corrective actions had improved the effectiveness of planning and teamwork in making decisions and solving problems related to performance limiting deficiencies. Finally, the assessment identified programs and policies that had been developed to continue to enhance the assessment and improvement of the activities of the Nuclear Division.

The above conclusions are subject to the completion of the identified and defined actions remaining to be completed before restart. These remaining actions are delineated in an appendix (Appendix 4) to this report. For those items in Appendix 4 relating to Underlying Root Causes, it should be noted that they represent items not required by the RAP, but which have been expedited or added at the urging of the Panel. Niagara Mohawk will describe the completion of these actions in a letter to the NRC prior to requesting approval from the Region I Administrator for restart of Nine Mile Point 1.



I. INTRODUCTION AND SUMMARY

This Report affirms Niagara Mohawk's readiness to re-start and operate Nine Mile Point Unit 1 (NMP1). The Report presents the results of a self-assessment process that has resulted in the conclusion that the plant is physically ready to operate and that Niagara Mohawk has the management and leadership skills necessary to safely operate it. The Report includes the bases for these conclusions and identifies the actions remaining to be completed prior to restart. The Report fulfills the third and final condition of the NRC's Confirmatory Action Letter dated July 24, 1988 (CAL 88-17).

Unit 1 was manually shutdown in December of 1987 because of excessive feedwater system vibration. Subsequently, Niagara Mohawk initiated an early refueling and maintenance outage for the Unit. Prior to the outage, Niagara Mohawk began evaluating several concerns related to the Inservice Inspection Program. During the outage, deficiencies with fire barrier penetrations and several other technical issues were identified. These issues also indicated that there were a number of problems associated with the effectiveness of Niagara Mohawk's management of its nuclear operation. The NRC issued Confirmatory Action Letter (CAL 88-17) on July 24, 1988 following a meeting with Niagara Mohawk on June 20, 1988, during which Niagara Mohawk made a number of commitments to identify and correct problems.

Niagara Mohawk formed a special task force to prepare a comprehensive Restart Action Plan (RAP) which was submitted to the NRC in accordance with the Confirmatory Action Letter. The RAP identified eighteen specific issues and five underlying Root Causes for the management effectiveness problems. The RAP described the identified problems, their root causes, and the intended corrective actions. Additional background information is included in Chapter II of this report.

While the RAP corrective actions were being implemented, Niagara Mohawk assembled a Restart Review Panel to perform the required self-assessment of the readiness of NMP1 for restart and to prepare this written report presenting the results of that self-assessment. After reviewing the actions of several other utilities involved in similar restart processes, the Restart Review Panel decided to focus the self-assessment process by developing Bases as a method to be used for concluding that NMP1 is ready for restart. The Bases for Assessing Restart Readiness are discussed in the following Section.

A. Bases for Assessing Restart Readiness

Rather than merely confirm that all corrective actions had been adequately completed as input to a restart report, Niagara Mohawk chose to approach the question from a different and independent tack to determine if the completion of the corrective actions arising from the RAP were also sufficient to assure safe operation. To this end Niagara Mohawk recognized that a results oriented measurement of the effectiveness of the RAP Corrective Actions was necessary to assess whether the problems leading to the shutdown of Unit 1 had been solved. The Panel and its staff, therefore, created a model describing the state to be expected when sufficient progress toward achievement of the Corrective Action Objectives has been demonstrated. The model for the desired state is described by the seven

Bases discussed in this Report. In creating this model the panel reflected their knowledge of current industry and regulatory standards for attributes supporting safe and reliable nuclear plant operation.

In order to test whether the desired state had been achieved, Targets were developed to act as qualitative measuring criteria for each Basis. The seven Bases for Assessing Restart Readiness and their associated Targets are summarized in a matrix in Appendix 2. The Panel developed the Targets such that when adequate progress was made toward meeting the Targets, the corresponding Basis would be met. When the Panel decided that all seven Bases would be satisfied, they presented their conclusions to Niagara Mohawk's Chief Executive Officer in this report.

Broadly, the Panel views the seven bases as positive descriptions of conditions which support safe nuclear plant operation in contrast to the negatively stated deficiencies identified in the RAP. To emphasize the importance of the five Underlying Root Causes (URCs) identified in the RAP, an assessment Basis was developed for each of them. Targets were then developed for each Basis.

To focus upon the correction of the 18 Specific Issues, a single Basis was developed, that describes the desired plant and personnel status. For each Specific Issue, Targets were provided to aid in assessing the effectiveness of corrective actions in resolving the Issue and preventing recurrence of this or similar problems.

To provide additional assurance that an effective self-assessment had been performed, it was decided to review progress from another perspective; this second viewpoint was based on the generic NRC Restart Guidelines, which were identified in an 11/23/88 NRC memorandum from Mr. V. Stello, Jr. to NRC Office Directors and Regional Administrators. A Basis (with Targets for each of the five sub-elements of the Guidelines) was developed to identify the criteria for a successful assessment from this perspective.

Presented below are the seven self-assessment Bases for the Underlying Root Causes, Specific Issues, and NRC Generic Restart Guidelines. They are repeated for convenience in the detailed discussions of Appendix 3.

1. Planning and Goals

"The management tasks of planning and goal setting have not kept pace with the changing needs of the Nuclear Division and with changes within the nuclear industry."

Assessment Basis No. 1:

Management will have assessed critical issues within the Nuclear Division and facing the nuclear industry. Based on this assessment, and in support of Corporate mission and goals, management shall have characterized and communicated the direction for the Nuclear Division through vision, mission, and goal statements. Managers can deploy their resources consistent with the Nuclear Division vision, mission, and goals, to provide assurance that plant operations will be conducted in compliance with regulations and in a safe and reliable manner.

2. Problem Solving

"The process for identifying and resolving issues before they become regulatory concerns was less than adequate, in that there was not an integrated or consistent process used to identify, analyze, correct, and assess problems in a timely way."

Assessment Basis No. 2:

Past and current performance-limiting deficiencies shall have been identified and resolved through self-assessment of past performance and implementation of appropriate corrective actions. A detailed plan for implementing an improved problem-solving process, with provisions for:

- a) problem identification,
- b) systematic causal analysis,
- c) corrective action planning,
- d) implementation management, and
- e) assessment of results achieved,

shall be in place and actions shall be in progress to implement this plan. A process based on that used in developing the restart action plan shall be used until the long-term program is fully in place.

3. Organizational Culture

"Management's technical focus has created an organizational culture that diverts attention away from the needs and effective use of employees."

Assessment Basis No. 3:

There is evidence that the upper levels of the Nuclear Division organization have adopted, and are using, the vision, goals, and Standards of Performance in day-to-day operations and in addressing employee needs and concerns.

4. Standards of Performance and Self-Assessment

"Standards of Performance have not been defined or described sufficiently for effective assessment, and self-assessments have not been consistent or effective."

Assessment Basis No. 4:

Standards of Performance, with emphasis on achieving results, have been identified and communicated. Plans have been developed for implementing a comprehensive self-assessment program to assess readiness for restart has been conducted. Progress has been demonstrated in implementing the plan for developing the long-term Nuclear self-assessment process.

5. Teamwork

"Lack of effective teamwork within the Nuclear Division and with support organizations is evidenced by lack of coordination, cooperation, and communication in carrying out responsibilities."

Assessment Basis No. 5:

Progress toward effective teamwork within the Nuclear Division, is evidenced by working together to make decisions and solve problems, and, in general, to "get the job done, correctly and completely". This progress will be evidenced both within and between departments in the Nuclear Division.

6. Specific Issues

The 18 Specific Issues are:

1. Outage Management Oversight
2. Maintenance of Operator Licenses
3. Emergency Operating Procedures
4. Inservice Inspection
5. Control of Commercial-Grade Items
6. Fire Barrier Penetrations
7. Torus Wall Thinning
8. Scram Discharge Volume
9. Appendix J Testing of Emergency Condenser and Shutdown Cooling Valves
10. Reactor Vessel Pressure/Temperature Curves
11. Erosion/Corrosion Program
12. Motor-Generator-Set Battery Chargers
13. Implementation of Long-Term Programs Related to I&C Technician Allegation Issue
14. Safety System Functional Inspection
15. Cracks in Walls and Floors
16. Feedwater Nozzles
17. Inservice Testing
18. 125 VDC System Concerns

Assessment Basis No. 6:

"Results achieved through implementation of restart corrective actions for the RAP Specific Issues shall be sufficient to resolve or provide management with assurance that these issues concerning operator training and qualification, administrative process, and hardware deficiencies will not have an adverse effect on safe plant operations."

7. NRC Generic Restart Guidelines

The five NRC Guidelines relate to:

1. Root Causes Identified and Corrected
2. Management Organization
3. Plant and Corporate Staff
4. Physical State of Readiness of the Plant
5. Regulatory Requirements

Assessment Basis No. 7:

"Results of corrective actions and plant improvement activities sufficiently address and satisfy NRC restart guidelines, such that all issues necessary to support readiness for restart and safe operation have been demonstrated and NRC approval for plant restart may be requested."

B. Summary of Conclusions

The results of the assessment program confirm the appropriateness and validity of Niagara Mohawk's Restart Action Plan, which has been submitted to the NRC. The NRC has acknowledged the viability of the Plan as a suitable framework for responding to the NRC's request for a self-evaluation of restart readiness.

Niagara Mohawk has concluded that, upon completion of the actions described in Appendix 4 of this Report, the Company will be ready for safe restart and continued, safe and reliable operation of Nine Mile Point 1. This conclusion results from the thorough and comprehensive self-assessment performed as described in this Report. The self-assessment has confirmed that Niagara Mohawk has satisfied the seven Bases for Restart Readiness described in the preceding section.

The assessment of the five Underlying Root Causes, corroborated by an assessment based on generic NRC restart guidelines, confirms that Niagara Mohawk's current line management has the appropriate leadership and management skills to safely operate Nine Mile Point 1. In particular the assessment found that:

1. Management has characterized and communicated the direction for the Nuclear Division through vision, mission and goal statements. Policies and procedures have been established to provide a continuing process of planning to assure that plant operations will be conducted in compliance with regulations and in a safe and reliable manner,
2. Performance-limiting deficiencies have been identified and resolved, and a detailed plan for implementing an improved problem-solving process is in place,
3. The upper levels of the Nuclear Division have adopted, and are using, the vision, the goals, and Standards of Performance in day-to-day operations and in addressing employee needs and concerns,
4. Standards of Performance, with emphasis on achieving results, have been identified and communicated, and a plan for developing a long-term Nuclear self-assessment process is in place,
5. Progress toward effective teamwork is being demonstrated by working together to make decisions and solve problems.

Each specific Issue was thoroughly evaluated to assure that the results achieved through the implementation of the restart corrective actions are sufficient to provide management with assurance that these issues concerning operator training and qualification, administrative process, and hardware deficiencies will not have an adverse effect on safe plant operation. In summary, the assessment of the Specific Issues, again corroborated by an assessment based on generic NRC restart guidelines, confirms that Nine Mile Point 1 is physically and organizationally ready to resume operation upon completion of the actions described in Appendix 4. Niagara Mohawk will describe the completion of these actions in a letter to the NRC prior to requesting approval from the Region I Administration for restart of NMP1.

The self-assessment also confirms that Niagara Mohawk's current line management has the appropriate leadership and management skills to prevent, or detect and correct, future problems. The assessment found that the Nuclear Division and support organizations have adopted high standards of performance which are being demonstrated in the identification and effective resolution of problems. The assessment also found that the corrective actions had improved the effectiveness of planning and teamwork in making decisions and solving problems related to performance limiting deficiencies. Finally, the assessment identified programs and policies that had been developed to continue to enhance the assessment and improvement of the activities of the Nuclear Division.

C. Structure of Report

The Report consists of five Chapters:

Chapter I, Introduction, includes a discussion of the development of the Bases for concluding that NMP1 is ready for restart.

Chapter II (Background) is a summary description of key portions of the Restart Action Plan.

Chapter III summarizes the approaches and methods used in assessing readiness for restart.

Chapter IV provides the conclusions of the restart self-assessment process.

Chapter V discusses measures to prevent, detect and correct future problems.

Appendix 1 is a Glossary of Terms used in the Report.

Appendix 2 is the "Nine Mile Point Unit One Restart Readiness Bases & Targets Matrix," which comprises the Bases and Targets whereby the effectiveness and sufficiency of the RAP Corrective Actions were assessed.

Appendix 3 provides details of the assessment of the effectiveness of Restart Action Plan (RAP) corrective actions in correcting problems, improving conditions, and instituting programmatic measures sufficient to assure that the concerns addressed in the RAP and Confirmatory Action Letter 88-17 will not recur or have a negative effect on safe operation of Unit 1. The information in this appendix provides results of the assessments by Basis and Target.

Appendix 4 lists those actions required to be completed prior to restart.

II. BACKGROUND

A. Events Leading to Confirmatory Action Letter

In December 1987, Nine Mile Point Unit 1 was manually shut down because of excessive feedwater system vibration. At the time, it was anticipated that the Unit would be restarted on completion of repairs and operated until the planned Spring 1988 refueling and maintenance outage. Before the December shutdown, however, a number of concerns were identified, relating to the Inservice Inspection Program (ISI).

Niagara Mohawk committed to resolve the ISI program concerns before restarting Unit 1. Further evaluation disclosed that the problems were more extensive than originally believed; hence, Niagara Mohawk initiated an early refueling and maintenance outage.

In March 1988, while performing modification work, Niagara Mohawk identified a fire barrier deficiency under the Unit 1 battery rooms. As a result, a program was initiated to evaluate the adequacy of all Unit 1 fire barriers having regulatory requirements.

These, and other technical issues identified during this period, also indicated problems associated with the effectiveness of Niagara Mohawk's management of its nuclear operation. The management effectiveness issues identified included concerns about the effectiveness of problem solving and implementation of previous corrective actions.

These problems, and other technical and management effectiveness issues were discussed with the NRC on June 20, 1988. Following that meeting, the NRC discussed the need for additional commitments with Niagara Mohawk, which led to NRC's issuance of Confirmatory Action Letter CAL 88-17, dated July 24, 1988. The CAL specified the following three actions to be taken by Niagara Mohawk before restart of Unit 1:

1. "Determine and document your assessment of the root cause(s) of why Niagara Mohawk line management has not been effective in recognizing and remedying problems, in particular the problems which were the subject of CAL 88-13 (maintenance of operator licenses), Inspection Report 50-220/88-22 (licensed operators' knowledge and use of emergency operating procedures), and the issues discussed during the June 20, 1988 meeting at Region I."
2. "Prepare a proposed Restart Action Plan, and submit it to the NRC, Region I Regional Administrator, for review and approval. The Plan will identify all actions required to be completed prior to startup and a schedule for completion of all other actions to be completed after startup that are needed to address the root cause(s) identified in Item 1. For actions proposed for completion after restart, you will provide justification for why completion after restart will not have an adverse impact on safe plant operation."
3. "Provide a written report relative to the readiness of NMP1 for restart. Include in this report a) your bases for concluding that NMP1 is ready for restart, b) a self-assessment of the implementation of the Restart Action Plan, and c) your conclusions regarding whether Niagara Mohawk's current line management has the appropriate leadership and management skills to prevent, or detect and correct, future problems."

B. Development of Restart Action Plan

In response to item 2 of the CAL 88-17, Niagara Mohawk submitted to the NRC a comprehensive Restart Action Plan, addressing the identified deficiencies and their root causes, and describing its intended corrective actions. The RAP was developed by Niagara Mohawk's Nuclear Division supporting organizations and consulting experts.

Niagara Mohawk senior management is an integral part of the restart effort. Leadership and direction for the restart effort is provided directly by the Chief Executive Officer and the President, who have been continually involved in the organization and review of the restart effort.

In response to CAL 88-17, senior management established three primary objectives:

1. Take aggressive yet carefully considered measures to identify the issues; devise and implement required action; assure that results have been documented; verify adequate completion of restart actions; and maintain auditable records.
2. Assure that all levels of Niagara Mohawk personnel subscribe to the Plan, with line management defining the root causes and corrective actions, and taking necessary actions to implement and verify completion of the corrective actions.
3. Assure that senior Niagara Mohawk management is actively involved in developing and implementing the Plan.

In developing the Plan to meet these management objectives, a systematic approach was instituted to ensure that:

1. The issues were identified.
2. The issues were effectively analyzed to determine their root cause(s).
3. Effective corrective actions were identified to address these root causes.
4. Appropriate accountability was assigned for implementing corrective actions.
5. Follow-up evaluations were performed to assess whether corrective actions were effecting desired changes in performance.
6. Verification activities were identified in advance to assure that adequate completion of restart actions was achieved, verified and documented.

As part of the review process, the Plan was explained and discussed in numerous meetings throughout the Company, to gain acceptance and support at all levels.

Coordinating and implementing the restart effort was the responsibility of line organizations headed by the General Superintendent - Nuclear Generation, Vice President - Nuclear Engineering and Licensing, and various support groups.

A Restart Task Force, reporting directly to the Executive Vice President - Nuclear Operations, worked with line management to develop the Plan and facilitate its initial implementation. An Integrated Team of selected individuals representing key organization functions provided additional information and support, including resolution of issues encountered in developing, implementing, and assessing restart actions.

With line management participation and senior management oversight, the Restart Task Force reviewed selected historical documents related to Unit 1 and, as needed, Unit 2 operation, as well as from other sources. While sorting issues and trends by root cause category, the Task Force recognized that most issues could ultimately be attributed to management and organizational effectiveness concerns. These problems were evidenced by the following:

1. Buy-in to program and policies by line management, was frequently lacking.
2. Resources applied to Unit 2 construction activities were sometimes at the expense of Unit 1 activities.
3. Focus was sometimes too narrow to accurately identify root causes and prescribe appropriate corrective actions for identified problems.
4. Often, insufficient evaluation time was devoted to identifying root causes of problems and devising corrective actions.

The Plan was designed to overcome these deficiencies. To determine the issues to be analyzed, a three-pronged approach was used:

1. Previously-identified issues and trends were evaluated to determine whether they were symptoms of broad underlying issues, and, if so, to reveal these Underlying Root Causes.
2. Specific Issues were compiled that were already identified as restart prerequisites (for example, the issues discussed in CAL 88-17).
3. A process was established to continue to identify and review new issues and to determine whether they involve matters to be addressed before restart.

Individual root causes were grouped into the five Underlying Root Causes. (See Appendix B of the RAP for details of Niagara Mohawk's process for determining root causes.) Corrective action objectives were assigned to each Underlying Root Cause. These objectives characterize the desired direction and performance level for the Plan. For each corrective action objective, corrective actions were devised to meet the objective.

The potential effect of each corrective action on safe plant operation, its priority, and other considerations affecting the importance of completing it or showing significant progress, were evaluated at several organizational levels representing a cross section of the Nuclear Division and support groups. Each corrective action was prioritized in accordance with its required completion time frame relative to Unit 1 restart:

Priority 1 corrective actions are required to support safe plant operation, demonstrate sufficient progress in weak performance areas, or correct significant deficiencies. Priority 1 corrective actions are required to be completed, or sufficient progress shown, before restart.

Priority 2 corrective actions involve additional improvements in areas that are functionally satisfactory now, or, when completed, will achieve the desired cultural environment.

Priority 3 corrective actions involve longer-term enhancements to programs or processes that are currently considered to be satisfactory.

The iterative process of prioritizing corrective actions was comprehensive, and provides confidence that the priority assignments are valid. The process identified the Priority 1 items, which, in conjunction with other day-to-day and programmatic activities, e.g., Technical Specification Surveillance requirements, establish necessary and sufficient conditions to safely operate Nine Mile Point Unit 1.

Collectively the Priority 1, 2 and 3 Corrective Actions are referred to as the Nuclear Improvement Program. The Nuclear Improvement Program (NIP) is the overall program to improve Niagara Mohawk's nuclear performance, which encompasses both short-term and longer-term activities. The NIP addresses all of the corrective actions designed to improve management and organizational effectiveness, and longer-term corrective actions associated with specific technical issues.

The Restart Action Plan (RAP) is part of the NIP and is directed to the short-term, Priority 1 aspects of the Program. Justification was provided in the RAP as to why the post-restart implementation of Priority 2 and 3 corrective actions will not adversely affect safe plant operation (CAL 88-17, action item 2), and the progress of those actions is not the subject of this Report. However, their general status may be discussed in terms of overall progress toward stated goals.

Although some Priority 2 and 3 corrective actions may begin before restart, they are not in direct support of safe plant operation and are not required before restart. They will establish levels of performance above those necessary to support safe operation. Priority 2 and 3 issues are generally expected to be fully resolved within approximately one year and five years after restart, respectively. However, because the Nuclear Improvement Program is a dynamic process, periodic review, evaluation, and adjustment could influence projected longer-term completion time frames.

C. NRC Review of RAP

After the initial NRC Staff review, the NRC submitted a list of questions on February 3, 1989 regarding specific RAP and NIP issues (Attachments 1 and 2 of Inspection Report 50-220/89-10). (A number of these questions had been discussed and the issues further clarified in a meeting held with the NRC on January 26, 1989.) We submitted our written response to these questions on March 2, 1989 and revised the RAP to reflect changes described in the response. Revision 2 of the Restart Action Plan was submitted to the NRC on July 7, 1989. During discussions with Niagara Mohawk management and at a public meeting on August 23, 1989, the NRC acknowledged the viability of the RAP as a suitable framework for responding to the NRC's request for a self-evaluation of restart readiness.

III. RESTART ASSESSMENT PROCESS

This Chapter discusses the restart self-assessment process and its key elements. In addition, in order to put the self-assessment process in perspective, a brief description of the completion, verification, and review of the RAP Corrective Actions is provided. Also included in this chapter are descriptions of the INPO Assist Visit, conducted as part of the restart readiness activities, and the Executive Review of the Self-Assessment.

A. Completion, Verification and Review of RAP Corrective Actions

Responsibility for implementing Restart Corrective Actions was generally assigned to functional groups within the Nuclear Division. An individual was the designated "Task Manager" responsible for the action completion, for deciding when the results were acceptable, and for ensuring that the verification steps provided adequate evidence of completion.

On completion of the corrective actions, the Task Manager conducted a review of the results. When actions were found to be satisfactory, the Task Manager signified concurrence on an Issues and Corrective Action Closure form, attaching documentation demonstrating that the action has been closed.

Following the Task Manager's review, the verification steps specified in the RAP were performed by an individual or group not directly responsible for the performance of the work. Completion of the verification actions was indicated by signing the Verification Action Closure Form and attaching documentation demonstrating that the verification action had been completed.

The corrective actions were reviewed for acceptability by existing review committees: the Site Operating Review Committee (SORC) and, on an audit basis, the Safety Review and Audit Board (SRAB). These groups generally used the reports and presentation of action implementers and verifiers; however, the SRAB conducted some independent assessments. Corrective actions involving specific plant activities or plant conditions were reviewed by SORC and SRAB on an audit basis. All corrective actions are required to be closed by SORC before restart.

B. Self-Assessment Process

The key element of the self-assessment process is the Restart Review Panel and its support staff. The Panel is a temporary functional group chartered by and chaired by the Executive Vice President - Nuclear Operations. The Panel was established to lead and direct the self-assessment effort. The assessment process consists of gathering, analyzing, and synthesizing facts for each Underlying Root Cause, Specific Issue, and NRC Restart Guideline, to determine the adequacy of Corrective Actions.

1. Restart-Review Panel Organization

The Restart Review Panel consists of Niagara Mohawk executives and non-Company experts. The Panel members are listed below:

Mr. L. Burkhardt, III -	(NMPC) Exec. VP Nuclear Operations (Chairman)
Mr. J. T. Ash -	(NMPC) VP Consumer Services
Mr. D. P. Hall -	(Illinois Power Company) Senior VP
Dr. J. M. Hendrie -	Consultant
Mr. R. W. Kober -	(Rochester Gas & Electric) President
Mr. J. A. Perry -	(NMPC) VP Quality Assurance

Collectively, the Panel has broad experience and extensive knowledge of general management practices and nuclear operation, maintenance, engineering, quality assurance, and regulations.

The Panel's support staff consists of a staff director, three assessment area coordinators, nineteen primary assessors, and eleven interviewers. Figure III-1 shows the organizational relationships of the Panel and its staff. The assessors acted as the direct extension of the Panel members. Requirements for selection of assessors included knowledge of the subject area and independence from the line function that had direct responsibility for executing the corrective actions dealing with the issue to be assessed. The assessors were about evenly divided between Niagara Mohawk personnel and consultants. Consultants were used as assessors to provide additional expertise, or expertise sufficiently independent from the work being assessed. Additional people contributed support on an as-needed basis.

The Panel members (other than the Chairman) divided the twenty-eight assessment issues and took personal responsibility to act as advisors to the members of the support staff for each of the issues. This structure allowed each Panel member to focus his attention in areas where his expertise was greatest, to devote the required time to guide the assessors, and to participate directly in the assessment process. It also assured first-hand involvement of a Panel member in the assessment of each issue.

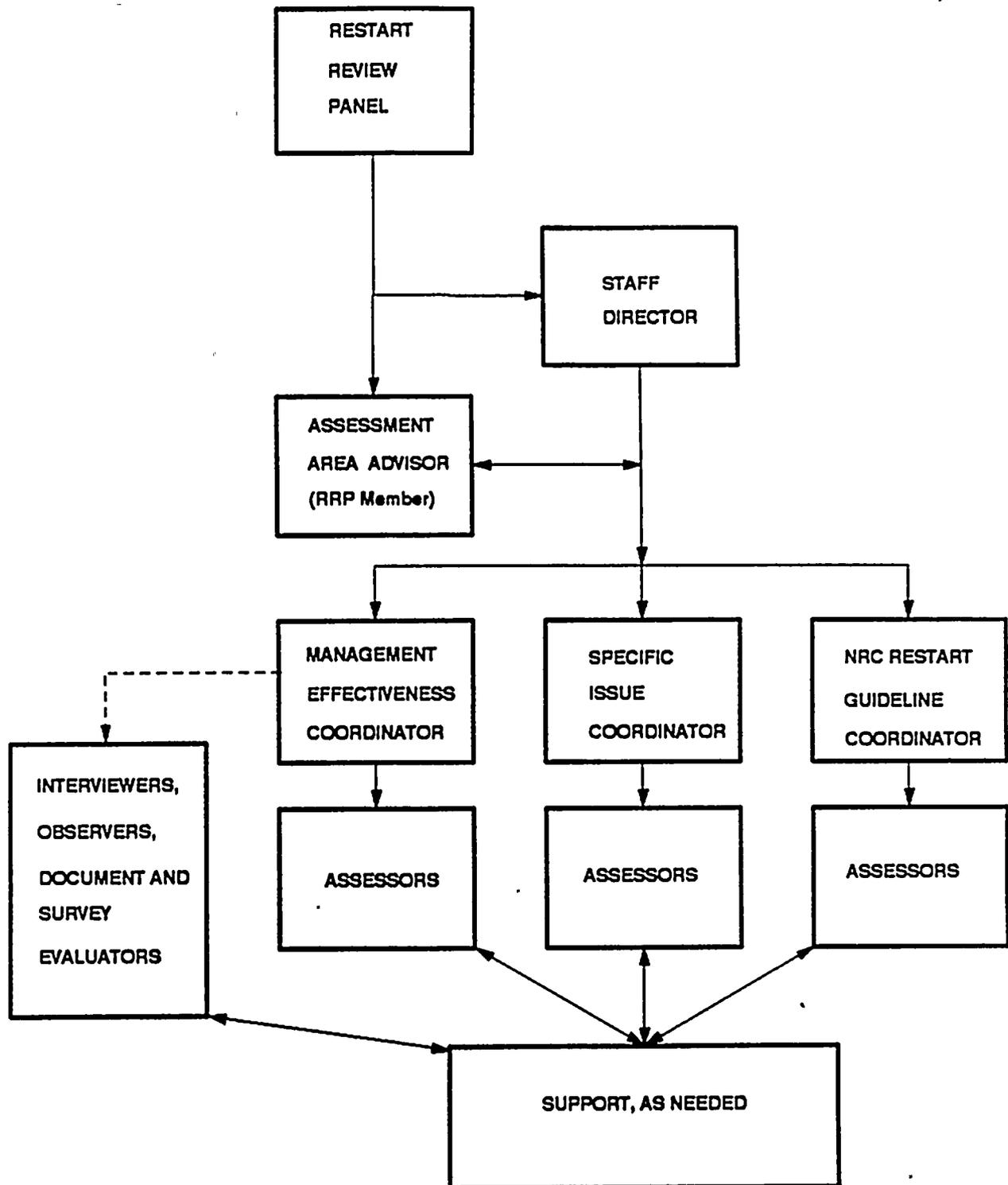
During the assessment process the Panel met several times for a total of ten days. During these meetings the Panel reviewed and approved various aspects of the assessment process, reviewed the status of the assessments, reviewed and approved assessment results, and provided feedback and recommendations to the assessors and line management. Since the beginning of April, over 6000 hours have been expended in assessment activities, which included the review of thousands of documents, interviews with hundreds of people and extensive direct observations throughout the plant, training center and other nuclear related facilities. The following sections provide additional information on the activities of the Panel and its staff.

2. Development of Bases, Targets and Assessment Plans

One of the first actions of the Panel was to establish a focus for the self-assessment process by developing bases for assessing restart readiness. The Bases for Assessing Restart Readiness are discussed in Chapter I of this report.

Assessment plans were developed by each assessor using the Bases and Targets as a guide. The assessment plans were designed to provide enough information to allow the assessor to judge whether or not the Targets associated with that issue had been met. The assessment plans were tailored to the assessment issues, and as such, vary in the techniques used to gather the requisite data. Each assessment plan was presented to the Panel for approval during one of the Panel meetings. Based on results and lessons learned during the assessment process, refinements were made to enhance completeness, accuracy, efficiency, and measurability of results.

FIGURE III-1
ASSESSMENT ORGANIZATION



3. Data Collection Techniques

Several methods were used to collect the information used for the Restart Self-Assessment. These techniques are described in the following paragraphs. The collection of this data was started well before the corrective actions were scheduled to be completed. This was done so that the results of preliminary assessments could be used to provide early feedback to the line organization when the assessors saw probable shortfalls in relation to the Targets. In addition, the early collection of data allowed the assessors to develop multiple data points in time so that trends could be observed, particularly in the corrective actions associated with management effectiveness issues. The initial data collection began in March 1989 and continued since that time.

a. **INTERVIEWS**

Interviews were widely used to collect data for the Restart Self-assessment. In particular, interviews were used to collect information on the effectiveness of corrective actions related to management and organizational issues. These issues generally required more subjective means of assessment than the Specific Issues and relied largely on information obtained through interviews, and longer-term observations of individual and group behavioral changes.

In contrast, for the Specific Issues data collection on completion of corrective actions was generally available through documentation and performance reviews. However, depending on the nature of the issue, interviews of personnel were conducted by assessors to collect information from individuals involved with the corrective action related to a Specific Issue.

b. **DOCUMENTATION REVIEWS**

The most widely-applicable assessment technique is a documentation review. These consist of checking records and other documents that demonstrate restart action completion. Although not usually sufficient as the only assessment tool, a documentation review is usually part of any assessment plan. It is generally used with one of the other techniques described in this section.

c. **PERFORMANCE REVIEWS**

Performance reviews consist of collecting and evaluating information gained by observing individuals, equipment, or activities. Examples are: simulator exercises, component and system pre-operational or surveillance tests, system walk-downs, area tours, and activity surveillances.

This technique is most useful when the assessment Target requires a demonstration of acceptable component, system or personnel performance. A performance review, together with a documentation review or personal interview, is often sufficient to assess a restart action.

d. PANEL MEMBER ACTIVITIES

In addition to the guidance provided at the formal Panel meetings, each Panel member, in his Advisor capacity, met with the assessor and the Task Manager to participate in the assessment analysis and the resolution of concerns identified through the assessment. The Panel members have also observed work activities in the plant and inspected plant cleanliness and the overall material condition. The Panel members also observed: simulator training, operators in the plant; and Nuclear Division personnel in various work situations to determine if the employees' exhibit the proper skills' and attitudes supporting improvements in the five management effectiveness areas.

4. Analysis and Evaluation

The foundation for the restart decision is the comparison of the situation found in the Nuclear Division to the state described by the Bases and the Targets. The Targets were set beyond the commitments made in the RAP in order to be sure that each RAP commitment was met with some margin of confidence. In many cases the Targets were set so that certain of the items identified in the Nuclear Improvement Program (to be completed after restart) had been started. The Panel was thus able to be sure that a bridge existed to get to the objective described in the NIP even though the particular NIP activity was not complete.

Information collected was analyzed by the Panel and its assessors to determine its accuracy in showing status relative to the assessment Bases. It was necessary to determine the following:

- 1) Is the corrective action completed or fully implemented?
- 2) Does the corrective action meet all the objectives of the Restart Action Plan for dealing with the identified deficiency?
- 3) If the corrective action is not required to be completed or fully implemented prior to restart, has sufficient progress been made to justify restart? Sufficiency can be determined by the following:
 - a. Has sufficient progress been made to assure that safe operation of the plant during normal and abnormal operations will not be jeopardized by any uncompleted action? and
 - b. Is an acceptable mechanism in place that assures the Company that the action will be completed within an acceptable schedule?

During its meetings the Panel reviewed interim and final assessment results and the status of Corrective Actions. Each issue was discussed and the Panel made suggestions to the Task Managers and assessors.

In the Management Effectiveness areas there were no absolute criteria to rely on to determine adequate progress toward achieving the desired state. In many instances, the Panel looked for the proper behavior being exhibited by managers in the more senior levels of the organization and for the proper programs to be in place. With the proper example being modeled by the senior managers and the Standards of Performance in place and being given high visibility, the Panel was confident that the desired behaviors and skills would become the norm in the Nuclear Division. The Panel's evaluation has indicated that this process is occurring.

When the Panel had determined that adequate progress had been made toward meeting each Target, it concluded that the associated Basis had been met. After determining that all seven Bases would be thus achieved, the Panel presented its findings to Niagara Mohawk's President and Chief Executive Officer. The Panel's findings are summarized in this Readiness for Restart Report and more detailed results of the self-assessment are included in Appendix 3.

C. INPO Assist Visit

When the Restart Review Panel found that the Unit was nearing readiness for restart and an initial draft of this Report had been prepared, Niagara Mohawk requested that INPO send a seven-person Assist Team to review the progress made in resolving the most significant findings of the Unit 1 March 1989 INPO Evaluation; in addition, the team spot-checked some of the Panel's findings during their visit. This action was to provide an external review of the progress the Company had made. The INPO Assist Visit was conducted during the week of August 14-18 and concluded that substantial progress has been made in resolving the performance problems noted in the March 1989 INPO Evaluation, thereby supporting the results of the Panel's assessment.

D. Executive Review

The Executive VP - Nuclear Operations, on behalf of the Panel, presented the results of the Restart Self-Assessment to the President and the Nuclear Oversight Committee of the Board of Directors. After review by the Nuclear Oversight Committee and the President, this Report was presented to the Chairman of the Board (CEO) for final approval and transmittal to the NRC Region I Administrator.

IV. Conclusions of Restart Assessment

This chapter summarizes the Panel's findings for each Underlying Root Cause, Specific Issue and the NRC Restart Criteria. The Basis and Targets for each of these areas are provided in a matrix in Appendix 2. Additional details concerning the assessment methods and results are contained in Appendix 3. Actions that remain to be completed prior to restart are discussed in Appendix 4, specifically item 1 in Appendix 4 requires the completion of all remaining RAP corrective actions. The status of the RAP corrective actions is tracked by the Outage Manager.

A. Underlying Issues

1. PLANNING AND GOAL SETTING

The results of this assessment indicate that management has characterized and communicated the direction for the Nuclear Division through vision, mission and goal statements. As part of the annual planning process, a strategic assessment will be performed to assess critical issues within the Nuclear Division and facing the industry. Interviews with department personnel indicate that managers are better able to deploy their resources consistent with the Nuclear Division vision, mission and goals. The specific actions that remain to be completed before restart are identified in Appendix 4. The following paragraphs summarize the significant corrective action results identified by the assessor's observations, interviews, and document reviews. The Panel concludes that the significant progress and the results achieved in this area support the restart of Unit 1.

Meeting observations and interviews indicate that Senior Management, by example, is continually reinforcing the importance of using the Nuclear Division vision, goals and Standards of Performance to focus department, group and individual work activities at all levels. An across-the-board awareness is beginning to develop on how an employee's individual performance should support the Nuclear Division's vision, goals and Standards of Performance. Performance Planning Worksheets, which are used for defining individual goals, are also beginning to be used to assign accountability to these goal setting efforts.

A Nuclear Division Integrated Priority System was originally identified as a NIP item to be completed after restart. However, the Panel urged that substantial progress be achieved before restart since it concluded that the priority system would help cure both planning and problem solving deficiencies. A draft version of the priority system has been approved by the Integrated Team and is being used on a pilot basis. The Panel has concluded that that progress has been made.

The Nuclear Improvement Program is in place and the NIP Program Administrator has been selected. The NIP is the basis for the 1989 Nuclear Division Business Plan. The 1990 Business Planning cycle has begun with a strategic assessment.

A draft policy/procedure for the Nuclear Division planning process is being circulated for comment. This policy institutionalizes the process within the Nuclear Division by defining responsibilities for the development, implementation and tracking of specific programs in support of the Nuclear Division objectives and goals. The finalized policy/procedure will be the foundation of the long range Nuclear Division planning activities.

2. PROBLEM SOLVING

The results of this assessment indicate that past and current performance-limiting deficiencies have been identified and are being resolved through self-assessment of past performance and implementation of appropriate corrective actions. The specific actions that remain to be completed before restart are identified in Appendix 4. The following paragraphs summarize the significant corrective action results identified by the assessor's observations, interviews and document reviews. The Panel has determined that the Nuclear Division has made significant progress toward improving the problem solving process and has established programs which will result in further enhancements. The Panel concludes that the effectiveness of the corrective actions in this area supports the restart of Unit 1.

The Panel has determined that the corrective actions taken regarding the identification and reporting of problems have been effectively implemented. A substantial effort was also expended to review licensing changes and analyses since the conversion of the license in 1974. This effort included in-depth analysis of a number of Technical Specification and facility license changes and problem reports involving Technical Specifications. These analyses revealed that the techniques used to resolve regulatory issues in the past were technically sound.

This assessment focused on the identification and determination of Root Cause, prioritization, implementation and assessment of effectiveness. Early in the assessment, the Nuclear Division's ability to identify problems and establish Root Cause was determined to be adequate. However, it was noted that there are a large number of individual systems for identification and tracking of problems. The Nuclear Division effort to integrate these systems will result in procedures which provide the hierarchy to accommodate lower tier department level procedures and provide for evaluation of deficiencies.

It was also clear, early in the assessment process, that the back end of the problem solving process, implementation of resolutions, was not effective. The principal deficiencies identified were:

1. An inability to prioritize a broad range of problems such that some could be legitimately deferred and efforts be directed at those providing the most return in safety and reliability; and
2. An inability to fully implement the resolution of a problem.

The first deficiency was addressed by accelerating completion of the Integrated Priority System discussed above under Planning and Goal Setting. The second deficiency resulted from a tendency to pass problem resolution responsibility from one person to another without naming someone as accountable for ultimate resolution. As a long term improvement item, a Policy Directive is currently being formulated which will refine the framework for assuring accountability and responsibility through resolution of safety significant problems.

The contents of the NIP that are important to problem solving include upgrades of Root Cause and trending programs, deficiency reporting, and lessons learned and operating experience programs. Following an interim assessment which indicated a procedural weakness in the "lessons learned" process, a Site Administrative Procedure was issued to implement the Nuclear Division policy on the Lessons Learned Program.

As a result of the progress made on these NIP items, some of which are Priority 3, the Nuclear Division's capability to implement an integrated and consistent problem solving process will continue to improve. Future self-assessment of the problem solving process is scheduled to be conducted by the Independent Assessment Group. The responsibilities of this Group are discussed in Chapter V.

At the Panel's September 1, 1989 meeting, there was a discussion of the radwaste spill which occurred in 1981. The Panel determined that the Company should have immediately focused management attention on the problem in order to expedite the cleanup. The Panel concluded that the current management attitudes would not allow a similar delay in addressing a comparable problem. The Panel Chairman directed the line organization to perform a root cause analysis of why the spill was not cleaned expeditiously; the analysis is to be completed before restart. Should this analysis indicate there are additional management effectiveness issues not already covered by the Underlying Root Causes of the RAP, a separate NIP item will be added to address required corrective actions. Additionally, cleanup of the radwaste spill will be added to the NIP as a separate item for greater visibility.

As a result of the Panel's discussion of Specific Issue-18, the 125 VDC system, the Panel Chairman directed the VP-Nuclear Engineering and Licensing to have his organization perform a root cause analysis of why SI-18 had not been closed earlier. The resulting root causes will be checked to confirm that they are covered by remedial action already underway. The analysis will also be used as a case study for management training in the Nuclear Engineering Department.

3. ORGANIZATIONAL CULTURE

The results of this assessment indicate that the culture of the Nuclear Division is changing as evidenced by the adoption and use of the vision, goals and Standards of Performance by the upper levels of the Nuclear Division organization. The specific actions that remain to be completed before restart are identified in Appendix 4. The following paragraphs summarize the significant corrective action results identified by the assessor's observations, interviews and document reviews. The Panel has determined that there are significant actions and behaviors which demonstrate a positive change in culture as it pertains to the needs of employees. The Panel concludes that the significant progress and results achieved in this area support the restart of Unit 1.

Early assessments of the five Underlying Root Causes, in the aggregate, concluded that progress was not yet satisfactory. From an organizational culture point of view, that unsatisfactory grade prompted management to focus additional attention on making the management style changes needed to correct the deficiencies identified in the RAP.

On a more specific basis, there are Management By Walking Around (MBWA) programs at several levels in the organization. During interviews, employees expressed recognition of the changed behavior of their bosses (seeing him or her more often), and appreciated the opportunity to interact with the boss in the work place. MBWA is being advocated and modeled from the top of the organization.

A number of those interviewed noted the trend toward a more participative management style. One person said that a year ago the attitude was "I am the boss, do it my way", while this same person now feels that input is solicited and given due consideration. Recently, a represented clerk was sent to a trade show in California since she was the person who would be able to best use the information gathered at the show when new equipment was purchased; historically, a higher level employee would have gone on such a trip. In this case the most appropriate person went.

Meeting observations indicate that the concept of self-assessment has been widely accepted and is being practiced throughout the organization. Managers are being critical of their own performance; they are seeking input on how they and their groups can improve.

The results of interviews and other observations indicate that communication has improved. The semi-annual Town Hall meetings have given every Nuclear Division employee the chance to hear the Executive VP set the tone for improved teamwork and the use of the chain of command to disseminate information to the employees. In the other direction, the attitude being fostered is to not just complain to others about a problem, but to tell your boss about it and get involved in the solution.

In spite of the work still remaining to get Unit 1 ready for restart, the Executive VP is trying to heighten the awareness of management as to quality of life aspects. There is now a rule that if a direct report to the Executive Vice President must work after 6 p.m. or more than four hours on weekends, he or she must write the Executive VP a letter explaining why that many hours must be worked. It is hoped that by example the leaders will show that the work can get done without spending every waking hour on the job.

A very important observation of the cultural change is that significant changes are being modeled at the department head level; these people are the role models for the entire Division in their display of teamwork, self-assessment, and their dedication to the pursuit of excellence. This unified support at the top of the organization will solidify these desirable cultural changes.

While progress on changing the culture has been very encouraging, there is still one area which can use improvement. Mid to upper levels of the Nuclear Division still spend significant amounts of time in meetings resulting in less time available to work with their employees and show a greater interest in them as people. The need for these meetings should decline as the many restart issues are closed, and as the management style shifts to MBWA wherein many topics can be resolved without the need for a formal meeting.

4. STANDARDS OF PERFORMANCE AND SELF-ASSESSMENT

The results of this assessment indicate that the Nuclear Division and support organizations have identified and effectively communicated the Standards of Performance. Interview results indicate a high awareness of the Standards of Performance, and meeting observations have noted many examples of management modeling the Standards of Performance. In addition, meeting observations and interview results reflect an increased awareness and use of self-assessment processes. The specific actions that remain to be completed before restart

are identified in Appendix 4. The following paragraphs summarize the significant corrective action results identified by the assessor's observations, interviews and document reviews. The Panel concludes that the effectiveness of the corrective actions in this area supports the restart of Unit 1.

Standards of Performance with emphasis on achieving results have been identified and communicated to all levels of employees. The results of interviews indicate that many organizations have conducted staff meetings to discuss how the Standards of Performance can be utilized and measured in their functional areas. Some managers have already incorporated Standards of Performance into the performance planning process. The Town Hall meetings held in early June focused on modeling the behaviors set forth in the Standards of Performance. Many employees are indicating they feel the Standards are being modeled and fellow employees are working hard to improve in these areas. Plans have been developed for implementation of supporting Performance Standards within major departments.

A comprehensive self-assessment program to assess readiness for restart has been conducted as described in this report. Progress has been demonstrated on the establishment of a long-term Nuclear self-assessment process with the formation of the Independent Assessment Group. This Group, discussed further in Chapter V, will address the integration of its efforts with existing self-assessment functions.

Observations and interviews indicate that there has been an improvement of the awareness for and increased use of self-assessment processes. At the Direct Report level, for example, periodic self-assessments dealing with the management effectiveness issues are continuing. Evidence of understanding of the self-assessment function has emerged among the Middle-level Managers. Many managers are using the self-assessment forms in their organizations and performing self-assessments of periodic staff meetings.

A Nuclear Division policy has been issued which defines responsibility for contractor oversight.

In summary, the Nuclear Division has set forth its expectations in terms of the Standards of Performance and is holding its employees accountable in terms of self-assessing against these expectations. The Independent Assessment Group will continuously monitor this area to help assure that this improvement will be a long-term cultural change.

5. TEAMWORK

The results of this assessment indicate that significant progress toward teamwork has been made as evidenced by individuals and groups effectively working together to make decisions and solve problems. The specific actions that remain to be completed before restart are identified in Appendix 4. The following paragraphs summarize the significant corrective action results identified by the assessor's observations, interviews and document reviews. The Panel concludes that the significant improvement in effective teamwork within the Nuclear Division and supporting organization supports the restart of Unit 1.

Interview results indicate that Nuclear Division employees, from the Executive Vice President to the worker level, are aware that effective coordination, communication, and cooperation are essential to meeting the Nuclear Division vision and goals. Virtually every interviewee reported that teamwork has improved during the past year. Examples of good and bad teamwork are regularly discussed at meetings of all levels of workers. Contributions of individual team members are also being recognized, both at meetings and through memoranda. Positive behavior that was previously taken for granted is now being recognized as a model for good teamwork.

What teamwork is--and is not--is also becoming more evident to Nuclear Division employees. In the past, various Nuclear and non-Nuclear groups were accused of lack of teamwork. In some cases this was true, but in many others the problems stemmed from lack of effectiveness and not a lack of teamwork. These groups have always wanted to cooperate, but may not have had the training, resources, or skills to meet the expectations of others. Many of these "teamwork" problems are now being solved by better definition of roles and responsibilities, by additional resources, and by training.

Nuclear Division employees realize that it is important that all affected parties contribute to decision-making and problem-solving. The most important element of this process is timely feedback to all who provided input, regardless of whether or not this input supported the ultimate decision or solution. Based on the results of assessment interviews, this feedback process still has room for continued enhancement, especially at the supervisor/worker level.

While this assessment has concluded that the necessary teamwork has been achieved, it cannot be emphasized strongly enough that all of the efforts currently taking place to enhance and sustain the improvements in teamwork over the long term must continue. Open and honest communication in both directions and a participative style of management are crucial to the successful startup of Nine Mile 1 and to the ultimate achievement of the Nuclear Division vision and goals. Teamwork, along with the other four Underlying Root Causes, will be a priority topic for the Independent Assessment Group work plan.

B. Specific Issues

The results of the assessments for the Specific Issues indicates that the corrective actions have been effective and provide management with assurance that these issues concerning operator training and qualification, administrative process, and hardware deficiencies will not have an adverse effect on safe plant operation. The specific actions that remain to be completed before restart are identified in Appendix 4. The following paragraphs summarize the significant corrective action results identified by the assessor's observations, interviews and document reviews.

1. Outage Management Oversight

The results of interviews and observations indicate that the interim outage management organization is in place and functioning effectively. The required temporary procedures governing closeout of the restart related activities have

been issued and are being used. The organization has identified all activities needed for restart, executes the scheduling and tracking functions, and provides the Nuclear Division management with the information to make sure that all the required work is completed accurately. The permanent organization has been approved and is being staffed; that organization will be in place for the next refueling outage. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

2. Maintaining Operator Licenses

The assessors have observed operating shifts, simulator and classroom training sessions, OTPAC and NRC inspection exit meetings. From these observations, it is apparent that Operations Management has demonstrated ownership of the requalification training program. The procedure for Simulator Configuration Management has been revised and simulator-plant fidelity differences are being discussed at training sessions. The conflict between Operations and Training that was previously observed has been resolved. The number of trainers has been increased. In general, operators understand expectations regarding training attendance and conduct. The operators have also generally demonstrated a professional attitude in identifying and resolving concerns associated with maintaining their licenses, and they understand and accept rising performance expectations. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

3. Emergency Operating Procedures

Based on operator and instructor interviews, observation of operator performance, and review of lesson plans, training aids, examinations, simulator scenarios, and training records, the operators understand the bases of EOPs and how to enter them to respond to accident conditions. Operators are confident in using EOPs. Because of the human factor reviews, operator involvement in EOP changes and validation, and changes that occurred at the simulator, operator attitude and understanding have greatly improved. Discussions indicate that the Operation and Training Superintendents complement and support each other in their tasks. There is stronger support by Operations and Training management in identifying deficiencies. The Operation Superintendent demonstrates good management in dealing with people, respects the competence of the operators, allows and encourages the operators to learn, and requires strict adherence to training programs. Simulator exercises have demonstrated the ability of the operators to properly execute the Emergency Operating Procedures. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

4. Inservice Inspection

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessment actions found that the corrective actions are satisfactory. The inspections and exam packages for the First Ten Year Interval are in compliance with ASME Code and NRC requirements, and all of the required inspections will be completed by the end of the outage. The interim ISI organization is working well. Procedures for the dispositioning of deficiencies are in place. The plan for the permanent ISI organization is described by the Unit 2 procedures where it will next be employed. In the ISI area, steps have been taken to place contractors under direct Site supervision. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

5. Control of Commercial Grade Items

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the control of commercial grade material. From these assessment actions, the Panel concludes that a successful program for controlling commercial grade items has been developed and implemented. The process is relatively new and personnel are becoming more familiar with the process. As training and experience are accumulated, efficiency and responsiveness will continue to increase. Regular meetings are held to facilitate communications among affected organizations regarding potential materials problems. Niagara Mohawk has been initiating communications with other utilities to share experiences and data, and to explore the potential for cooperative ventures in commercial grade items procurement. These activities provide strong assurance that recurrence of this concern will be prevented. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

6. Fire Barrier Penetrations

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessment actions found that the corrective actions are satisfactory. Fire Barriers and Penetrations have been inspected and deficiencies corrected. The design data base and drawings will be updated. Surveillance, Breach Permits and other procedures will be revised or prepared to incorporate the RAP corrective actions. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

7. Torus Wall Thinning

The assessors reviewed documentation and backup calculations performed by the Company and questioned the adequacy of the data and statistical analyses. Even though this issue was considered closed by the Company and the NRC, in order to respond to the assessor's concerns, the Company performed additional thickness measurements and performed more rigorous analyses on the data.

Interior inspections included visual, photographic, and surface impressions. Area averaged ultrasonic measurements of the thickness of each plate making up the bottom mid-bay portion of 20 torus bays were taken. The analyses concluded that the torus wall thickness is adequate for more than the next operating cycle. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

8. Scram Discharge Volume

The assessors reviewed the documentation related to this issue and interviewed key individuals involved in the resolution of the issue. Policies and procedures governing commitments are being revised to assure they are effective in addressing the need to obtain formal NRC concurrence with Niagara Mohawk actions with respect to exceptions to new or revised regulations. A test procedure to validate the adequacy of the scram discharge volume was prepared, and the test was acceptably performed. Procedures for tracking of NRC commitments on the Nuclear Commitment Tracking System were issued. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

9. Emergency Condenser and Shutdown Cooling Valves

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessment actions found that the NRC and Niagara Mohawk have agreed on the resolution of all Appendix J issues. Niagara Mohawk has received exemptions for testing the emergency condenser valves and the shutdown cooling systems valves. A procedure to provide a water seal for the containment spray valves has been prepared. IST personnel verified that all items determined to be IST issues were being tested in accordance with the IST program. For the long term, an Appendix J program plan is being developed to address all aspects of Appendix J and is to be administered by a specific department. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

10. Reactor Vessel Pressure/Temperature Curves

The assessors reviewed the documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessment actions found that Niagara Mohawk notified the NRC of the possible discrepancy in the reactor vessel pressure/temperature curves in a letter on June 16, 1988. Included in this letter was a summary of the information available to Niagara Mohawk. The NRC performed a safety evaluation, transmitted to Niagara Mohawk on September 14, 1988, that concluded that the pressure-temperature limits are conservative and acceptable. For the long term, Niagara Mohawk has established a program and engaged a contractor to determine the identity of the test material in the surveillance program and the ability to justify less conservative pressure/temperature limits. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

11. Erosion/Corrosion Program

The assessors reviewed documentation related to this Issue and interviewed key individuals involved in the resolution of the Issue. The assessment actions found that pipe wall thickness measurements have been made under the erosion/corrosion program. These measurements indicate that all locations inspected are within acceptable limits or have been evaluated against specific loading criteria, and have included projected thinning during the next operating cycle, and found acceptable. Relevant procedures have been revised to address consistent marking of piping and components to assure repeatability of measurement location. A surveillance of the contractor's grid marking activities was conducted during the current outage. The surveillance confirmed that grid layout spacing and orientation were correct. The Unit 1 baseline measurements have been made. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

12. Motor-Generator Set Battery Chargers

The assessors reviewed documentation related to this Issue and interviewed key individuals involved in the resolution of the Issue. The assessment actions found that the MG set battery chargers have been classified as safety related and the Q-list has been updated. A lessons learned transmittal, detailing the concern and cautionary statements about using inadequate documentation, has

been issued and reviewed by personnel who perform safety class determinations. A task force reviewed and found acceptable the Appendix B determinations that had downgraded systems or components. Procedures for performing Appendix B determinations have been augmented to provide guidance on technical aspects of the process. Personnel who will be performing Appendix B determinations have been identified and have reviewed the lessons learned transmittal on the process and procedures. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

13. I&C Technician Allegation Issue

The assessors reviewed documentation related to this issue, interviewed key individuals involved in the resolution of the issue and also surveyed individuals and observed meetings. The long-term management effectiveness programs which resulted from the I&C Technician Allegations were incorporated in the RAP and most of the corrective actions associated with this issue are duplicated elsewhere in the RAP. In order to determine if the RAP corrective actions were effective regarding implementation of these programs, the assessment focused on the area of problem solving and associated communication issues. The assessor found that there was a consensus that significant improvement had been made in problem solving. Although there is room for improvement in communication, particularly between on-site and off-site groups, there is evidence of significant effort and improvement in teamwork and communication. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

14. Safety System Functional Inspection

The assessors reviewed documentation related to this Issue and interviewed key individuals involved in the resolution of the Issue. The assessor noted that the required calculations and analyses have been completed and are adequate to resolve the concerns raised in the NRC's Safety System Functional Inspection. Necessary modifications required before restart and set point changes resulting from the calculations and analyses have been initiated and will be completed prior to restart. Procedures and specifications have been revised to strengthen the control of design configuration in order to prevent future deficiencies. A comprehensive plan for design basis reconstitution is in place. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

15. Cracks in Walls and Floors

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessment actions found that corrective actions are satisfactory and agree with the previous evaluations: the cracking in reinforced concrete is typical for structures of this construction and type, and are not of structural concern. The cracking does not affect load capacity or serviceability, and the identified root causes do not indicate ongoing problems or future concerns. A program for identifying, mapping, and assessing any additional cracks in concrete is planned under the Nuclear Improvement Program. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

16. Feedwater Nozzles

The assessors have observed that the examination requirements are documented, the procedures used to conduct the examination are adequate, and the personnel using them were effectively trained on their application. The assessor reviewed the exam records for each of the five inspections. The method of evaluating indications was found to be appropriate and the calculations accurate. The crack growth calculations were revised and updated to include recently identified indications. The assessor found these calculations to be well founded and complete. The calculations conclude that all indications are within the limits established by NMPC and Code Criteria. The Company will submit the Second Ten Year Interval ISI Program Plan six months prior to the next refueling outage. The requirement for full nozzle inspection per NUREG 0619 has been appropriately addressed and documented. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

17. Inservice Testing

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessor determined that the NMP1 Second Interval IST Program is acceptable and is in compliance with the regulatory codes and standards. A consultant was hired to do an in-depth review of the Core Spray and Reactor Building Closed Loop Cooling systems as regards in-service testing requirements. The consultant's report concluded that the program is acceptable and in compliance with regulatory codes and standards. The report was used as part of the basis for the assessor's overall positive findings. The assessor noted that the NRC has given interim approval for both the IST Program and the included relief requests. The Administrative Procedures are being revised to properly administer the program and to maintain the program relative to future design and/or Licensing changes. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

18. 125 VDC System Concerns

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessor determined that the scope and content of the corrective actions are such that the technical deficiencies in the area of control circuit voltage drop and insufficient battery capacity will be resolved by appropriate plant modifications and procedure revisions. Calculations and analyses performed to support the resolution of the technical deficiencies were acceptable and appropriately reviewed and approved by management. Battery testing requirements have been determined and documented. Required tests have been scheduled to be conducted prior to restart. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

C. NRC Restart Criteria

Management has developed and issued functional organization charts which establish and communicate responsibilities. Management objectives have been established and communicated to the staff, and management has initiated an MBWA program to improve visibility and responsiveness in the workplace. In addition, physical plant progress has been significant in areas such as reduction in outstanding work requests, maintenance items, and system readiness for operability. Identification and monitoring of regulatory issues related to restart and safe operation (including Technical Specification amendments necessary for restart) are adequately controlled by Licensing. In spite of the work still remaining to complete the Restart Corrective Actions and to get Unit 1 ready for restart, it appears that the overall program is well controlled and processes are in place to sufficiently address each of the NRC Restart Guidelines. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.



V. PREVENTING, DETECTING, AND CORRECTING FUTURE PROBLEMS

The Restart Self-Assessment has resulted in the conclusion that Niagara Mohawk has the management and leadership skills to prevent, or detect and correct, future problems. The information that supports this conclusion is contained in Chapter III and the appendices to this report. In particular the assessment found that the Nuclear Division and support groups have adopted high standards of performance which are being demonstrated in the identification and effective resolution of problems. The assessment also found that the corrective actions, such as "in-line" training, had improved the effectiveness of planning and teamwork in making decisions and solving problems related to performance limiting deficiencies. Finally, the assessment identified programs and policies that had been developed to continue to enhance the assessment and improvement of the activities of the Nuclear Division. This section of the report briefly describes some of the additional actions Niagara Mohawk is taking to enhance its ability to prevent, detect and correct future problems. The programs discussed below are part of the Nuclear Division and supporting groups/organizations ongoing activities.

The Nuclear Improvement Program includes actions to develop a long-term assessment program for preventing, or detecting and correcting, future deficiencies that could jeopardize safe operation of our nuclear power plants. This section of the report discusses the following major elements of the long-term assessment program:

- ° Expanding the existing assessment programs and integrating into them the concepts established during the restart effort;
- ° Establishing a separate functional assessment group; and
- ° Continuing the general practice of internal assessment activities while the permanent program is being established.

A. Expansion of Existing Programs

A key element of the assessment program is to enhance existing programs by incorporating into them specific inter- and intra-departmental assessment activities. Expanding existing programs is an evolutionary process, which is often more readily accepted than new programs that introduce revolutionary change from established practice. The following are two examples of program enhancements already under way:

Commitment Follow-up (under Nuclear Compliance and Verification) - to ensure continued implementation and effectiveness of commitments made to senior management, the NRC, INPO and other agencies.

Annual Strategic Assessments - compare current and past performance to identify strengths and weaknesses; identify internal and external influences on the Nuclear Division and the nuclear industry; and identify strategic initiatives for Nuclear Division Planning.

B. Independent Assessment Group (IAG)

The IAG is a small group reporting to the Executive Vice President - Nuclear Operations. This group conducts or facilitates independent formal, special, and informal assessments of critical areas of Nuclear Division and support group programs and activities. The assessments will help to identify strengths, weaknesses and deficiencies. Reports will be presented to the Executive Vice President - Nuclear Operations and affected managers.

The need for improvements will be identified and presented to line management for appropriate action. IAG personnel will not have line management or organization responsibilities or have direct functional responsibility in areas being assessed. Their most important function will be to evaluate and encourage the self-assessment process within the team organization.

Specific areas of assessment will be operations and maintenance; technical support and engineering; radiation and environmental protection; support programs; and overall management and organizational effectiveness, such as, communication, team-building and leadership.

C. General Ongoing Self-Assessments

The term "self-assessment", as used in Niagara Mohawk's Nuclear Improvement Program, refers to assessment activities conducted internally by responsible members of a department or group. Such internal assessments may be supported by contracted individuals or groups as needed. Self-assessment activities can include:

Meeting evaluations, conducted after meetings to identify strengths, weaknesses, and deficiencies, with recommendations for improvement.

Weekly progress evaluations, conducted at week's end to identify strengths, weaknesses, and deficiencies, with recommendations for improvement.

Assessment of the effectiveness of corrective action results and their continued implementation.

Development of performance indicators for monitoring performance and trends. Evaluation of trends to determine acceptable performance levels and needed corrective actions.

Monitoring department performance in comparison with goals, objectives, and action plans.

Comparison of programs and performance with industry standards and averages.

The SRAB is establishing an ongoing method for continually assessing the effectiveness of the Nuclear Improvement Program.

RESTART READINESS REPORT

September 8, 1989

APPENDIX 1 GLOSSARY OF TERMS

Action Plans - Detailed sequences of steps and resource requirements that describe how an individual will accomplish the objectives for which he is responsible.

Assessment Program (also Nuclear Assessment Program) - The aggregate of short- and long-term programs for evaluating the completeness and effectiveness of restart corrective actions, and to prevent, or detect and correct, future deficiencies. The overall program employs self-assessment programs, assessors and panels, and will incorporate approved assessment practices into existing Nuclear Division programs.

Basis) (also Restart Basis) - A description of the state expected when sufficient progress toward achievement of the Corrective Action Objectives had been achieved.

Buy-in (also Subscribe to) - Ownership by personnel directly affected by a decision or set of actions. Buy-in is achieved by involving people in decision-making or action development in a manner that promotes their awareness, acceptance, and support (agree with the logic and feasibility of the decision or action).

Corrective Action (also Restart Corrective Action) - Measures undertaken to resolve the cause(s) of identified deficiencies. The Restart Corrective Actions for Nine Mile Point 1 are delineated in the Restart Action Plan.

Corrective Action Objective - A general statement of desired level of performance to be achieved before restart, or, if explicitly stated, over a period of time after restart. Post-restart aspects of continuing issues are addressed in the long-term Nuclear Improvement Program (NIP).

Executive Officers - Niagara Mohawk's Chief Executive Officer (CEO), President, and Executive Vice President - Nuclear Operations

Goals - Goals are specific targets, or milestones, to be achieved within established time frames, in support of reaching designated objectives.

In-Line Training - Informal training accomplished while performing work. In-line training can involve organizational development experts who provide management coaching; facilitate staff meetings for discussion of good management practices; lead specific management and leadership skills sessions; and reinforce good management practices, as demonstrated by effective role models. The concept involves learning by precept and example, including Standards of Performance implementation.



Independent Assessment Group (IAG) - A small group of employees (reporting to the Executive Vice President - Nuclear Operations) that conducts or facilitates independent assessments of critical areas in the Nuclear Division. The IAG will continue to function after restart.

Integrated Team - A designated group of managers representing key organizational functions associated with operating and supporting Niagara Mohawk's nuclear power plants.

Line Management or Organization - Managers or elements of organizations having direct responsibility and accountability for specific functions associated with managing and operating Niagara Mohawk's nuclear power plants. These terms include support groups such as Purchasing and Materials Management.

Management Review Groups - The Site Operating Review Committee (SORC) and the Safety Review and Audit Board (SRAB). These review groups are normally responsible for the review and approval of safety and operational issues. For this Report, the management review groups are discussed in the context of restart corrective action assessments.

Managers - A generic term generally referring to individuals having supervisory responsibility. See also Line Management and Mid-level Managers.

Mid-level Managers - First level of line management. Mid-level managers directly report to Senior Managers, and usually have one or more levels of management reporting to them.

Mission - The reason for an organization's existence, including who is served inside and outside the organization, and what is to be done for them.

Nuclear Division - The Niagara Mohawk organizational elements that administratively and functionally report to the Executive Vice President - Nuclear Operations.

Nuclear Improvement Program (NIP) - The organized effort to improve Nuclear Division and support group performance, including the corrective actions to be completed before and after restart. The Restart Action Plan (RAP) is the short term portion of the NIP, comprising the corrective actions to be completed, resolved, or adequate progress shown, before Unit 1 restart.

Nuclear Oversight Committee (NOC) - A committee of Niagara Mohawk Directors, including the Executive Vice President - Nuclear Operations, which is responsible for overseeing nuclear operations.

Operational Responsibilities - A brief description of the overall responsibilities of an organization.

Organizational Culture - The mind-sets, attitudes, and approaches shared by the individuals who, together, comprise an organization; the collective conduct and behaviors that uniquely characterize an organization's method of doing business. When clearly verbalized, and effectively disseminated and administered, the vision, mission, goals, and Standards of Performance established by upper management are assimilated by the staff in general, and are incorporated into the Organizational Culture.

Performance Indicators - Observable measures or attributes that reflect how well the vision statement, mission statement, critical issues, or objectives are implemented.

Performance Standards - The set of administrative, department-level, standards for day-to-day conduct, taking into account the specific needs dictated by departmental functions. Performance standards support, and are collateral to, division level Standards of Performance. In this Report, "performance standards" is in lower case to differentiate the term from Standards of Performance. (See also Standards of Performance.)

Priority of Corrective Action - An assignment of importance for specific corrective actions related to Unit 1 corrective actions. For example, Completion of Priority 1 corrective actions (or demonstrated sufficient progress) is a prerequisite to restart. (See RAP Appendix C for more details.)

Report on Restart Readiness (RRR) - This document containing the results of Niagara Mohawk's restart-readiness assessments and justification for permitting Nine Mile Point Unit 1 to be restarted. This Report was prepared in response to Confirmatory Action Letter (CAL) 88-17, action number 3.

Restart Action Plan (RAP) - The restart action plan (and document so titled) comprises the short-term portion of Niagara Mohawk's Nuclear Improvement Program (NIP). The RAP addresses actions 1 and 2 of CAL 88-17 in addition to near-term performance improvement measures.

Restart Readiness Self-Assessment - The aggregate of all assessments performed by Niagara Mohawk, including assessments by Niagara Mohawk's line organizations, independent Niagara Mohawk assessors, and external groups, to determine overall readiness for restart and safe operation, including progress toward long-term improvements in overall effectiveness. (See also Self-Assessment)

Restart Review Panel (RRP) - A special panel of individuals chartered by and reporting to the Executive Vice President-Nuclear Operations. The RRP is charged with assessing and reporting the adequacy of performance improvements achieved through the Restart Action Plan. The intent of the Panel's assessment is to establish a high level of confidence in Niagara Mohawk's readiness for Nine Mile Point Unit 1 restart.

Restart Review Panel Support Staff - A group that supports implementation of the Restart Review Panel's assessment activities. The RRP staff consists of Company employees and supplementary consultants, headed by a full time Director who reports to the RRP Chairman.

Restart Task Force - A group chartered to consult with line management on developing the Restart Action Plan and facilitating its development and initial implementation. (See RAP Appendix A for more details.)

Safety Review and Audit Board (SRAB) - A board that provides independent review and audit of designated activities in nuclear power plant operations, nuclear engineering, chemistry and radiochemistry, metallurgy, instrumentation and control, radiological safety, mechanical and electrical engineering, and quality assurance. Specific responsibilities of the SRAB are detailed in the Technical Specifications.

Self-Assessment - As used in the Nuclear Improvement Program, assessment activities that are carried out internally by responsible members of a Niagara Mohawk department or group, supplemented as needed by supplementary groups or individuals. (See also **Restart Readiness Self-Assessment**)

Senior Managers - In the Nuclear Division, the Executive Vice President - Nuclear Operations, and the individuals reporting directly to him. (When the term "direct report" is used in this Report, it refers only to the latter.)

Site Operations Review Committee (SORC) - The committee to advise the General Superintendent - Nuclear Generation on nuclear safety issues. Specific responsibilities and composition of the SORC are detailed in the Technical Specification.

Standards of Performance - The set of Nuclear Division values for measuring conformance with expected personnel performance in the conduct of Company business. In this Report, the term is capitalized to differentiate it from "performance standards." (See also **Performance Standards**.)

Support Groups - Organizations that support management and operation of the nuclear facilities, but do not administratively report to the Executive Vice President - Nuclear Operations. Examples are Purchasing, Materials Management, and Employee Relations.

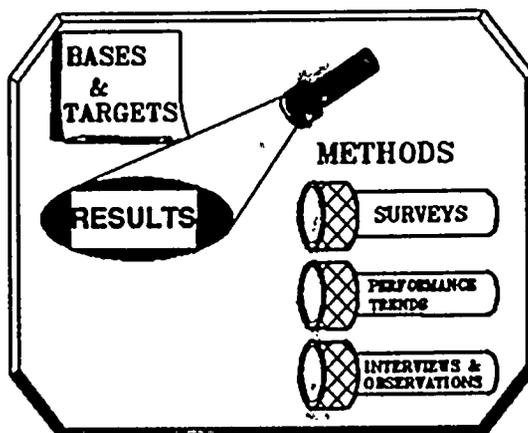
Target - A qualitative, non-absolute, measuring criteria used to determine when a Basis (Restart Basis) had been met.

Underlying Root Cause - A common or programmatic cause for general observed deficiencies. An underlying root cause contributes to other deficiencies, but no other cause directly underlies this basic deficiency.

Verification Action - Measures taken to confirm that a corrective action has been satisfactorily implemented or completed.

Vision - The overall long-term expectation for an organization, as promulgated by senior management.

**NINE MILE POINT UNIT ONE
RESTART READINESS
BASES & TARGETS MATRIX**



A2-1

APPENDIX 2

RESTART READINESS REPORT

ISSUE #1 REV #0 6/21/89

ISSUED BY *E.F. Hoffman*
EDWARD F. HOFFMAN
RESTART ASSESSMENT STAFF DIRECTOR

1 . MANAGEMENT AND ORGANIZATIONAL EFFECTIVENESS

ASSESSMENT AREA COORDINATOR : A.J. TUOHY

ISSUE 1 REV 0 June 21, 1982

READINESS FOR RESTART : BASES	RESTART ACTION PLAN UNDERLYING ROOT CAUSE	READINESS FOR RESTART : TARGETS	PRINCIPAL ASSESSOR
<p>BASIS #1. PLANNING AND GOALS "Management will have assessed critical issues within the Nuclear Division and facing the nuclear industry. Based on this assessment and in support of Corporate Mission and goals management shall have characterized and communicated the direction for the Nuclear Division through vision, mission, and goal statements. Managers can deploy their resources consistent with the ND vision, mission, and goals to provide assurance that plant operations will be conducted in compliance with regulations and in a safe and reliable manner."</p>	<p>1. PLANNING AND GOALS "The management tasks of planning and goal setting have not kept pace with the changing needs of the Nuclear Division and with changes within the nuclear industry." DIVISION SPONSOR: SKIP STUART</p>	<p>1. TARGETS FOR CAO 1.1 a). Restart Corrective Actions adequately support the Corrective Action Objectives and objectives adequately address desired change in performance. b) All Restart Corrective Actions which address CAO 1.1 have been implemented and verified. c) Management will have reviewed recent SALP and INPO evaluations to judge how NMPC rates compared to the rest of the nuclear industry. This review will be factored into the vision, mission, and performance expectations documents. d) Nuclear Division employees are aware of and familiar with the Nuclear Division vision, objectives, goals, and standards of performance. - Senior management understands the current 1989 planning process, agrees with it, and is using the Nuclear Division vision, objectives, goals, and standards of performance - Managers understand the reason for incorporating the Nuclear Division vision, objectives, goals, and standards of performance into their department's planning process. - Supervisors are aware that there are N.D. Vision, objectives, goals, and understands the linkage between these and the standards that impact their department. - Workers are aware that there is a vision and mission and how their department's goals and individual performance supports the vision and mission e) Necessary policies and procedures have been developed/revised and are in place and training has been planned, as required, to begin using the 1989 Nuclear Division vision and goals as a basis for the current planning process.</p> <p>-----</p> <p>2. TARGETS FOR CAO 1.2 a) All Restart Corrective Actions which address CAO 1.2 have been implemented and verified. b) Employees involved in inputting to and maintaining the Nuclear Commitment Tracking System have been trained on the program and are aware of and respond to the needs of its users. A person is assigned the responsibility for and held accountable for notifying the appropriate Nuclear Division department head that a commitment date has been missed. c) Restart Corrective Action products are being used to plan and schedule Nuclear Division activities and have improved the process. d) The policy and/or procedure (which includes who has the responsibility and the authority) for establishing priorities has been clearly defined, is in place and has been communicated to appropriate personnel. e) Actions have been identified or a program has been developed to implement a planning and scheduling process that defines specific performance objectives, assigns responsibilities and priorities, and integrates and aligns the activities. Accountabilities and schedule have been specified for implementing these actions.</p> <p>-----</p> <p>3. TARGETS FOR CAO 1.3 a) Restart Corrective Action 1.3.1 has been implemented and verified. b) The definition of and process for strategic and tactical planning has been specifically documented and communicated. Accountabilities and schedule have been specified. c) Actions have been identified to develop and implement a comprehensive Business Planning Process.</p>	<p>FRED LANGE</p>

READINESS FOR RESTART : BASES	RESTART ACTION PLAN UNDERLYING ROOT CAUSE	READINESS FOR RESTART : TARGETS	PRINCIPAL ASSESSOR
<p>BASIS #2. PROBLEM SOLVING "Past and current performance limiting deficiencies shall have been identified and resolved through the self-assessment of past performance and the implementation of appropriate corrective actions. A detailed plan for implementing an improved problem solving process with provisions for a) problem identification, b) systematic causal analysis, c) corrective action planning, d) implementation management, and e) assessment of results achieved shall be in place and actions in progress to implement this plan. A process based on that used in the development of the restart action plan shall be used until the long term program is fully in place."</p>	<p>2. PROBLEM SOLVING "The process for identifying and resolving issues before they become regulatory concerns was less than adequate in that there was not an integrated or consistent process used to identify, analyze, correct, and assess problems in a timely way." DIVISION SPONSOR: CARL TERRY</p>	<p>1. TARGETS FOR CAO 2.1</p> <ul style="list-style-type: none"> a) Restart Corrective Actions adequately support the Corrective Action Objective. b) All Restart Corrective Actions which address CAO 2.1 have been implemented and verified. c) RCAs have been effective in developing and implementing an integrated and consistent interim problem solving process. <ul style="list-style-type: none"> - RCA lessons learned are incorporated in the problem identification and solving process. - Training consistent with the individual's role in the application of the problem solving process has been completed and the process is currently in use. - Corrective actions identified per the process are effective in resolving the immediate problem and prevent recurrence of the problem. - The implementation of corrective actions is subject to follow up for possible further action. - The process is being implemented by each affected department. d) A long-term plan has been documented to develop and implement an integrated and consistent problem solving process. e) Future self-assessments of the problem solving process are scheduled to be conducted by the Independent Assessment Group. 	<p>DICK VOLLNER</p>

READINESS FOR RESTART - BASES	RESTART ACTION PLAN UNDERLYING ROOT CAUSE	READINESS FOR RESTART - TARGETS	PRINCIPAL ASSESSOR
<p>BASIS #3. ORGANIZATIONAL CULTURE There is evidence that the upper levels of the Nuclear Division organization have adopted and are using the vision, goals, and standards of performance in day to day operations and in addressing employee needs and concerns.</p>	<p>3. ORGANIZATIONAL CULTURE "Management's technical focus has created an organizational culture that diverts attention away from the needs and effective use of employees." DIVISION SPONSOR: JIM WILLIS</p>	<p>1. TARGETS FOR CAO 3.1 a) Restart Corrective Actions adequately support the Corrective Action Objectives and all Restart Corrective Actions which address CAO 3.1 have been implemented and verified. b) Nuclear Division employees at all levels of the organization are aware of and familiar with the November 1988 Nuclear Division organizational changes, the status of actions on 1988 commitments and the Restart Action Plan. c) Employee feedback on the Restart Action Plan was solicited, provided and incorporated, as appropriate. d) Practices and Policies are in place to improve management's attention to employee needs, utilization and feedback e) Managers exhibit improved "people" skills such as the listening part of communication, and conflict resolution. 2. TARGETS FOR CAO 3.2 a) Restart Corrective Action 3.2.1 has been implemented and verified. b) Senior management knows what team building and coaching skills look like from a behavioral perspective, they know which ones they need to work on, and they have individually developed plans for addressing their needs. In addition they have within their departments an ongoing process to ensure that team building and coaching skills, tools and accountabilities are in place and used. 3. TARGET FOR CAO 3.3 a) Restart Corrective Action 3.3.1 has been implemented and verified.</p>	<p>DICK DALEKE</p>
<p>BASIS #4. STANDARDS OF PERFORMANCE & SELF-ASSESSMENTS "Standards of performance with emphasis on achieving results have been identified, communicated and plans have been developed for implementation of supporting Performance Standards within major departments throughout the Nuclear Division; a comprehensive self-assessment program to assess readiness for restart has been conducted; progress has been demonstrated on the implementation of the plan for the development of the long-term Nuclear self-assessment process."</p>	<p>4. STANDARDS OF PERFORMANCE & SELF-ASSESSMENTS "Standards of performance have not been defined or described sufficiently for effective assessment, and self-assessments have not been consistent or effective." DIVISION SPONSOR: MARK PEIFER</p>	<p>Restart Corrective Actions adequately support the Corrective Action Objectives.</p> <p>1. TARGETS FOR CAO 4.1 a) The Restart Corrective Actions associated with the Corrective Action Objectives have been implemented and verified. b) A set of Nuclear Division standards of performance which are consistent with the division's vision for excellence exist and have been communicated to all levels of the organization. 2. TARGETS FOR CAO 4.2 a) An independent assessment function is established and integrated with other assessment groups in the company, i.e. SRAB, QA. b) Self assessment activity at the departmental and programmatic level has been established and/or improved.</p>	<p>JOE LEONE & LINDA ZIMMERMAN</p>

READINESS FOR RESTART - BASES	RESTART ACTION PLAN UNDERLYING ROOT CAUSE	READINESS FOR RESTART - TARGETS	PRINCIPAL ASSESSOR
<p>BASIS #2. TEAMWORK "Progress toward effective teamwork within the Nuclear Division as evidenced by working together to make decisions, to solve problems, and, in general, to 'get the job done correctly and completely'. This progress will be evidenced both within and between departments in the Nuclear Division."</p>	<p>5. TEAMWORK "Lack of effective teamwork within the Nuclear Division and with support organizations is evidenced by lack of coordination, cooperation, and communication in carrying out responsibilities.</p> <p>DIVISION SPONSOR: KIM DAHLBERG</p>	<p>Restart Corrective Actions support the implementation of the Corrective Action Objective.</p> <p>1. TARGETS FOR CAO 5.1</p> <p>a) The Restart Corrective Actions associated with Corrective Action Objective 5.1 have been implemented and verified.</p> <p>b) A demonstration that team efforts have been used in solving three problems involving multiple departments.</p> <p>c) A demonstration that management is committed to the teambuilding process and has begun to transmit the spirit of teamwork through the ranks. This demonstration will be evidenced by behaviors which promote open communications and by a willingness to work together to attain common goals.</p> <p>d) The senior management and the Integrated Team are aware of what they do as a group which promotes and impedes collaboratively getting their work done. They are in the process of implementing behaviors which reinforce the positive aspects of their working together and manage the negative aspects of working together.</p> <p>e) A process is in place such that management and organizational issues are identified, discussed and either resolved or assigned to an ad hoc multi-department team for resolution (as appropriate).</p>	<p>ANGELA BERNAT</p>

2 . **SPECIFIC ISSUES**

ASSESSMENT AREA COORDINATOR - LARRY KAMMERZELL

ISSUE 1 REV 0

READINESS FOR RESTART - BASES	RESTART ACTION PLAN SPECIFIC ISSUES	READINESS FOR RESTART TARGETS	PRINCIPAL ASSESSOR
<p>BASES #6. "Results achieved through implementation of Restart Corrective Actions for the RAP Specific Issues shall be sufficient to resolve or provide management with assurance that these issues concerning operator training & qualification, administrative process, and hardware deficiencies will not have an adverse effect on safe plant operations.</p>	<p>SI-1 OUTAGE MANAGEMENT OVERSIGHT TASK MANAGER: TESSIER</p>	<p>S1.1 The RAP commitments including text, corrective actions and responses to NRC questions associated with Outage Management oversight have been implemented and verified.</p> <p>S1.2 The Outage Management process is comprehensively identifying, monitoring implementation, and tracking to completion those activities required for restart.</p> <p>S1.3 A plan and schedule has been developed for integrating the Outage Management function into the permanent Nuclear Division organization prior to the next scheduled Unit 1 refueling Outage.</p>	<p>C.V. MANGAN</p>
	<p>SI-2 MAINTENANCE OF OPERATOR LICENSES TASK MANAGER: RANDALL</p>	<p>S2.1 The RAP Corrective Actions and commitments associated with maintaining operator licenses have been implemented and verified.</p> <p>S2.2 Operators demonstrate a professional attitude in identifying and resolving problems and concerns associated with maintaining their operator licenses.</p> <p>S2.3 A process is in place which will prevent recurrence of similar issues, and will identify and resolve trends that could lead to violating 10 CFR 55.</p> <p>S2.4 The job and task analysis for requalification of RO's/SRO's and development of training material based on this analysis is on schedule for completion by July 31, 1989.</p>	<p>JOE LARIZZA</p>
	<p>SI-3 EMERGENCY OPERATING PROCEDURES TASK MANAGER: RANDALL</p>	<p>S3.1 The RAP Corrective Actions and commitments associated with Emergency Operating Procedures have been implemented and verified.</p> <p>S3.2 The EOP's to be implemented in an emergency have been verified and validated. The current set of EOP's are adequate to assure the Company that the plant can be operated without an adverse impact on safety.</p> <p>S3.3 Administrative processes and procedures are in place to be sure that EOP's, EOP support equipment, and supporting procedures are maintained effectively.</p> <p>S3.4 All NMP-1 operating crews have been trained in the effective use of and understand the basis for the content of the EOP's, with respect to their assigned responsibilities.</p> <p>S3.5 The requalification program has been enhanced to increase operator skill and proficiency such that operating crews will maintain a high level of performance in the use of the EOP's.</p> <p>S3.6 EOP instructors' qualification and certification records are up-to-date and the process for maintaining these records has been enhanced to ensure that records are maintained current.</p> <p>S3.7 There is a process in place for the operators and instructors to collaboratively assess the effectiveness of the EOP training.</p>	<p>JOE LARIZZA & ANTHONY TONE</p>

READINESS FOR RESTART - BASES	RESTART ACTION PLAN SPECIFIC ISSUES	READINESS FOR RESTART TARGETS	PRINCIPAL ASSESSOR
	SI-4 INSERVICE INSPECTION TASK MANAGER: YEAGER	S4.1 The RAP Corrective Actions and commitments associated with inservice inspection have been implemented and verified. S4.2 The system boundaries, components and the necessary inspections to satisfy the requirements of the ASME Section XI 10 year inservice inspection are clearly identified in a Niagara Mohawk inspection plan for Nine Mile Point Unit 1 (for the past and current 10 year intervals). S4.3 All inspections required to satisfy the past 10 year inservice inspection interval have been completed. S4.4 The interim organization with the necessary resources as well as the responsibility and authority to effectively manage the implementation of the inservice inspection program is in place. S4.5 Approved interim administrative processes and procedures governing the implementation of the inservice inspection program, particularly the disposition of identified deficiencies, are in place. S4.6 An appropriately detailed plan and schedule to establish and transition the responsibility for inservice inspection to a permanent organization is in place. S4.7 Personnel in the organization using contractors are familiar with the processes and procedures relating to control of contractors.	ANTHONY TOME
	SI-5 CONTROL OF COMMERCIAL GRADE ITEMS TASK MANAGER: PACE	S5.1 The RAP Corrective Actions and commitments associated with the control of commercial grade items have been implemented and verified. S5.2 Personnel in the various organizations (Materials Management, Purchasing, Maintenance, Quality Assurance, Design Engineering, Operations) know how their function contributes to the control of commercial grade items and how to implement proactive steps to resolve problems associated with the control of commercial grade items. S5.3 The permanent staffing of Materials Engineering and the integration of Materials Engineering with interfacing organizations is proceeding on schedule. S5.4 Actions have been taken or are planned that will lead to the early identification and resolution of material control problems in the future.	GLENN WIBLOCK

READINESS FOR RESTART - BASES	RESTART ACTION PLAN SPECIFIC ISSUES	READINESS FOR RESTART TARGETS	PRINCIPAL ASSESSOR
	SI-6 FIRE BARRIER PENETRATIONS <u>TASK MANAGER:</u> FINNERTY	S6.1 The RAP commitments including text, corrective actions, and responses to NRC questions associated with the Fire Barrier Penetrations have been implemented and verified. S6.2 The installed configurations of the fire barrier penetrations are equivalent to those tested and meet the requirements of the fire barrier itself as defined in the fire hazards analysis. S6.3 An effective process, including trained resources, is in place to monitor and evaluate the condition of fire barriers. S6.4 The design basis for fire barrier penetrations is documented. Processes and procedures have been implemented that ensure that this design basis will be maintained. S6.5 An effective plan is in place to transition the maintenance responsibility for this design basis from the task force to the permanent organization. S6.6 An effective plan is in place to ensure that future audits of the fire protection program are appropriately coordinated and followed up.	C.V. MANGAN
	SI-7 TORUS WALL THINNING <u>TASK MANAGER:</u> FRANCISCO	S7.1 The RAP Corrective Actions and commitments associated with torus wall thinning have been implemented and verified. S7.2 There is a documented and scheduled program for addressing torus wall thinning. S7.3 NRC inspections are being appropriately coordinated and supported.	GLENN WIBLOCK
	SI-8 SCRAM DISCHARGE VOLUME <u>TASK MANAGER:</u> FRANCISCO	S8.1 The RAP Corrective Actions and commitments associated with scram discharge volume have been implemented and verified. S8.2 The organization and functional responsibilities associated with the interpretation, implementation, and management of commitments, as well as exemption requests, is clearly determined and understood within the Nuclear Division. S8.3 Personnel understand and implement related policies.	BOB CUSHMAN
	SI-9 APPENDIX J - TESTING OF EMERGENCY CONDENSER AND SHUTDOWN COOLING VALVES <u>TASK MANAGER:</u> FRANCISCO	S9.1 The RAP Corrective Actions and commitments associated with Appendix J testing of valves has been implemented and verified. S9.2 A schedule exists for implementing the program for satisfying schedular exemptions taken to Appendix J. S9.3 A process is in place which will assure the Company that the scope and content of the Appendix J testing program is maintained current and implemented in accordance with the NRC Appendix J safety evaluation and Technical Specifications.	TOM ROMAN

2. SPECIFIC ISSUES (continued)

ISSUE 1 REV 0

READINESS FOR RESTART - BASES	RESTART ACTION PLAN SPECIFIC ISSUES	READINESS FOR RESTART TARGETS	PRINCIPAL ASSESSOR
	S1-10 REACTOR PRESSURE VESSEL PRESSURE/TEMPERATURE CURVES TASK MANAGER: FRANCISCO	S10.1 The RAP Corrective Actions and commitments associated with Reactor Pressure Vessel P/T Curves have been implemented and verified. S10.2 There is a documented, and scheduled program for developing correct data for refining the P/T curves to be consistent with the actual vessel conditions. Obtaining the Technical Specification changes should also be addressed in the schedule.	GLENN NIBLOCK
	S1-11 EROSION/CORROSION PROGRAM TASK MANAGER: MARSHALL	S11.1 The RAP Corrective Actions and commitments associated with the Erosion/Corrosion Program are implemented and verified. S11.2 Contractor procedures and instructions are clear. S11.3 Appropriate contractor oversight actions are being effectively implemented.	GLENN NIBLOCK
	S1-12 MOTOR GENERATOR SET BATTERY CHARGERS TASK MANAGER: SKOW	S12.1 The RAP Corrective Actions and commitments associated with the Motor/Generator Set Battery Chargers are implemented and verified. S12.2 Safety classifications are performed properly. S12.3 Personnel involved in safety classifications understand the specific issue, Niagara Mohawk policies, and regulatory requirements.	BILL D'ANGELO & RON HALSEY
	S1-13 IMPLEMENTATION OF LONG-TERM PROGRAMS RELATED TO I&C TECHNICIAN ALLEGATION ISSUE TASK MANAGER: PERRY	S13.1 The RAP Corrective Actions and commitments associated with the implementation of long term programs related to I&C technician allegations have been implemented and verified. S13.2 A Restart Action Plan for Nine Mile Point 1 has been developed and is being implemented which has the following characteristics: <ul style="list-style-type: none"> a. A comprehensive problem identification process has been implemented to provide management a high degree of assurance that problems impacting performance of the organization and the plant have been identified. b. A systematic assessment of the root causes of the problems has been conducted. c. Personnel impacted by the actions in the RAP have been sufficiently involved in the development or approval process of the corrective actions such that they know and buy-in to these actions. 	DAN O'HARA

2. SPECIFIC ISSUES (continued)

ISSUE 1 REV 0

READINESS FOR RESTART - BASES	RESTART ACTION PLAN SPECIFIC ISSUES	READINESS FOR RESTART TARGETS	PRINCIPAL ASSESSOR
	S1-14 SAFETY SYSTEM FUNCTIONAL INSPECTION TASK MANAGER: KLOSOWSKI	S14.1 The RAP commitments including text, corrective actions and responses to NRC questions associated with the safety system functional inspection have been implemented and verified. S14.2 The specific deficiencies identified during the NRC's safety system functional assessment, have been resolved. S14.3 Specific deficiencies in design basis documentation and generic implementations identified through the problem reporting process which could impact the ability to operate the plant with a high assurance of safety have been resolved. S14.4 An approved resource loaded plan and schedule is in place to develop and implement a design basis reconstitution and configuration management upgrade program. S14.5 An effective plan is in place to control changes, (e.g. Alarm set points, Flow diversion devices, system resistance calculations). S14.6 An evaluation of other Technical Specification systems or safety systems has been done for similar deficiencies.	C.V. MANGAN
	S1-15 CRACKS IN WALLS AND FLOORS TASK MANAGER: GEORGE	S15.1 The RAP Corrective Actions and commitments associated with the cracks in walls and floors have been implemented and verified. S15.2 A plan and schedule for implementing a process for the identification, reporting and evaluation of cracks has been developed. S15.3 Follow-up to assess the effectiveness of the repairs has been performed or is planned, scheduled and appropriately tracked.	JOE SCHWAB
	S1-16 FEEDWATER NOZZLES TASK MANAGER: YEAGER	S16.1 The RAP Corrective Actions and commitments associated with the feedwater nozzles have been implemented and verified.	ANTHONY TOME

READINESS FOR RESTART - BASES	RESTART ACTION PLAN SPECIFIC ISSUES	READINESS FOR RESTART TARGETS	PRINCIPAL ASSESSOR
	SI-17 INSERVICE TESTING <u>TASK MANAGER:</u> PASTERNAK	S17.1 The RAP Corrective Actions and commitments associated with the Inservice Testing (IST) program have been implemented and verified. S17.2 Assure the Company that there are no open deficiencies or concerns associated with the IST program S17.3 The second interval IST program has been developed and is in place for all ASME Class 1, 2 & 3 safety related pumps and valves except for those where MRC approved relief requests exist. S17.4 Administrative controls (including clear assignment of responsibilities and interfaces) will be in place to assure the Company that the IST program is maintained properly when future design (modifications) and/or licensing ("Q-list") changes are made. S17.5 Appropriate personnel have been trained on the approved process for developing and maintaining the IST program.	DAVE PALMER
	SI-18 125 VDC SYSTEM CONCERNS <u>TASK MANAGER:</u> JAKUBOWSKI	S18.1 The RAP Corrective Actions associated with the 125 VDC system concerns have been implemented and verified. S18.2 Analyses for the 125 VDC system have been completed and the results of the assessment documented. S18.3 The deficiencies identified during the assessment have been dispositioned according to their impact on plant operations. S18.4 A plan for the resolution of deficiencies which can be delayed beyond restart has been developed.	RON HALSEY

3 . ASSESSMENT RELATIVE TO NRC GENERIC RESTART GUIDELINES

ASSESSMENT AREA COORDINATOR : JOE MARTORE ISSUE 1
REV 0

READINESS FOR RESTART BASES	READINESS FOR RESTART - GUIDELINE	READINESS FOR RESTART TARGET	PRINCIPAL ASSESSOR
<p>BASES #7. "Results of corrective actions and plant improvement activities sufficiently address and satisfy NRC restart guidelines, such that all issues necessary to support readiness for restart and safe operation have been demonstrated and NRC approval for plant restart may be requested."</p>	<p>1. ROOT CAUSES IDENTIFIED AND CORRECTED The root cause of the conditions requiring the shutdown must be properly identified and addressed by a comprehensive corrective action plan, including implementation and verification. Division Sponsor: Carl Terry</p>	<p>1.a A plan has been developed and implemented to identify and address the root causes leading to the shutdown.</p> <p>1.b Based on the root causes identified, corrective actions have been implemented such that sufficient results have been achieved to address the root causes.</p> <p>1.c A process has been established to assure that the effectiveness of the results will be maintained.</p>	JOE MARTORE
	<p>2. MANAGEMENT ORGANIZATION A qualified management organization is in place to ensure that the proper environment and resources are provided to ensure that problems and their root causes have been rectified. The organization must demonstrate that it can coordinate, integrate, and communicate its objectives. Division Sponsor: Skip Stuart</p>	<p>2.a A qualified nuclear management organization has been established for all key management positions and has communicated its objectives.</p> <p>2.b Management objectives reflect a positive attitude toward assuring that safety issues are resolved in a timely manner.</p> <p>2.c The management organization: i) exhibits good teamwork among its subelements; ii) provides strong engineering support for plant activities; iii) has the internal ability to recognize safety problems, develop adequate corrective actions, and verify their implementation and effectiveness; and iv) has an independent self-assessment capability that can identify situations not sufficiently dealt with by the regular functioning of the principal organization.</p>	BRUCE RODGERS
	<p>3. PLANT AND SUPPORT STAFF The operations staff must recognize and carry out their responsibilities in ensuring public health and safety. Division Sponsor: Jim Willis</p>	<p>3.a An adequate number of qualified licensed operators shall exist to meet Technical Specifications and regulatory requirements.</p> <p>3.b The operators display a positive attitude toward safety issues.</p> <p>3.c The operators display attentiveness to duty, fitness for duty, a disciplined approach to activities, a sensitivity for plant trends, security awareness, and an openness of communications and desire for teamwork with other groups.</p>	BRUCE RODGERS
	<p>4. PHYSICAL STATE OF READINESS OF THE PLANT The physical plant, including equipment and procedures is ready to support restart and safe operation. Division Sponsor: Kim Dahlberg</p>	<p>4.a All needed safety equipment has been demonstrated to be operational prior to restart.</p> <p>4.b Surveillance tests are up-to-date, and reflect modifications and other corrective actions performed during the outage.</p> <p>4.c The maintenance backlog has been reduced to nominal levels.</p> <p>4.d Procedures have been updated and plant staff trained to reflect resolution of the root causes of the shutdown.</p> <p>4.e The as-built design of the plant is known to agree with the safety design basis as described in the FSAR.</p>	HANS SCHIERLING
	<p>5. REGULATORY REQUIREMENTS The plant and its prospective operation is not known to be in conflict with any regulations, and the requirements of the Confirmatory Action Letter have been met. Division Sponsor: Stan wilczek</p>	<p>5.a All Technical Specification amendments necessary for restart and operation have been issued.</p> <p>5.b Regulatory licensing commitments (including GDC requirements, generic letters, bulletins, etc.) are known and have been met, as appropriate for restart.</p> <p>5.c All conditions of the CAL have been met.</p>	JOE MARTORE

RESTART READINESS REPORT

APPENDIX 3

SEPTEMBER 8, 1989

Assessment Bases and Detailed Results

This Appendix provides additional details of the assessments of the Unit 1 restart-related Underlying Root Causes (URC), Specific Issues, and NRC Generic Restart Guidelines. The associated assessment Bases and Targets are contained in Appendix 2. The information in this Appendix summarizes the findings of the assessors which were used by the Panel in reaching the conclusions presented in Chapter IV of the Report.

A. Underlying Root Causes

The discussion of each URC related Basis describes the results for each Target. Following this is a conclusion regarding restart readiness.

1. Planning and Goals

"The management tasks of planning and goal setting have not kept pace with the changing needs of the Nuclear Division and with changes within the nuclear industry."

TARGETS, AND STATUS

Target 1.1.a Restart Corrective Actions adequately support the Corrective Action Objectives and objectives adequately address desired change in performance.

Assessment Results

This Target has been met. The assessor evaluated the RAP corrective actions against the Corrective Action Objective. The assessor concluded that the corrective actions adequately support the corrective action objectives, which adequately address the desired change in performance.

Target 1.1.b All Restart Corrective Actions which address CAO 1.1 have been implemented and verified.

Assessment Results

Although the intent of this target has been achieved, the target will not be fully met until all supporting CAs have been closed and verified.

Vision, mission, and goals have been developed during interactive meetings among the Executive Vice President-Nuclear Operations, his senior managers, and external support personnel. A wallet-size brochure incorporating the vision, mission, and goals, together with Standards of Performance and other

important information, has been distributed to all Nuclear Division employees. The Executive Vice President and his direct reports are stressing the importance of the brochure's contents at various staff meetings. There is an increasing awareness that the contents should be incorporated in Performance Planning Worksheets, which are used to define an individual's goals and objectives. Some managers and supervisors have already done this.

The 1989 Corporate goals include Unit 1 restart and NIP goals. Monthly goal status is reported in the 1989 Corporate Goals section in NM News--a periodical that is distributed to all Company employees.

On March 20, 1989, a memorandum was sent to Nuclear Division managers and supervisors explaining the relationship between Nuclear Division goals and expectations for individual performance. This information was further disseminated through the chain of command. Managers and supervisors have explained the relationship between individual/group performance standards and Nuclear Division goals.

Target 1.1.c Management will have reviewed recent SALP and INPO evaluations to judge how NMPC rates compared to the rest of the nuclear industry. This review will be factored into the vision, mission, and performance expectations documents.

Assessment Results

This target has been met. Both INPO ratings (from other utilities) and SALP ratings (public information) were factored into Nuclear Division objectives and goals for 1989. A goal of improvements in both INPO and SALP ratings were also reflected in the Nuclear Engineering & Licensing Department business plan.

Target 1.1.d Nuclear Division employees are aware of and familiar with the Nuclear Division vision, objectives, goals, and standards of performance.

- Senior management understands the current 1989 planning process, agrees with it, and is using the Nuclear Division vision, objectives, goals, and standards of performance.
- Managers understand the reason for incorporating the Nuclear Division vision, objectives, goals, and standards of performance into their department's planning process.
- Supervisors are aware that there are N.D. Vision, objectives, goals, and understand the linkage between these and the standards that impact their department.
- Workers are aware that there is a vision and mission and how their department's goals and individual performance supports the vision and mission.

Assessment Results

This Target has been met. Senior Management is setting a good example through staff meetings and by example in reinforcing the importance of using the Nuclear Division vision, goals and Standards of Performance. There appear to be fewer observed instances of employees expressing a lack of clear commitment and direction. There also appears to be an increase in the attitude of getting the job done right the first time. Establishing accountability through the individual Performance Planning Worksheets has begun to occur.

Target 1.1.e Necessary policies and procedures have been developed/ revised and are in place and training has been planned, as required, to begin using the 1989 Nuclear Division vision and goals as basis for the current planning process.

Assessment Results

This Target has been met. A temporary Business Planning procedure was issued for review on June 30, 1989. The procedure describes responsibilities and the development, implementation and tracking of specific programs in support of the Nuclear Division objectives and goals.

Target 1.2.a All Restart Corrective Actions which address CAO 1.2 have been implemented and verified.

Assessment Results

Although the intent of this target has been achieved, the target will not be fully met until all supporting Corrective Actions have been closed and verified. The actual work for these Corrective Actions has been completed and many of the products are being used; the remaining tasks are administrative.

Target 1.2.b Employees involved in inputting to and maintaining the Nuclear Commitment Tracking System have been trained on the program and are aware of and respond to the needs of its users. A person is assigned the responsibility for and held accountable for notifying the appropriate Nuclear Division department head that a commitment date is coming due. (Revised by Panel)

Assessment Results

This target has been met. The Nuclear Commitment Tracking System has the capability to list items coming due in addition to noting those that are overdue. Appropriate personnel have been trained in the use of NCTS, and they are using the system. Two individuals have been designated to notify appropriate Nuclear Division department heads that either an NRC or an INPO commitment is coming due.

Target 1.2.c Restart Corrective Action products are being used to plan and schedule Nuclear Division activities and have improved the process.

Assessment Results

The intent of this target is met. The NIP is the outline for the long term planning effort in the Nuclear Division today. The Integrated Priority System, discussed below, is nearing full implementation and will be used to select the work to be done in the Division.

Target 1.2.d The policy and/or procedure (which includes who has the responsibility and the authority) for establishing priorities has been clearly defined, is in place and has been communicated to appropriate personnel.

Assessment Results

This Target has been met. The Panel changed this item to Category 1 and recommended the establishment of an integrated priority system before restart. A draft Integrated Priority System has been developed with input from all Nuclear Division departments at both the department head level as well as lower levels of management. The System was reviewed by the Integrated Team and Senior Management, and approved for use on a pilot basis. Based on the lessons learned during the pilot phase, the System will be finalized and the appropriate people will be trained in its use.

Target 1.2.e Actions have been identified or a program has been developed to implement a planning and scheduling process that defines specific performance objectives, assigns responsibilities and priorities, and integrates and aligns the activities. Accountabilities and schedule have been specified for implementing these actions.

Assessment Results

This target has been met. There are three actions which support this finding: (1) the pilot testing of the Integrated Priority System, (2) the procedure issued describing the duties of the Interim Outage Manager, and (3) the development of the Outage Management Plan.

Target 1.3.a Restart Corrective Action 1.3.1 has been implemented and verified.

Assessment Results

This Target has not yet been met in total since the NIP is in place but has not been resource loaded for every Corrective Action. The target will be fully met before restart when the NIP is completely resource loaded.

Target 1.3.b The definition of and process for strategic and tactical planning has been specifically documented and communicated. Accountabilities and schedule have been specified.

Assessment Results

This Target has been met. Definitions for strategic and tactical planning, accountabilities and schedule are contained in a sufficiently complete draft of the Nuclear Division Business Planning Procedure.

Target 1.3.c Actions have been identified to develop and implement a comprehensive Business Planning Process.

Assessment Results

This Target has been met. The 1989 Business Plan consists of the NIP and the existing 1988-1989 Business Plan. Items in the Business Plan and not in the NIP will be reviewed with the responsible managers to determine if they should be maintained in the Business Plan. The 1990 Business Planning cycle will begin with a strategic assessment. Integrated Business Planning, the long range planning and scheduling process, will start in 1989 with the naming of the Business Planning Administrator.

A temporary Business Planning procedure was issued for review on June 30, 1989. The procedure describes responsibilities and the development, implementation and tracking of specific programs in support of the Nuclear Division objectives and goals.

Assessment Conclusion Basis No. 1:

The results of the assessment, when reviewed target by target, support the finding that this Restart Basis has been achieved.

Management has assessed its performance relative to the general nuclear industry and operating environment. Based on this assessment, management has characterized and communicated Nuclear Division direction through vision and goal statements. Managers have demonstrated their ability to deploy their resources consistent with the vision and goals, and to assure that plant operations are safely and reliably conducted in compliance with applicable regulations.

Senior Management, by example, are continually reinforcing the importance of using the Nuclear Division vision, goals and Standards of Performance to focus department, group and individual work activities at all levels. An across-the-board awareness is beginning to develop on how an employee's individual performance should support the Nuclear Division vision and goals. The Performance Planning Worksheets are also beginning to be used to assign accountability to these efforts.

Significant progress has been made towards finalizing the Nuclear Division Integrated Priority System. Senior Management's recognition of the need for the system was an important ingredient for its ultimate success.

Implementation of the System will help relieve the employees' frustrations resulting from working on several "top priority" tasks. Implementation will also help improve the problem resolution effort by assigning people to resolve a problem and keeping them working at it until the problem is solved, rather than being taken off and put on something else while the first problem remains unsolved.

2. Problem Solving

"The process for identifying and resolving issues before they become regulatory concerns was less than adequate, in that there was not an integrated or consistent process used to identify, analyze, correct, and assess problems in a timely way."

Target 2.1.a Restart Corrective Actions adequately support the Corrective Action Objective.

Assessment Results

This Target has been met. The Corrective Actions generally implement and support the Corrective Action Objective, providing for comprehensive identification of past and current problems. The CAs also provide for developing and implementing temporary procedures to integrate restart activities to assure completion, verification, and close-out. However, the CAs do not adequately specify the process by which issues are effectively analyzed and corrective actions are implemented and assessed in a timely way. Because of this, Targets 2.1.c, 2.1.d, and 2.1.e were devised to provide assurance that the Corrective Action Objective will be fully and effectively met. As a result, this target has been met since the CAs supplemented by these Targets adequately support the CAOs.

Target 2.1.b All Restart Corrective Actions which address CAO 2.1 have been implemented and verified.

Assessment Results

The restart CAs that address CAO 2.1 are RAP Corrective Actions 2.1.1 through 2.1.10. Progress to date indicates that these CAs are being effectively implemented and that the Target will be fully met when the supporting CAs, are completed, verified and closed out by SORC.

A comprehensive effort was undertaken to identify and report problems, and a sound program has been developed for processing, evaluating, implementing, and tracking problems. This action has been effectively implemented. The Problem Report master listing and the process for evaluation and implementation will continue for this purpose.

Based on implementation, verification, and review of the following programs:

- Quality First Program (QIP),
- CARs,
- "Tell the Superintendent," and
- Lessons Learned,

the assessment confirms that there are no trends that lead to identification of outstanding issues affecting plant restart and safe operation.

Temporary Administrative Control Procedure NI-88-6.0, "Restart Requirements for Core Reloading", identifies and documents that the requirements for core reloading have been met, and provides for assurance of satisfactory completion. The procedure provides for two alternative methods of closing corrective actions:

- temporary procedures, or
- Issues and Corrective Actions Closure form.

Implementation of this procedure has been effective for issue closure. It provides a comprehensive list of activities the verifier may use in assuring the effectiveness of a corrective action, including observations, walk-throughs, inspections, and confirmations.

These CAs are principally focused on assuring that adequate systems are in place for identifying problems, that all significant past problems have been identified, and that adequate tracking and trending are in place. Problem identification and tracking have clearly been successfully implemented under RAP. Therefore, the elements in the CAs addressed by these CAs will be resolved when close out and verification is complete.

- Target 2.1.c CAs have been effective in developing and implementing an integrated and consistent interim problem solving process.
- CA lessons learned are incorporated in the problem identification and solving process.
 - Training consistent with the individual's role in the application of the problem solving process has been completed and the process is currently in use.
 - Corrective actions identified per the process are effective in resolving the immediate problem and prevent recurrence of the problem.
 - The implementation of corrective actions is subject to follow up for possible further action.
 - The process is being implemented by each affected department.

Assessment Results

The intent of this Target has been satisfied, and the Target will be fully met when the actions identified in Appendix 4 are completed. This Target addresses the important elements of problem solving that were not covered adequately by CA 2.1.1 through 2.1.10 in the RAP: the process for determining:

- root cause and effective implementation strategies,
- effectiveness and timeliness of actions taken to remedy identified problems, including priority action and effective assignment of responsibility and accountability, and
- longer-term evaluation of whether corrective actions have solved the problems.

In addition to Niagara Mohawk's evaluation that problem solving was a management and organizational effectiveness deficiency, both the NRC and INPO remained critical of Niagara Mohawk's problem-solving effectiveness as recently as April and May 1989. Some elements of the problem solving issue, however, were considered noteworthy. For example, root cause trending and the problem report process, the latter of which is confirmed in this assessment.

With respect to the root cause process, some elements that need to be considered are: whether problems (however identified) are consistently handled, and the mechanics of performing a root cause evaluation. This assessment finds the determination of root causes for identified problems to be effective. However, there are many mechanisms in existence for identifying and tracking potential safety concerns. Among them are:

- Problem reports
- Occurrence reports
- Corrective action reports
- Non-conformance reports
- QC inspection reports
- Surveillance reports
- Licensee event reports
- CFR-21 reports
- Quality First Program open items
- NRC open items
- Generation open items
- Nuclear Compliance and Verification open items
- SRAB open items
- Work requests
- Audit observations

Work is underway to evaluate relationships among the programs for identifying and tracking potential safety concerns, to develop specific recommendations for simplifying present methods, and to eliminate as many deficiency-identifying mechanisms as practical. A Division-level procedure provides an hierarchy to accommodate lower-tier department-level procedures on a consistent basis. This approach is sound, but requires longer-term implementation.

Another activity is development of the Root Cause/Trending Interface Matrix. This will aid the problem solving process by identifying problem areas, source documents, and procedures to be used for establishing root cause requirements. This is a short-term, interim effort to assure consistent root cause analysis despite the many current sources of problem identification.

Along with this effort is the issuance of Procedure S-SUP-1, "Root Cause Evaluation Program." Its purpose is to provide "a set of instructions for performing root cause evaluations and [for identifying] the requirement for ISEG/Technical Evaluation to evaluate the effectiveness of corrective actions assigned via the Root Cause Program". These activities are appropriate to provide for consistent, interim problem solving and for identifying corrective actions.

Of special importance will be the prioritization and processing of requirements that emanate from the department-level procedures, to assure that issues are:

- dealt with in relation to their importance to safety,
- followed by both Division- and department-level tracking to assure timely implementation, and
- revisited in the longer term to assure that the corrective actions were effective in preventing recurring problems.
- assurance that responsibility and accountability for each safety significant problem is maintained through problem resolution and close-out.

Through both evaluation of the systems in place to identify and resolve problems in a timely way and through interviews with all levels of Nuclear Division personnel, it was determined that the weakest part of the process was prioritization and accountability. That is, the methods available to sort out the multitude of problems, and focus attention on these without being distracted by less safety significant issues, as well as to assure that ownership will not be lost were inadequate.

At the urging of the Restart Review Panel, a number of actions were initiated to provide a uniform prioritization process and to establish a mechanism for assuring that problems are fully and effectively resolved. The first of these is a draft Integrated Priority System Procedure to allow consistent prioritization of all Nuclear Division work. This procedure identifies six priority levels and a merit system for evaluating the value of work in the four lower priorities to the Nuclear Division. The merit system is not used for the top priorities which have near term safety significance. The second action is a proposal to Division Managers for a system which would clarify responsibilities for resolving problems, provide needed feedback and communication throughout the process, and assure ownership of problem resolution. While both of these items are in the formative stage, they represent a large step toward dealing with the weak points of the problem solving process.

The Integrated Priority System is being pilot tested; the Nuclear Division department heads have scheduled a session to finalize agreement on how to track problems from identification to closure and how to best assign responsibility within each phase of the problem resolution process.

Given the progress made to date and the clear direction for finishing these topics, this target is met.

Target 2.1.d A long-term plan has been documented to develop and implement an integrated and consistent problem solving process.

The Target has been met. The basic structure of the long-term plan to develop and implement an integrated and consistent problem solving process is contained in NIP items 2.1.11 through 2.1.17. Following is a summary discussion of progress for some of these items.

Development of an integrated deficiency reporting program is well underway with the participation of Operations, Engineering, QA, and Training. A flow chart illustrating the process logic has been generated and inter-department comments have been received. Based on this logic flow, a Division-level procedure has been drafted to provide a broad framework for deficiency reporting. The procedure will facilitate preparation of conforming department-level procedures, by which a broad range of issues can be handled consistently throughout the Nuclear Division.

Development of a standard lessons learned program is also well underway, even though this is a Priority 3 item. A Nuclear Division Management Policy for this program has been drafted and contains policy directives and responsibilities for the entire Division.

A Site Administrative Procedure has also been drafted, which implements the Division Policy on lessons learned. The procedure applies to all personnel performing activities that affect Nine Mile Point Nuclear Station. An aspect of note in this procedure is that it contains a section titled "Program Effectiveness Evaluation", which requires the Lessons Learned Coordinator to verify program compliance and effectiveness.

The program to improve the use of operational experience data is in place. The principal sources of Operational Experience (OE) data are:

- NRC Information Notices
- INPO SERs and SOERs
- GE Service Information Letters

Although there is a considerable OE backlog to be addressed, a staff of 15 is planned to accommodate the influx of data. To reduce the backlog, 28 contractors are in place through 12/90. The goal is to reduce the backlog to about 25 items by this time, which can be managed by NMPC personnel.

Although this Target dealt with those items that were Category 2 and 3, substantial progress has been made in development and trial implementation. Plans are in place to assure appropriate training when these programs are shown to be effective. This Target has been met.

When an OE resolution has been determined, any implementation action is entered in the appropriate system (e.g., NCTS) through which, prioritization and tracking is managed. When an OE that is ready for closure is placed in a system, it is taken off the backlog, and resolution is closed out in the OE process.

Target 2.1.● Future self-assessments of the problem resolving process are scheduled to be conducted by the Independent Assessment Group.

Assessment Results

Future self-assessments of the problem-solving process are scheduled to be conducted by the Independent Assessment Group (IAG).

The charter for the IAG has been modified and now includes self assessment of the problem solving process in its scope. Therefore, the intent of this Target has been satisfied and the Target will be fully met upon satisfactory completion of the actions listed in Appendix 4.

Assessment Conclusion Basis No. 2

Performance-limiting deficiencies have been identified by assessing past performance and were resolved by implementing corrective actions. A detailed plan for implementing an improved problem solving process is in place and satisfactory progress has been demonstrated in implementing the plan. The plan elements include:

Problem identification,
Systematic cause analysis,
Corrective action planning,
Implementation management, and
Assessment of achieved results.

An interim process based on the one used in developing the RAP will be used until the long-term program is fully in place.

At the organization level, an integrated and consistent problem solving process has been instituted and is being implemented in the Nuclear Division and supporting organizations to identify, analyze, correct, and assess problems in a timely way.

At the management level, managers are exhibiting good problem solving skills in their daily activities. In particular, they are making a strong effort to obtain sufficient information to identify situations of concern, and are involving the personnel affected by them. They are analyzing concerns to ascertain root cause, developing well-considered solutions, choosing the best solutions, and implementing them. Managers are following up on implementation and assessing the results to determine whether further action is needed.

The Safety Review and Audit Board (SRAB) formed a special team to determine the adequacy of methods of:

- determining root causes,
- identifying underlying issues, and
- designing, implementing, and verifying corrective actions.

The SRAB team also evaluated Corrective Action Objective 4.2 (assessment against Standards of Performance), with particular emphasis regarding ongoing assessment plans.

The positive actions noted above, combined with the significant progress made toward implementing the Integrated Priority System and finalizing the process which assigns accountability for problem resolution lead the assessor to conclude that Basis No. 2 has been met.

3. Organizational Culture

"Management's technical focus has created an organizational culture that diverts attention away from the needs and effective use of employees."

TARGETS AND STATUS

Target 3.1.a Restart Corrective Actions adequately support the Corrective Action Objectives and all Restart Corrective Actions which address CAO 3.1 have been implemented and verified.

Assessment Results

The assessor evaluated the RAP corrective actions against the Corrective Action Objective. The assessor determined that the CAs have been completed and adequately support the Corrective Action Objective. The Target has been met.

Target 3.1.b Nuclear Division employees at all levels of the organization are aware of and familiar with the November 1988 Nuclear Division organizational changes, the status of actions of 1988 commitments and the Restart Action Plan.

Assessment Results

The Target has been met. Employees are aware of the November 1988 changes to the organization. The November 1988 organization chart was replaced by the May 1989 chart, distributed in mid-May.

An interim assessment noted that individual and group interview questions on commitments resulting from 1988 Town Hall and other employee meetings generally had negative responses. A major theme in the interviews was that employees felt they were "being heard but not listened to." There was little evidence that supervisors personally discussed management responses to overall employee concerns with their subordinates, in contrast to RAP responses, which were largely based on feedback through the chain of command.

To check that management was getting better at listening, the interim assessment recommended that the process for the development of the functional organization charts be assessed. There was extensive involvement of employees throughout the Nuclear Division during the preparation of the charts; it took several iterations to get them finalized. When the charts were issued, there was a feedback form attached to facilitate the correction of any deficiencies or any future changes that occur.

Another recommendation in the interim assessment focused on the use of the chain of command, especially as it applied to getting employee feedback. In the instance of the organization charts discussed above, the charts were issued through the chain of command for comments and the comments were obtained back up through the same chain.

Target 3.1.c Employee feedback on the Restart Action Plan was solicited, provided and incorporated, as appropriate.

Assessment Results

This Target has been met. An effective process exists for communicating the RAP to employees and receiving their feedback.

Generally, employees saw the opportunity to personally contribute to a major work plan as a clearly positive change from past practice. Approximately 1200 feedback forms were received, which were submitted by about 600 people. About ten percent of the feedback issues were incorporated in the Plan.

Management action on the feedback is generally regarded by employees as appropriate, with some exceptions. Significantly, when respondents were known, management response was communicated through their supervisor. This direct hands-on involvement by mid-level managers and supervisors appeared to enhance perceived credibility of the responses. By comparison, responses to the 1988 commitments were disseminated through Company mail or publications and were regarded as being less credible.

An interim assessment recommended the use of the RAP communication process in the future but to allow more time for feedback and to use the chain of command in soliciting the feedback. There have been no undertakings similar to the RAP development to test the process exactly; however, the method used to formulate and issue the functional organization charts discussed under Target 3.1.b successfully used a process similar to that recommended here.

Target 3.1.d Practices and Policies are in place to improve management's attention to employee needs, utilization and feedback.

Assessment Results

This Target has been met. An interim assessment found evidence that some managers are creating opportunities to increase the quality of communication with employees. Examples: Tell-the-Superintendent" program, Quality Teams, Round Table meetings, and off-site team-building sessions. However, most interview data available for the interim assessment indicated such initiatives were the exception.

The interim assessment also found that employees generally perceived a lower- and mid-level management orientation that is exclusively focused on tasks. They perceived some indication that senior management is trying to change this but doesn't know how. Pockets of optimism were found in groups where managers are moving aggressively toward positive change, and seem to have long-term, NIP goals as their target.

The interim assessment recommended improving the work atmosphere by focusing on better communication, collaborative problem solving, and clearly defined work standards. There has been significant progress toward addressing each facet of this interim assessment recommendation in each department of the Nuclear Division.

Each department head now holds frequent staff meetings with his or her direct reports; that same process is used at lower levels of the organization. The sequence of these meetings is also being coordinated to facilitate the timely passing of information through the chain of command; the highest level meeting would be held on day 1, the next tier on day 2, and so on. The organizational development specialists have fostered the use of clear, unambiguous communication with each department head. This candid style is being modeled by Department Heads and is showing up at lower levels of the organization.

The spirit of teamwork, especially as it applies to problem solving, has made significant strides forward. Teamwork has been a constant theme in the Division-wide Town Hall meetings and in each department's discussion of the Division's standards of performance. Mid level managers from generation and engineering have held offsite meetings, facilitated by organizational development specialists, to discuss the needs, concerns, and perceived shortcomings of each group; those sessions have helped each group to understand the needs and perceptions of the other group. There have been numerous citations of engineering and generation working together to solve problems relating to the close out of the RAP Specific Issues. The establishment of site engineering has proven to be very effective in demonstrating Engineering's determination to be responsive to the needs of generation.

Every department in the Nuclear Division has a program underway to update each management employee's performance planning worksheets to establish personal goals which are supportive of the vision, goals and standards of performance of the Nuclear Division.

Target 3.1.e Managers exhibit improved "people" skills such as the listening part of communication, and conflict resolution.

Assessment Results

This target has been met. An interim assessment found evidence that some managers exhibit improved people skills when involved as a leader or member of a project team that is concentrating on a task. However, there was little evidence that improved people skills were becoming normal, everyday aspects of management behavior.

The interim assessment recommended use of in-line training to improve the skill level of current managers. The organization development specialists originally assigned to work with the department heads are now working with the next level of managers to improve the "people" skills of the next level of management. Interviews conducted since the middle of June show positive results. The managers who are getting the training feel more comfortable using the newly acquired skills, and more importantly, the people in their organizations see a greater sense of attention to the employees' needs. One facet of the earlier recommendation that is being implemented in the NIP is to have the training proceed through a programmatic approach to assure uniformity throughout the Division.

Target 3.2.a Restart Corrective Action 3.2.1 has been implemented and verified.

Assessment Results

This Target has been met. Organization professionals have been assigned to the Executive Vice President - Nuclear Operations and his direct reports. They support management in such functions as:

- meeting facilitation,
- issue identification, problem solving,
- action planning,
- team building,
- conflict resolution,
- third-party intervention for interpersonal issues,
- individual coaching and mentoring

Currently, an organization development plan is being prepared for management approval. The overall organization development plan will help managers to focus on the requirement to role-model behaviors that are consistent with the desired culture, and to coach their subordinates in doing likewise.

Target 3.2.b Senior management knows what team building and coaching skills look like from a behavioral perspective, they know which ones they need to work on, and they have individually developed plans for addressing their needs. In addition they have within their departments an ongoing process to ensure that team building and coaching skills, tools and accountabilities are in place and used.

Assessment Results

This Target has been met. An interim assessment found evidence of senior managers' intent to do what it takes at their level to create a more people-oriented culture. They appeared to be sincere in subscribing to an evolving, shared mission for routinely using and maintaining team concepts.

The interim assessment recommended translating the stated intentions of the department heads into action, starting with a personal self-assessment of the person's skills. Recent interviews have found that, in addition to the department heads themselves, many levels of all departments are using the self-assessment forms initially used by the department heads. The forms focus on the five management effectiveness areas and are being used to critique both personal and group behaviors.

Each of the department heads, working with the assigned organizational development specialist, has made significant progress in the team building area. The offsite meetings with the Executive VP and the department heads have identified specific problem areas needing better teamwork; follow-up sessions with various levels of the appropriate departments have made strides to upgrade the teamwork among those groups. Specific examples include: OTPAC continues to improve the relationship between Training and Operations;

meetings between Engineering and Generation have improved the working association between these two departments; the Procurement Process Review Team has helped the understanding and the effectiveness of the support function provided by Materials Management, Materials Engineering, Quality Assurance, and Purchasing to operations and maintenance. It is now commonplace to see letters from a person in one department to someone in another department thanking someone for their help in getting some job done; these notes provide positive feedback and build the sense of value of good teamwork.

There have been instances of improvements in the coaching area. Based on feedback from the interim assessments, one department head counseled a manager that many people felt that the manager did not like them because he never smiled at them; the perception has been changed due to the coaching. The engineering department head has worked with several of his managers to modify their communication style to improve the perception, as seen by their employees, of not being approachable. The maintenance department supervision undertakes periodic observation tours and reviews the results with the crews to enhance future performance. These coaching activities will also be emphasized as part of the management review process.

Work is continuing in order to pass the skills down to lower levels of the organization in concert with the earlier recommendations, but the senior group is already performing properly.

Target 3.3.a Restart Corrective Action 3.3.1 has been implemented and verified.

Assessment Results

This target has been met. An interim assessment found that the Standards of Performance were communicated throughout the chain of command in most departments; however, lower levels of the organization, and, to a large extent, mid-management, were confused as to how they should be implemented. Most employees felt the Standards of Performance are of intrinsic value, but in their current form are only "words on paper," without an action plan to hold people accountable for specific behaviors.

The interim assessment recommended translating the Standards of Performance into observable behaviors so that employees knew what the standards meant for them. The most recent interviews and observations show that the effort to give personalized meaning to the standards is ongoing at staff meetings in every department and at all levels of the organization. A discussion of the standards of performance is a typical agenda item at staff meetings. There is widespread effort to identify the behavior that the standards expect from each employee.

Assessment Conclusion Basis No. 3:

The results of the assessment, when reviewed target by target, support a finding that this Basis has been achieved. There are significant actions and behaviors which demonstrate a positive change in culture.

There are formal Management By Walking Around programs at several levels in the organization. During interviews employees expressed recognition of the changed behavior by their bosses, and appreciated the opportunity to interact with the boss in the work place. MBWA is being advocated and modeled from the top of the organization.

Several interviews noted the trend toward a more participative management style. One person said that a year ago the attitude was "I am the boss, do it my way", while this same person now feels that input is solicited and given due consideration. Recently, a represented clerk was sent to a trade show in California since she was the person who would be able to put to use the information gathered at the show when new equipment was purchased; historically, a high level employee would have gone on such a trip. In this case the most appropriate person went.

The concept of self-assessment has been widely accepted and is being practiced throughout the organization. Managers are being critical of their own performance; they are seeking input on how they and their groups can improve.

Communication has improved. The semi-annual Town Hall meetings have given every Nuclear Division employee the chance to hear the Executive VP set the tone for improved teamwork and chain of command communication. There is a much greater use of the chain of command to disseminate information to the employees. In the other direction, the attitude being fostered is to not just grumble about a problem, but to tell your boss about it and get involved in the solution.

In spite of the work still remaining to get Unit 1 ready for restart, the Executive VP is trying to heighten the awareness of management as to quality of life aspects. There is now a rule that if a direct report of the Executive Vice President must work after 6 p.m. or more than four hours on weekends, he or she must write the Executive VP a letter explaining why that many hours must be worked. It is hoped that by example the leaders will show that the work can get done without spending every waking hour on the job.

The most important aspect of the cultural change is that the most significant changes are being modeled at the department head level; these people are the role models for the entire Division in their display of teamwork, self-assessment, and their dedication to the pursuit of excellence. This unified support at the top of the organization will solidify these desirable cultural changes.

4. Standards of Performance and Self-Assessment

"Standards of Performance have not been defined or described sufficiently for effective assessment, and self-assessments have not been consistent or effective."

TARGETS AND STATUS

Target 4.1.a The Restart Corrective Actions associated with the Corrective Action Objectives have been implemented and verified.

Assessment Results

This target has been met. The Standards of Performance were developed and communicated to Division personnel. The CA was verified and reviewed and approved by SORC on June 16, 1989.

A Nuclear Division Policy has been developed and issued to more accurately define responsibility regarding contractor oversight. This Policy was reviewed and discussed during the August expanded staff meeting of the Executive Vice President-Nuclear Operations. The Executive Vice President-Nuclear Operations has approved the policy and it is scheduled to be disseminated using appropriate procedures on September 15, 1989.

Target 4.1.b A set of Nuclear Division standards of performance which are consistent with the division's vision for excellence exist and have been communicated to all levels of the organization.

Assessment Results

This Target has been met. A set of Nuclear Division Standards of Performance has been developed and it is consistent with the Division's vision for excellence. Based on a review of assessment interviews held with individuals, groups, and Senior Managers, the Standards of Performance have been communicated throughout the organization.

The Standards were communicated in personal discussions, correspondence, and newsletters. Additionally, wallet and "Franklin Planner" inserts have been distributed to employees. These documents summarize the Nuclear Division's Standards of Performance, Vision, Mission, Critical Issues, Objectives, and 1989 Goals. The Executive Vice President - Nuclear Operations and his direct reports have challenged their employees to hold the leaders accountable for exhibiting the Standards of Performance.

Interviews indicate that many organizations have conducted staff meetings to discuss how the Standards of Performance can be utilized and measured in their functional areas. Some managers have incorporated the Standards of Performance into the performance planning process. The Town Hall meetings held in early June focused emphasis on modeling the behaviors set forth in the Standards of Performance. Interviews and phone surveys indicate that many employees are seeing the Standards of Performance being modeled.

An interim assessment identified a lack of awareness regarding the Standards of Performance at the worker level. Subsequent efforts have had a positive impact, and, for the most part, employees at all levels of the organization are aware of and understand the Standards of Performance.

Target 4.2.a An independent assessment function is established and integrated with other assessment groups in the company, i.e. SRAB, QA.

Assessment Results

A comprehensive self-assessment program to determine restart readiness has been developed and is being implemented. The Restart Readiness Report describes the Restart Self-Assessment process and results.

In addition, an Independent Assessment Group (IAG) has been established and a manager appointed. An Independent Assessment Group (IAG) Charter has been drafted and comments from the Executive Vice President's direct reports have been solicited. After incorporation of these comments, a formalized charter will be issued. An action plan describing the process that will be utilized to integrate the IAG with other assessment groups including SRAB and Quality Assurance has been developed and reviewed. The IAG integration plan calls for completion of the required integration actions prior to restart. When the plan is completed, this target will be fully met.

Target 4.2.b Self assessment activity at the departmental and programmatic level has been established and/or improved.

Assessment Results

This Target has been met. There has been an improvement in the awareness for and increased use of self-assessment. At the Direct Report level, the trend identified in an interim assessment continues. For example, periodic self-assessments dealing with the Management effectiveness areas have continued. At the middle management level, understanding of the self-assessment function has emerged. Many managers are using the self-assessment forms in their organizations. Weekly staff meetings have included self-assessments of the effectiveness of the meeting as well. The link between self-assessment and the Standards of Performance is more defined. Managers and supervisors are asking to be held accountable for modeling the Standards of Performance, as well as holding their employees accountable.

At the worker level, the link between Standards of Performance and self-assessment is less clear. Some pockets at lower levels indicate they are unaware of formal self-assessment programs; however, when asked, "How do they know they are doing a good job?", many are able to explain a method of self-assessment which, for the most part, "resembles" assessing themselves against the Standards of Performance.

Assessment Conclusion Basis No. 4:

The results of the assessment indicate that, although not all targets have been met in total, a positive trend has been observed and is expected to continue. Standards of Performance with emphasis on achieving results have been identified and communicated to all levels. Many employees are indicating they feel the Standards are being modeled and fellow employees are working hard to improve in these areas. Plans have been developed for implementation of supporting Performance Standards within major departments. A comprehensive self-assessment program to assess readiness for restart has been conducted. Progress has been demonstrated toward the establishment of a long-term Nuclear self-assessment process with the formation of the Independent Assessment Group.

In summary, the Nuclear Division has set forth its expectations in terms of the Standards of Performance and is holding its employees accountable for self-assessing against these expectations. The establishment of the Independent Assessment Group will continually monitor this area to help assure that this improvement will be a long-term cultural change.

The Nuclear Division's Standards of Performance have been defined and described sufficiently to enable effective assessment. Senior managers are modeling the Nuclear Division's Standards of Performance in the performance of their day-to-day business. Line managers have demonstrated that they are aware of the behaviors that reflect adherence to the Standards of Performance.

5. Teamwork

"Lack of effective teamwork within the Nuclear Division and with support organizations is evidenced by lack of coordination, cooperation, and communication in carrying out responsibilities."

TARGETS AND STATUS

Target 5.1.a The Restart Corrective Actions associated with Corrective Action Objective 5.1 have been implemented and verified.

Assessment Results

Meetings were held with Senior Management, managers, and supervisors to promote teamwork and to identify and resolve management and organizational issues. Team building sessions were held with the Direct Reports and, in many cases, with levels below the Direct Reports. The Direct Reports held expanded staff meetings for all levels of supervision; both the need for teamwork and for improving the effectiveness of the Chain of Command were stressed at these meetings. Interviews at the worker level indicate that supervisors are emphasizing the need for teamwork and for using the Chain of Command -- and that these workers feel that they are seeing positive results.

Two series of Town Hall meetings were held. As a result of the first meeting, held in December 1988, over 1200 feedback forms were received. A "Special Edition" newsletter was published to address the most common concerns and questions. Individual responses have been, and continue to be, sent out. Most of those interviewed in the assessment felt that these meetings provided an excellent opportunity to receive information and provide feedback. However, a few expressed dissatisfaction with the time taken to issue responses.

A second series of Town Hall meetings were conducted in June. Mr. Burkhardt stressed the need for teamwork ("be your brother's or sister's keeper") and for using the Chain of Command. He actively solicited both verbal and written comments and questions. Meeting assessment forms were compiled and indicated that most workers were appreciative of the information disseminated at the meeting and, more importantly, of the opportunity to listen to and ask questions of Larry Burkhardt and his Direct Reports.

The Nuclear Division vision and goals were formally communicated by memorandum to Nuclear Division managers and supervisors on March 20, 1989. These individuals were instructed to "ensure that each employee reporting to you, both represented and non-represented, receives a copy and understands how his or her work activities support the objectives and contributes to the achievement of the goals." The interim assessment noted that compliance with these instructions varied, and that communication of the vision and goals to workers was spotty. Issuance of the wallet-size pamphlets containing the vision, goals, etc. helped to ensure that the message got to all Division employees.

The follow-up assessment indicated that the Nuclear Division vision and goals had been vigorously promoted. Employees were asked to hold up their wallet-sized cards at the Town Hall meetings. Many employees did not have their cards with them and some had not yet received them. This deficiency was

followed up on by the Direct Reports and their managers and supervisors. It is now not uncommon for employees to be asked to hold up their cards at regular staff meetings. Attempts are also being made to translate the vision and goals to everyday work activities. Performance planning worksheets are being modified to show the relationship between individual goals and the Nuclear Division vision, goals, and Standards of Performance.

The Restart Task Force was established. The RAP feedback process was effective and evoked positive reactions by most interviewees; people appreciated the opportunity to contribute to the Plan. The required response time for RAP review and comment was a problem for some; by the time it reached the worker level, many had only a day or two for review and comment.

An Integrated Team of selected Nuclear Division, support group, and Restart Task Force representatives was established. The Integrated Team consists of Mid-level managers from line organizations, and meets bi-weekly to review and approve NIP action plans, provide input to the restart effort, and resolve issues encountered in developing, implementing, and self-assessing restart actions. The Team has been effective in executing its charter and is recognized throughout the Nuclear Division as a model for inter-departmental cooperation. Assessment observations at meetings revealed that team members openly and candidly communicated and tried to understand one another's viewpoint.

The last Corrective Action associated with this target (Communicate to the organization the importance of timely identification and resolution of deficiencies using specific issues 4, 6, and 17 as examples of the need to resolve potential system operability issues in a more timely manner) has not yet been completed. A draft document has been produced and is under review.

When this draft document is finalized, before restart, this target will be met in total.

Target 5.1.b A demonstration that team efforts have been used in solving three problems involving multiple departments.

Assessment Results

This target has been met. Throughout the assessment period, evidence of team efforts to solve problems has been apparent; for example, inter-departmental problems were solved routinely in the Integrated Team and Wednesday scheduling meetings. Examples of problems in which representatives from different departments contributed to the solution include the Main Steam Line Radiation Monitoring System, Feedwater Nozzle, and Bellows leak. All of these instances demonstrated teamwork between Operations and Engineering; depending on the problem, other departments, such as QA, contributed as appropriate.

There is a pervasive spirit of willingness, cooperation, and commitment at the worker level toward improving the nuclear program by working together to achieve success.

Target 5.1.c A demonstration that management is committed to the team-building process and has begun to transmit the spirit of teamwork through the ranks. This demonstration will be evidenced by behaviors which promote open communications and by a willingness to work together to attain common goals.

Assessment Results

This target has been met. As indicated during the interim assessment and confirmed during the follow-up assessment, many noticeable improvements have occurred in the spirit of teamwork during the past several months. The formation of the Integrated Team, composed of middle managers, and of OTPAC, composed of Operators and Trainers, has been very effective in creating an atmosphere of open communications between departments. The relationship between operators and trainers and between operators and their supervisors has shown improvement, as evidenced by many individual and group interviews, by observations, and by an NRC exit interview. Most workers throughout the Nuclear Division feel free to openly express their opinions, ideas, disagreements, and feelings; they also indicate that they are usually asked to participate in decision-making and problem-solving which involves them. Teamwork within work groups has improved somewhat, although the workers feel that intra-group teamwork has always been good. Off-site team building sessions are being conducted to promote teamwork between groups, especially between those groups which have historically had difficulty in working together effectively. The management/union relationship has also been improving. All of the meetings observed, although quite long, were well-run, had agendas, included a self-assessment, and demonstrated an open exchange of ideas and concerns; positive feedback (e.g., "good idea", "good point") was a common occurrence at meetings.

The interim assessment suggested several areas where improvements in teamwork were needed. During the past three months, progress has been realized in virtually all of these areas. While the barriers between certain organizations (Engineering/Generation, Engineering/QA, Nuclear/Materials Management, Nuclear/Employee Relations) have not disappeared, members of all of these groups are working together to clarify their individual roles and responsibilities, to resolve issues, and to solve problems. Off-site team building sessions have been held between some of these groups (Engineering/Generation, Engineering/QA), while detailed action plans have been developed for other groups (Employee Relations, Materials Management). Interviews with members of all of these organizations have indicated that working relationships are improving as understanding of and appreciation for the other organization's responsibilities increase.

At the time of the interim assessment, not all managers and supervisors had accepted ownership of the management and organizational effectiveness issues. As a result of the Town Hall meetings and Direct Report expanded staff meetings, all supervisory personnel were made aware of what is expected of them in these areas. Based upon follow-up interviews, supervision is becoming more aware of the need to include the workers in decision-making and problem-solving activities. They are regularly emphasizing the need to improve teamwork both within and between work groups, and are providing ample opportunities for the workers to raise issues and concerns either at regularly scheduled meetings or on a "walk-in" basis.

Meetings continue to consume a significant portion of managers' time; most managers, while they feel that they spend too much time in meetings, also feel that the meetings are necessary. They do try to improve the effectiveness of these meetings by insisting upon an agenda, by actively trying to keep the meeting focused on the agenda, and, in some cases, by asking to leave the meeting if they feel that their presence is no longer contributing to the meeting. Implementation of an effective Management By Walking Around program may help to decrease the need for so many formal meetings.

Since the interim assessment, the functional organization charts have been revised and reissued. A review of this latest version indicates that much of the overlapping confusion has been eliminated. Document reviews also indicate that teamwork was exemplified in the creation of these charts. All organizations provided input and comments prior to this latest release. A feedback form was included with the charts to allow people to suggest modifications and improvements. As indicated above, understanding of roles and responsibilities is a necessary first step to achieving teamwork.

Target 5.1.d The senior management and the Integrated Team are aware of what they do as a group which promotes and impedes collaboratively getting their work done. They are in the process of implementing behaviors which reinforce the positive aspects of their working together and manage the negative aspects of working together.

Assessment Results

This target has been met. The Integrated Team serves as a model for inter-departmental cooperation and communication. They openly express their opinions and concerns with one another, they are well-prepared for their team meetings, they provide positive feedback for one another's ideas, and there is little evidence of discord during the meetings. Their self-assessment process has resulted in suggestions of ways in which they can improve the effectiveness of the Integrated Team; many of these suggestions have been implemented.

Since an interim assessment, the senior management team has made great strides in working together effectively. As a result of that interim assessment, they began meeting and working together as a team to try to determine how they can improve their management and organizational effectiveness. Several action items resulted and were assigned to one or more members of the senior management team.

During the last few months, the Direct Reports have not only become more aware of what they do as a group which promotes and impedes getting the work done, they have also made a more conscious effort to model the teamwork standards of performance. Although teamwork difficulties between Engineering and Generation were recognized during the interim assessment, the leaders of these two groups have demonstrated to their organizations that they need -- and want -- to work together as a team to attain common Nuclear Division goals. At both the Engineering and Generation Expanded Staff meetings, demonstrations of an improving relationship were evident (comments such as "Jim did a great job" and "his direction is great"). The presence of these two Direct Reports at one of the Engineering/Generation team building sessions was also viewed as a positive sign by those who attended this session.

While it will obviously take time for the perception of a lack of teamwork on the part of senior management to completely disappear, interviews indicate that people at all levels are aware that teamwork is improving among the Direct Reports.

Target 5.1.e A process is in place such that management and organizational issues are identified, discussed and either resolved or assigned to an ad hoc multi-department team for resolution (as appropriate).

Assessment Results

This target has been met. The interim assessment indicated that there is no process in place for discussing and resolving management and organizational concerns. This finding was based on concerns raised in some of the group interviews, where the interviewees felt that they had legitimate problems and concerns and that no one was listening to them.

Senior management indicated that the process to be used should be the Chain of Command and, during the past few months, the use of this chain has been emphasized at meetings at all levels of management. Larry Burkhardt made it very clear at the Town Hall meetings that he expects the Chain of Command to be "our main channel for communication and action". Follow-up interviews at all levels indicated that the Chain of Command is becoming more and more effective. Although there is still some confusion regarding when it should be bypassed, the proper use of the chain of command is frequently discussed at the Executive Vice President's staff meetings.

Follow-up was done on the specific groups who raised concerns during the initial assessment. In all cases, action was taken to further define and to resolve these issues.

Assessment Conclusion Basis No. 5

The results of this assessment indicate that this Basis has been achieved. While, admittedly, there are still some areas where further teamwork improvements should be made, there has definitely been significant "progress toward effective teamwork within the Nuclear Division as evidenced by working together to make decisions, to solve problems, and in general, to get the job done correctly and completely."

Nuclear Division employees, from the Executive Vice President to the lowest level worker, are aware that effective coordination, communication, and cooperation are essential to meeting the Nuclear Division vision and goals. Examples of good and bad teamwork are regularly discussed at meetings of all levels of workers. Contributions of individual team members are also being recognized, both at meetings and via memos; what was once behavior that was taken for granted is now being used as a model for good teamwork.

What teamwork is -- and is not -- is also becoming more evident to Nuclear Division employees. In the past, various Nuclear and non-Nuclear groups were accused of lack of teamwork. In some cases, this was true -- but in many others, the problems stemmed from lack of effectiveness, and not a lack of teamwork. These groups have always wanted to cooperate, but may not have had the training, resources, or skills to meet the expectations of others. Many of these "teamwork" problems are now being solved by better definition of roles and responsibilities, by additional resources, and by training.

Nuclear Division employees now realize that teamwork does not mean that there must be common agreement on all issues. They realize that it is important that all affected parties contribute to decision-making and problem-solving, but that the ultimate decision or solution may not be the one that they may have chosen. The most important element of this process is that timely feedback be provided to all who provided input, regardless of whether or not this input supported the ultimate decision or solution. Based on interviews, this feedback process is still an area which needs improvement, especially at the supervisor/worker level.

Perhaps one of the most important lessons that the Nuclear Division is learning is that teamwork does not necessarily mean meetings or group efforts. There is now a realization that you can demonstrate teamwork in many little ways -- by passing memos along to people you think may be interested in them, by saying "hello" to your co-workers in the hall, by making your colleagues aware of situations that you have just learned about and which could affect them, etc. An excellent example of where teamwork does not mean working together is the disagreement that Carl Terry had with the Integrated Team over a NIP item. In resolving the issue (after receiving input from several others), Carl wrote: "The Integrated Team had a concern that two plans would indicate a lack of teamwork. I don't agree. Teamwork includes understanding each other's strengths and weaknesses and roles and responsibilities."

While this assessment has concluded that the teamwork basis has been achieved, it cannot be emphasized strongly enough that all the efforts currently taking place to improve and to sustain the improvements in teamwork must continue. Open and honest communication in both directions and a participative style of management are crucial to the successful startup of Nine Mile 1 and to the ultimate achievement of the Nuclear Division vision and goals.

B. Specific Issues

Following is a description of the format for the Specific Issues. The numbering system is the same as that used in the RAP.

The basic Specific Issues are numbered SI-1 through SI-18. To assist the reviewers, the issue itself is briefly described in the Issue Description. Additional information on each specific issue can be found in the Issue Sub-element and Root Cause discussion included in the RAP. The assessment targets for each issue are contained in the matrix in Appendix 2. After the issue description the Assessment Results are presented.

Assessment Basis No. 6

Following is the basis on which the 18 Specific Issues addressed in the Plan were assessed:

"Results achieved through implementation of restart corrective actions for the RAP Specific Issues shall be sufficient to resolve or provide management with assurance that these issues concerning operator training and qualification, administrative process, and hardware deficiencies will not have an adverse effect on safe plant operations."

The effectiveness of corrective actions demonstrated by the results described in the following summary descriptions of the assessments of the eighteen Specific Issues support the conclusion that Basis #6 is met.

SI-1 Outage Management Oversight

Issue Description

A plan had not been developed for management oversight of outage activities, including work scope identification, planning and scheduling, and verification of items identified as prerequisites to Unit 1 restart.

Items contained in the maintenance/modification backlog that are required to be completed to support the restart of Unit 1 have not been formally identified and addressed in an effective management plan (including a summary of repairs and modifications to the feedwater system).

Assessment Results

Target SI.1: The RAP commitments including text, corrective actions and responses to NRC questions associated with Outage Management have been implemented and verified.

The two CA's requiring the establishment of the interim outage management organization and the issuance of the temporary procedures 88-6, 88-7 and 88-8, have been implemented and verified. The third CA requires SORC to review all CA's; this will not be completed until just before restart. The last two CA's require the submission of this RRR and its ultimate approval by the NRC Region I Administrator; the last one will not be achieved until just before restart. This target is met to the extent possible at this time. It will be fully met when the Company receives permission to restart the Unit.

Target SI.2: The Outage Management process is comprehensively identifying, monitoring and implementing and tracking to completion those activities required for restart.

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The Outage Manager has identified, scheduled, and is tracking most of the items needed to be completed prior to restart. A tracking system for items needed to complete this self-assessment is being developed. When this system is implemented, the Outage Manager will be tracking all items to be completed prior to restart. At the final Panel meeting, the Panel suggested that all INPO and NRC commitments with a due date before restart be tracked by the Outage Manager, even though the commitments may not be directly related to restart. This suggestion will be done. This target will be met with the completion of the actions to incorporate the Panel's suggestion..

Target SI.3: A plan and schedule has been developed for integrating the Outage Management function into the permanent Nuclear Division organization prior to the next scheduled Unit 1 refueling outage.

The Manager Nuclear Projects - Outages has been filled. This person will incorporate the lessons learned by the Outage Manager during the current outage. A plan is in place to develop all the required procedures describing the duties of the new organization so that the new organization can prepare for the next refueling outage. This target is met.

Summary Assessment SI-1

The interim organization is in place and functioning effectively. The required temporary procedures governing closeout of the restart related activities have been issued and are being used. The organization has identified all activities needed for restart and executes the scheduling and tracking functions and provides management with appropriate data. The permanent organization has been approved and staffing is in progress. The permanent organization has initiated activities to make the transition from the interim to the permanent structure; the lessons learned by the interim organization will be passed on to the permanent group.

SI-2 Maintaining Operator Licenses

Issue Description

Operator licenses were not maintained in accordance with 10CFR55.

Assessment Results SI-2

TARGET S2.1: The RAP Corrective Actions and commitments associated with maintaining operator licenses have been implemented and verified.

This target has not been fully met. Ten of the seventeen RAP Corrective Actions have been closed out and the remaining are in progress and scheduled for completion prior to restart. Based on the current status and progress to date the assessor concludes that all the RAP Corrective Actions associated with maintenance of operator licenses should be effectively implemented and verified and this target will be fully met.

Based on interviews, discussions, and observations, it is apparent that operations management has demonstrated ownership of the operator training programs. Operator competency has improved and the training operation is running more smoothly. Operators understand expectations regarding training attendance and conduct. Operators also feel that operations management listens more to their problems, and they consider the environment to be more conducive to learning than it was a year ago.

Operators believe that forming OTPAC was one of the best things the Company could have done. Operations and Training were formerly adversarial; now, they work together to resolve problems. OTPAC meeting minutes are distributed to all shifts. Operators and instructors believe management participation occurs at the decision-making level. Operators have a better understanding of the fact that some things take time to correct.

An OTPAC meeting attended for assessment was well structured and held substantive discussions on a number of significant issues. Overall, a professional attitude was evident, the discussions were appropriate and maintained good interaction, did not raise false hopes, and the cost of doing business was taken into account in discussing actions.

The Superintendent of Training assures training quality by taking his own training and through discussions with trainers and operators. As a member of OTPAC, he evaluates the training program, reports information to the Operation Superintendent, and conducts interactions with the NRC and INPO. He has discussed with senior management the problem of getting and retaining qualified operators in the Training department.

Additional positions have been authorized and filled. Of eleven positions authorized for training, eight have been filled, with three remaining open. If these positions cannot be filled by Operations personnel, it may be necessary to use contractors.

The Supervisor of Simulator Technology reviews all modifications performed at the plant for simulator change applicability. The intent is for simulator modifications to be implemented within 12 months following operations acceptance at the plant.

Simulator-plant fidelity differences are being discussed at training sessions.

Instructors are professional, knowledgeable on the subject matter, welcome questions, stimulate the interest of operators, and, if answers cannot be given immediately, they are following up appropriately. Operator self-critique and instructor critique of operators' simulator activities appear to increase their attention and skill.

Procedure NTP-11, "Licensed Operator Retraining and Continuing Training," was revised as a follow-up to an NRC exit discussion on the definition of responsibility. Procedure NIT-2.1, dealing with records, was also revised to reflect the uniqueness of licensed personnel requirements.

The assessor interview with the Training Records Supervisor indicates that the record-keeping requirements of 10CFR55 are being met by the present staff, and that the training directives of entering data within 10 days after activity completion are also being met. An upgrade to the computerized record-keeping system is being implemented.

Target S.2.2: Operators demonstrate a professional attitude in identifying and resolving problems and concerns associated with maintaining their operator licenses.

Based on personal observations of operators in classroom and simulator training, personal discussions with operators, review of the Quality Assurance interview feedback, and attendance of an OTPAC meeting, the Assessor concluded that operators have demonstrated a professional attitude in identifying and resolving problems and concerns associated with maintaining their licenses. Operators understand and accept the general rising expectations of performance.

The conflict between operations and training that was observed and documented by regulatory agencies has been resolved. The Assessor did not witness adversary or antagonistic relationships between operations and training. Both operations and training management appear to be taking effective corrective steps in resolving this issue. This target has been met.

Target S2.3: A process is in place which will prevent recurrence of similar issues, and will identify and resolve trends that could lead to violating 10CFR55.

The process to prevent recurrence of similar issues and to identify and resolve trends that could lead to NRC violations is in place. Niagara Mohawk procedures have been established to meet regulatory requirements and provide proper controls. Inconsistencies that exist between procedures, general orders, and definitions of responsibilities have been corrected or the specific corrective action is nearing completion. This target will be met upon completion of the remaining RAP Corrective Actions and the actions identified in Appendix 4.



Target S2.4: The job and task analysis for requalification of RO's/SRO's and development of training material based on this analysis is on schedule for completion by July 31, 1989.

Based on discussions and observations, the assessor concludes that the development of training material resulting from the job task analysis is being appropriately prepared. This target will be fully met when the actions are completed.

Summary Assessment SI-2

Based on the preceding observations and discussions, the Corrective Action results provide management with assurance that operator license concerns dealing with operator training and qualification, procedures, administrative processes, and hardware will not have an adverse effect on safe operation of Unit 1.

The conflict between Operations and Training that was observed and documented by regulatory agencies has been resolved. During the assessment there was no evidence of an adversarial relationships between Operations and Training.

Operators have demonstrated a professional attitude in identifying and resolving concerns associated with maintaining their license and they understand and accept rising performance expectations.

SI-3 Emergency Operating Procedures

Issue Description

Implementation of Emergency Operating Procedures (EOPs) to respond to simulated plant transients was less than adequate.

Assessment Results

Target S3.1: The RAP Corrective Actions and commitments associated with Emergency Operating Procedures have been implemented and verified.

This target has not been fully met. Thirteen of the nineteen RAP Corrective Actions have been closed out and the remaining are in progress and scheduled for completion prior to restart. Based on the current status and progress to date the assessor concludes that all the RAP Corrective Actions associated with maintenance of operator licenses should be effectively implemented and verified and this target will be fully met.

Based on operator and instructor interviews, observation of operator performance, and review of lesson plans, training aids, examinations, simulator scenarios, and training records, the operators understand the bases of EOPs and believe that good guidance is being given for plant responses to accident conditions.

Operators are more confident in using EOPs. They consider the EOP flow-charts to be a significant improvement. Trainers began to see progress during EOP training in the last quarter of 1988. Because of the human factor reviews, operator involvement in EOP changes and validation and changes that occurred at the simulator, operator attitude and understanding have greatly improved. Trainers believe the operators are becoming part of the solution for training and operating concerns.

Training attendance is good, operators arrive on time, and they show a professional attitude. Most of the Station Shift Supervisors advocate training, and the goal is excellence. At training sessions for each of the five operating shifts and one staff shift there was good participation by Operations and Training management. During management critiques there was some tenseness; however, a professional attitude was generally maintained.

Operators were interviewed at random to verify the existence of a written EOP policy, their awareness of it, and their familiarity with its intent. Procedure NI-ODI-1.03 was covered in Cycle II training and in "Night Orders." It appears that the policy was not well communicated initially, but following training coverage of the issue, it was well communicated.

The Operation Superintendent understands his responsibility and accountability for the EOP training program. The Training Superintendent and instructors understand their responsibilities in support of the EOP training program. The Assessment indicated that the Operation Superintendent and Training Superintendent complement and support each other in their different tasks.

There is stronger support by Operations and Training management in identifying deficiencies. Implementation of the Systematic Approach to Training (SAT) is expected to result in major changes.

Training supervision reviews all course evaluation sheets and solicits direct feedback from operators. Training has recently revised procedure NTP-11 to address delinquencies, deficiencies observed in operations shifts or individuals, and discipline problems.

Supervision in Training and Operations plans to rotate an SRO in training, to work with instructors, make observations and evaluations, give status reports on the simulator, and have daily meetings with training supervision.

The Training Superintendent works closely with the General Superintendent - Generation and the Executive Vice President - Nuclear Operations to resolve major issues. If training deficiencies occur, notices are sent to appropriate managers. With installation of the computerized record-keeping program, the Operation Superintendent will be able to directly access pertinent training information.

The procedure AP-2.0 has been revised to include QA in the review of EOP procedures. The QA Operations Surveillance group will be responsible for QA issues relating to EOPs. Assessment interviews indicated that appropriate personnel are aware of the changes.

The Operation Superintendent is responsible for assuring that operators are trained. The Operation Superintendent demonstrates good management in dealing with people, respects the competence of the operators, allows and encourages the operators to learn, and requires strict adherence to training programs.

Operating procedures (OPs) are reviewed to ensure that sections referenced by EOPs address the intended subject. This has been an ongoing process that was initially completed in 8/88; however, because of changes made to EOPs, OPs, and special operating procedures (SOPs), the process has continued, and is being tracked by the Outage Manager.

During walk-downs, it became apparent that many tools to be used for performing OPs and SOP directives under emergency conditions were not properly identified, and there was not an available inventory of these special tools and equipment. This situation is being corrected, and is being tracked by the Outage Manager.

An Operations Supervisory Instruction (OSI) to control EOPs has been issued and implemented. This assures that procedures referenced by EOPs are not revised without first assessing the impact on EOPs.

A Human Performance Evaluation was completed on 2/1/89 and addressed 21 suggested corrective actions.

As revealed during interview feedback and personal discussion, one of the reasons for past problems was that operator training appeared to be Training's problem rather than Operations' problem. In the past, trainers sometimes felt they were "operating in a vacuum." Presently, the Operations Superintendent is clearly responsible and accountable for operator training, and the Training Department provides the training. Further, the operators believe they share responsibility for their training.

With the change-over to flow-chart EOPs, operators are more confident in dealing with emergency conditions. The original EOPs were confusing and extremely difficult to follow.

Target S3.2: The EOP's to be implemented in an emergency have been verified and validated. The current set of EOP's are adequate to assure the Company that the plant can be operated without an adverse impact on safety.

This Target will be fully met when all the RAP Corrective Actions are completed. However, based on review of the issues, personal observations, and planned actions by Niagara Mohawk, the assessor concludes that the EOP's are being effectively addressed to assure that the plant can be operated without any adverse impact on safety.

Target S3.3: Administrative processes and procedures are in place to be sure that EOP's, EOP support equipment, and supporting procedures are maintained effectively.

This target has been met. The assessor has determined that the process and procedures are in place for effective maintenance of the EOP's and their supporting procedures and equipment.

Target S3.4: All NMP-1 operating crews have been trained in the effective use of and understand the basis for the content of the EOP's, with respect to their assigned responsibilities.

This Target has been met. As stated above, the operators understand the basis of the EOP's and they believe that proper guidance is being given for plant responses to accident conditions. Operator involvement in EOP changes and validation have had a positive effect on their usage and understanding of EOP's. All the NMP 1 operating crews have been trained in the effective use of the EOP's.

Target S3.5: The requalification program has been enhanced to increase operator skill and proficiency such that operating crews will maintain a high level of performance in the use of the EOP's.

This Target has been met. The process of enhancement of the requalification program is in place. The attendance at training is good; operators appear at training in time and generally show a professional attitude. The Training Superintendent and Training Instructors understand their responsibilities in support of the EOP training program. The Operations Superintendent and Training Instructors understand their responsibilities in support of the EOP training program. The Operations Superintendent and Training Superintendent complement and support each other's activity, and training deficiencies are quickly identified. The Operations Superintendent meets with each shift at the completion of the training cycle to discuss areas of concern and how to improve the program. A method is in place for evaluation of trainers and simulator scenarios. This whole process will assure that operating crews maintain a high level of performance.

Target S3.6: EOP instructors' qualification and certification records are up-to-date and the process for maintaining these records has been enhanced to ensure that records are maintained current.

This Target has been met. All required records related to instructors' qualification and certification records are in place and fully satisfy procedural requirements. Procedures have been revised to ensure that these records are maintained current.

Target S3.7: There is a process in place for the operators and instructors to collaboratively assess the effectiveness of the EOP training.

This Target has been met. Based on interview feedback and personal discussion, the Assessor concluded that previous problems in this area existed because operator training was perceived by the organization to be the responsibility of the Training Department and not Operations Department. At present, it is clear that the Operations Superintendent is responsible for the training of his operators, that the Training organization is the means by which operators receive the necessary training, and that the operators also believe that training is their responsibility. The operators appear to be part of the solution to problems. Other factors that support the conclusion that this Target has been met are included in the previous discussions for Targets 1 and 5.

Summary Assessment SI-3

Based on the preceding observations and discussions, Specific Issue 3 results are sufficient to resolve EOP related problems, and to provide assurance to management that EOP issues relating to operator training and qualification, procedures, administrative processes, and hardware deficiencies will not have an adverse effect on safe plant operation.

SI-4 Inservice Inspection

Issue Description

The Unit 1 first 10-year In-Service Inspection (ISI) interval ended in June 1986, concurrent with completing the 1986 outage. Two months later, a concern about a through-wall leak on the reactor building closed loop cooling heat exchanger was identified to management. Investigation of this concern led to discovering an incorrect disposition of a defect reported during ISI hydrostatic testing. In July 1987, QA conducted an audit of ISI deficiency procedures. This audit identified several deficiencies in the Deficiency Corrective Action (DCA) process.

Further investigation disclosed that a number of components listed in the ISI program were either not examined or were missing records for the examinations by the end of the interval. The investigation scope was expanded, and it was determined that other examinations required by the ASME Code were not included in the program plan. Subsequent Niagara Mohawk reviews identified several omissions or errors in the first and second 10-year-interval program plans.

Assessment Results

Target S.4.1: The RAP Corrective Actions and commitments associated with inservice inspection have been implemented and verified.

The intent of this Target has been satisfied; however, the Target will be fully met upon close out of the remaining RAP CAs.

The ISI organization and assignment of responsibilities has been completely revised. The original contractor still performs many of the Unit 1 examinations, but they are now completely under Niagara Mohawk's QA Operations NDE (NQAO-NDE) Supervisor. Their remaining responsibilities are also under the auspices of Niagara Mohawk personnel. Currently, the site ISI Coordinator is responsible for developing the ISI program plan and scheduling examinations. The NQAO-NDE group is responsible for:

- writing examination procedures
- performing examinations
- recording results
- evaluating results
- issuing NCRs
- reviewing the disposition of NCRs

As part of the corrective action program, Niagara Mohawk committed to verifying that all examinations committed to be performed in the first 10-year-interval program have been completed by the end of this outage. The process involved reviewing the first 10-year-interval program plan and delineating the examination requirements. Data packages were assembled for each required examination. Through interviews and selected review of process documents, it is evident that the process was well planned and executed, reviews were thorough, personnel were well qualified and dedicated, and results were well documented.

Target S.4.2: The system boundaries, components and the necessary inspections to satisfy the requirements of the ASME Section XI 10 year inservice inspection are clearly identified in a Niagara Mohawk inspection plan for Nine Mile Point Unit 1 (for the past and current 10 year intervals).

This Target has been met. The ISI program requirements were established from Sections IWA, IWP, IWV, and IWF of ASME XI. The requirements of Sections IWB, IWC, and IWD establish the inspection requirements and are discussed later. In addition, the requirements of 10CFR50.55a were examined and compared with our ISI program. Finally, the ISI program was compared to the Inspection Requirements of NRC Inspection Procedure 73051.

The requirements of ASME XI were compared to two top-level documents (XI-P and AP-8.3) to see if each Code requirement had an analogous requirement in both of these documents. A comparison of these documents was also made for consistency in the assignment of responsibilities to various Niagara Mohawk organizations.

Unit 1 is exempt from the requirement of IWA 1500 by 10CFR50.55a. Responsibility for meeting all of the remaining requirements has been assigned by ASME XI-P.

Target S.4.3: All inspections required to satisfy the past 10 year inservice inspection interval have been completed.

The intent of this target has been met in that all inspections have been identified and scheduled. Based on the results of CAs 4.A.5, 4.B.4, 4.D.2, and the response to operative CARs, all of the inspections required by the first 10-year-interval program plan will be completed by the end of this outage. The completion of these inspections will satisfy this target.

Target S.4.4: The interim organization with the necessary resources as well as the responsibility and authority to effectively manage the implementation of the inservice inspection program is in place.

This Target has been met. Interviews with key supervisors indicated their satisfaction with the resources at their disposal to implement the ISI program. Although some growing pains have been experienced, the interim organization is functioning very well.

Target S.4.5: Approved interim administrative processes and procedures governing the implementation of the inservice inspection program, particularly the disposition of identified deficiencies, are in place.

This Target has been met. The assessor has reviewed all applicable procedures and has found that they comply with the appropriate sections of the ASME Codes and NRC requirements. The assessor found some instances where clarification could make the procedures easier to use. There were places where it was not apparent whether the procedure applied to Unit 1 or Unit 2. The assessor recommended that the Company review the way procedures are related and clarify them where required. This suggestion for improvement will be pursued after restart.

Target S.4.6: An appropriately detailed plan and schedule to establish and transition the responsibility for inservice inspection to a permanent organization is in place.

The intent of this target has been met. Although there is no written plan in place, the permanent ISI organization is described quite accurately by the Unit 2 procedures, although the detailed roles and responsibilities of some members of the organization are different from the roles described in these procedures. The roles and responsibilities have continually evolved during the course of the assessment.

The creation of a permanent ISI organization is a specific requirement of the NIP. The permanent organization is to be in place for the next scheduled Unit 1 outage. The objective of the NIP is being achieved through the creation of roles and responsibilities in developing the ISI field organization as it evolves from an interim into a permanent organization.

Target S.4.7: Personnel in the organization using contractors are familiar with the processes and procedures relating to control of contractors.

NMPC Policy NMPD-30 has been developed for the control of contractors to NMPC and will be issued during September 1989. When issued, this target will be satisfied.

Summary Assessment SI-4

As a result of the comprehensive document review, interviews with key NMPC personnel involved in the ISI program, NMPC response to the CA's, and the results of the independent vertical slice on the Core Spray System, it can be concluded that all of the regulatory requirements for the First and Second Ten Year Intervals have been satisfied and that the CA's and Targets specified to be achieved prior to restart will be met by that time.

SI-5 Control of Commercial Grade Items

Issue Description:

During a Niagara Mohawk QA audit in October 1986, commercial grade items were identified that had been accepted without an adequate engineering evaluation. This allowed items to be available for issue in safety related systems for which acceptability could not be demonstrated.

Assessment Results

Target S.5.1: The RAP Corrective Actions and commitments associated with the control of commercial grade items have been implemented and verified.

This Target has been met. The assessment of the evaluation of previously-procured commercial grade items is based on sample-basis verifications and INPO exit briefing comments. INPO commented that the Materials Engineering group is "performing exceptionally well and will be noted for a 'good practice.'" This is further attested by the following SALP report statement:

"The licensee has developed a detailed commercial grade dedicated program to upgrade equipment to safety-related status. This program was developed based upon discovery by the licensee of weaknesses in the [NSSS vendor's] commercial grade items dedication processes and the necessity to resolve potential electrical equipment safety concerns prior to Unit 2 initial licensing. The licensee's program employs the EPRI guidelines and the documented engineering evaluations were determined to be thorough and technically sound." (SALP Report no. 50-220/88-99 and 50-410/88-99)

Target S.5.2: Personnel in the various organizations (Materials Management, Purchasing, Maintenance, Quality Assurance, Design Engineering, Operations) know how their function contributes to the control of commercial grade items and how to implement proactive steps to resolve problems associated with the control of commercial grade items.

This target has been met. Control of commercial grade items is assured; however, because the process and procedures are relatively new, many of the individuals in supporting organizations are learning how their function contributes to the control of commercial grade items, and how to implement proactive steps to resolve problems associated with this control.

In interviews, specific examples of inefficiencies or delays in the material control process were cited, but strong control of commercial grade items was acknowledged. Improved communication among Maintenance, Material Control, Procurement, and Materials Engineering were suggested by each of these groups as a means of improving the efficiency and effectiveness of the process.

Maintenance personnel also indicated that setting and communicating priorities sometimes contributed to frustration based on unavailability of parts. Interviewed personnel related some of the technical issues that complicate such issues.

The Supervisor - I&C indicated that some of the slow response in getting parts was because of lack of automatic re-stocking. The Manager - Nuclear Generation Material Management indicated that the system is capable of automatic economic order points, but historical information for order points does not yet exist. This information is being accumulated and will be input to the system as acquired.

Based on the results of interviews, organizations outside of Materials Management and Materials Engineering are near the top of their learning curve on the commercial grade material program. The program is effective in controlling commercial grade items, but has not yet matured to the point of achieving rapid response and high efficiency.

Target S.5.3: The permanent staffing of Materials Engineering and the integration of Materials Engineering with interfacing organizations is proceeding on schedule.

This Target has been met. The Materials Engineering group was formed more than a year ago and has been staffed with a few key permanent employees and a relatively large number of contractors. The Manager-Materials Management indicated that the large staff of contractors will be required for some time, and permanent employees will be added to the staff as the equilibrium staff level becomes better defined. The assessor considers this to be a prudent approach.

Target S.5.4: Actions have been taken or are planned that will lead to the early identification and resolution of material control problems in the future.

This Target has been satisfied. Regular materials management meetings are held at the site and Salina Meadows. The Manager - Materials Engineering meets regularly with senior management and the Outage Manager to facilitate communications for potential materials problems. He has been initiating communications with other utilities to share experiences and data, and to explore the potential for cooperative ventures in commercial grade items procurement. These activities assure that recurrence of this concern will be prevented.

Summary Assessment SI-5

A successful program for controlling commercial grade items has been developed and implemented. The process is relatively new and personnel are learning the process. As training and experience are accumulated, efficiency and responsiveness will continue to increase.

SI-6 Fire Barrier Penetrations

Issue Description:

While installing a modification on 3/26/88, a wood plug was discovered in a fire barrier under the Unit 1 battery rooms. Further investigation identified additional fire barrier penetrations that deviated from design requirements. Therefore, Niagara Mohawk initiated a program to evaluate the adequacy of fire barriers having regulatory significance.

During the root cause evaluation of the fire barrier penetration discrepancies, Niagara Mohawk discovered that open items remained from an audit conducted by Gage-Babcock between 1984 and 1986. These open items covered other areas of the Fire Protection program, beyond fire barrier penetrations. Therefore, Niagara Mohawk extended the restart program to include the fire barrier evaluation and close out all open items from the Gage-Babcock audit.

Assessment Results

Target S6.1: The RAP commitments including text, corrective actions, and responses to NRC questions associated with the Fire Barrier Penetrations have been implemented and verified.

The RAP commitments are in varying stages of completion; they will all be completed before restart. As the assessment was carried out, several questions and suggestions for improvement were raised by employees. All questions regarding the adequacy of the work performed were resolved; the suggestions for improvement will be factored into the long term program for maintaining the adequacy of the fire barriers.

This target will be fully met before restart when all CA's and associated items in Appendix 4 are closed.

Target S6.2: The installed configuration of the fire barrier penetrations is equivalent to those tested and meets the requirements of the fire barrier itself as defined in the Fire Hazards Analysis.

The existing program was reviewed by a consultant. It was found that the existing penetration seals were acceptable or had been repaired and were in conformance with the current seal designs. The physical condition of the existing penetration seals was found acceptable. Additional field checks or calculations will be completed prior to restart, in order to get the statistical confidence level to the desired level. When these actions are complete this target will be fully met.

This target will be fully met before restart when all CA's and associated items in Appendix 4 are closed.

Target S6.3: An effective process, including trained resources, is in place to monitor and evaluate the condition of fire barriers.

The assessment brought forth criticisms of the existing procedure and the drawings in that they are cumbersome to work with since the drawings have too much detail and the procedures could be clearer. The procedures will be

clarified and the Company will determine whether it is feasible to produce a simplified drawing from existing drawings for the fire department to use during inspection walk-downs. It should be noted that the fire department personnel did consider the existing documents usable as they stood today. A consultant reviewed the Company's program and recommended strengthening programmatic controls and technical information regarding percent fill, maximum opening size, and maximum separation. The existing program is effective, but the recommendations for improvement will be factored into the program after restart.

This target is met based on the adequacy of the existing program.

Target S6.4: The design basis for fire barrier penetrations is documented with necessary revisions incorporated and actions have been implemented that assure that this design basis will be maintained.

Engineering Procedure NEL-046 has been issued. It covers interfaces within Engineering and the need for multi-disciplinary review. The assessment determined that the current design basis documentation was adequate, but that concerns regarding drawing control and barrier definition would be included in the Configuration Management Upgrade Program discussed under Specific Issue 14.

This target is met in principle as a result of the determination that the current design basis is adequate. It will be met in total before restart when the breach permit procedure is finalized and the data base maintenance resources are finalized.

Target S6.5: An effective plan is in place to transition the maintenance responsibility for this design basis from the task force to the permanent organization.

A program manager has been appointed and a plan is in place to capture the lessons learned from the fire barrier task force. This target is met.

Target S6.6: An effective plan is in place to ensure that future audits of the fire protection program are appropriately coordinated and followed up.

Engineering Procedure NEL-046 addresses future QA audits including the responsibility for execution of the audit and for any required follow-up. The procedure will be revised to handle all future audits. This target will be met before restart when the procedure is changed.

Summary Assessment SI-6

The problem, associated root causes and corrective actions as described in the RAP were found to be adequate and comprehensive. The existing penetration seals were acceptable or had been repaired and are in conformance with the current seal designs. The physical condition of the existing penetration seals was found to be acceptable.

During the course of the assessment, there were several findings and resultant recommendations. All of the findings required for restart have been resolved to the point where the assessor is confident that restart will not be affected.

SI-7 Torus Wall Thinning

Issue Description

During an inspection conducted in 4/88 and 5/88 (combined Inspection Report 50-220/88-09 and 50-410/88-09), the NRC performed independent measurements of torus wall thickness. The NRC's measurements were close to the minimum wall thickness required by our original stress calculations and NMPC's Mark I containment program calculations. The NRC inspectors believed it was necessary for Niagara Mohawk to take action before the next (1990) outage, and requested us to provide justification for operation until 1990.

Assessment Results

Target S7.1: The RAP Corrective Actions and commitments associated with torus wall thinning have been implemented and verified.

This target is met. The Niagara Mohawk position on Torus wall thinning was presented in a 4/26/88 meeting with the NRC. The presentation included statistical analysis of the wall thickness reduction trend, analysis of the increase in margin that might be gained by considering actual plate material strength, and evaluation of the effect of local areas of less than general area minimum wall thickness. Evaluation of the effect of local thinning had been performed by Teledyne as part of the overall analysis of torus wall strength requirements.

In a subsequent 6/17/88 letter (NMPIL 0272), Niagara Mohawk committed to torus shell thickness measurements approximately every 12 months. Niagara Mohawk's letter of 1/12/89 (NMPIL 0343) revised this interval and states that torus wall thickness measurements will be performed every six months (beginning after 4/30/89) until the long-term corrective actions have been completed.

Responsibility for Site NRC inspections was assigned to Regulatory Compliance, and Salina Meadows inspections to Licensing.

Wall thickness measurements were made in 4/88, at the locations previously monitored, and again in 11/88, at two locations that had previously been monitored (135/ azimuth at bottom and waterline) and established additional locations for measurements of torus wall thickness at 0, 90, 180, and 270 azimuth.

An NRC inspection was conducted in 12/88, in which wall thickness measurements were again made by the NRC. The results were summarized as follows:

"Thickness measurements of three grid areas...on the torus for minimum overall thickness were performed. No violations were identified and no discernible change in the torus wall thickness occurred since previous NRC inspections were conducted in April, 1988." (IR 50-220/88-81)

The same report noted the commitment to submit a letter to the NRC by 1/31/89 defining the schedule for long-term corrective action and stating an intention of perform wall thickness measurements approximately every six months until those actions have been implemented.

Target S7.2: There is a documented and scheduled program for addressing torus wall thinning.

The torus wall thickness program, which documents and schedules the long-term approach for tracking torus wall thickness, was approved in early 4/89. This plan was the basis for the 4/89 measurements discussed in the preceding paragraphs. It also specifies that measurements will be taken approximately every six months, starting from 4/89.

Niagara Mohawk's 2/14/89 letter informed the NRC of a decision to install mid-bay saddle supports on each of the 20 torus bays. The letter also stated the following:

- The plan was to complete the installation by the end of the next scheduled refueling outage.
- There was some uncertainty regarding the schedule because of incomplete engineering status.
- Niagara Mohawk may (at some future time) want to delay saddle support installation until a later refueling outage, based on analysis of actual material properties.
- Analysis of allowable stress intensity based on certified material test reports (CMTRs) indicates the initial design margin is greater than indicated by allowable stress intensity values from the ASME Code.

CMTRs for the material used for the construction of the torus are available although 10 to 15 percent of the certifications cannot be identified to specific plates used in the construction of the torus. The company has been able to determine that materials for which CMTR's could not be identified were not used in the thinnest regions in the bottom of the torus. The thinnest plates are those for which the CMRS's are positively identified. The additional margin which would result from actual material properties would permit operation beyond the next refueling outage.

It is the assessors understanding that work by Teledyne, Inc. under this program has led to alternative structural modifications (straps or lateral beams) that may be more effective than saddle supports. The data acquired in the inspection indicate that the design evaluation program being conducted by Teledyne incorporating alternative design modification approaches will be effective in addressing the torus thinning issue from a structural perspective.

The program referred to above constitutes completion of the corrective action and has provided the basis for a comprehensive follow-up on the assessors' observations. The second target is considered as having been achieved.

Target S7.3: NRC inspections are being appropriately coordinated and supported.

The assignment of coordination responsibility, together with positive feedback from the NRC, indicates that NRC inspections are being appropriately coordinated and supported. Therefore, the third target is considered to have been accomplished.

Summary Assessment SI-7

The assessor reviewed documentation and backup calculations performed by the Company and questioned the adequacy of the data and statistical analyses. The Company performed additional thickness measurements and performed more rigorous analyses on the data.

Interior inspections included visual, photographic, and surface impressions. Area averaged ultrasonic measurements of the thickness of each plate making up the bottom mid-bay portion of 20 torus bays were taken. The analyses, performed by MPR Associates, Inc. and accepted by the assessor, concluded that the torus wall thickness is adequate for more than the next operating cycle. Based on this assessment all the targets have been achieved.

SI-8 Scram Discharge Volume

Issue Description:

In 12/87, a concern was identified with Niagara Mohawk conformance to the 6/24/83 Confirmatory Order relating to the scram discharge volume at Unit 1. The items under question dealt with level instrument taps location and performance of a 50 percent control rod density test.

Through discussions and meetings with the NRC, these items have been satisfactorily resolved, with the exception of a periodic testing program to assure continued operability of the scram discharge volume. The periodic testing issue will be resolved by submitting a Technical Specification change to require a fill and drain test of the scram discharge volume each refueling outage if a scram has not occurred during the previous operating cycle, or if the pressure boundary has been breached.

Assessment Results

Target S8.1: The RAP Corrective Actions and commitments associated with scram discharge volume have been implemented and verified.

This target has been met. A revision to Nuclear Division Policy No. 3 was approved by the Executive Vice President - Nuclear and issued on February 27, 1989. This revision addressed the need to obtain formal NRC concurrence on Niagara Mohawk Actions with respect to exceptions to new or revised regulations.

A test on June 17, 1989 demonstrated the adequacy of the Scram Discharge Volume. On October 12, 1988, the NRC issued a letter concurring with the test method.

Target S8.2: The organization and functional responsibilities associated with the interpretation, implementation, and management of commitments, as well as exemption requests, is clearly determined and understood within the Nuclear Division.

This target will be met prior to restart with the completion of the actions identified in Appendix 4. The policy for control of NRC commitments, DCP3, will be revised, and the functional organization charts reissued to ensure clarity of responsibility for making commitments to the NRC.

Target S8.3: Personnel understand and implement related policies.

This target will be met prior to restart with the completion of the actions to address Target S8.2 and communication of these actions to appropriate personnel. A procedure for tracking commitments on the NCTS by Licensing staff has been developed and issued.

Summary Assessment SI-8

A test of the adequacy of the Scram Discharge Volume was conducted and the NRC concurred with the test method. A revision to NDP3 has been drafted and agreed to by the assessor. Functional organization charts will be revised to be consistent with this policy and will describe the responsibilities associated with the interpretation, implementation, and management of commitments. Implementation of the NCTS will help to ensure that personnel understand and implement related policies.

SI-9 Emergency Condenser and Shutdown Cooling Valves

Issue Description:

Niagara Mohawk made several commitments to the NRC to resolve the Appendix J issue for Unit 1, and revise the Technical Specifications and FSAR to be consistent with Appendix J requirements. Exemption requests were submitted for certain valves; however, it was not followed up with the NRC to obtain their approval of our Appendix J problem and exemptions.

The main issues to be resolved for Appendix J are testing the emergency condenser condensate return valves and the valves in the suction isolation valves, which had to be local leak rate tested in accordance with Appendix J. These were considered to be extensions of containment and/or closed systems. Based on this consideration, Niagara Mohawk had not performed Type C local leak rate tests on them.

Target S9.1: The RAP CAs and commitments associated with Appendix J testing of valves has been implemented and verified.

Assessment Results

The exemption requests have been submitted to the NRC. Review of the NRC responses confirmed that the exemption requests for the emergency condenser valves and the shutdown cooling system valves were approved.

A water seal procedure for the containment spray valves has been prepared. A Safety Evaluation and modification necessary to implement the procedure are being developed. These actions and approval of the procedure by the NRC must be completed prior to restart.

An exemption request for the containment spray discharge line isolation valves must be submitted only if the procedure being developed for the containment spray system is not approved by the NRC.

In addition to verifying the specific CAs, the assessment plan verified agreement between the NRC and Niagara Mohawk on all Appendix J issues. Review of the SER, Niagara Mohawk's clarification letter, and the NRC response letter confirmed that the NRC and Niagara Mohawk have agreed on the resolution of all Appendix J issues.

IST personnel verified that all items in the SER that were determined to be IST issues rather than Appendix J issues were being tested in accordance with the IST program.

Licensing confirmed that all agreed-upon Technical Specifications changes are being developed, none of which are required for restart.

Target S9.2: A schedule exists for implementing the program for satisfying schedular exemptions taken to Appendix J.

Modification Requests to replace these valves in order to make them testable in accordance with Appendix J requirements are presently in the review and approval process. The modifications are currently scheduled for the next refueling outage.

Target S9.3: A process is in place which will assure the Company that the scope and content of the Appendix J testing program is maintained current and implemented in accordance with the NRC Appendix J safety evaluation and Technical Specifications.

This Target has been met. NMPC personnel have participated in the BWROG effort to develop a program plan to implement Appendix J. This program has been completed by the BWROG and is being prepared for submission to the NRC for their review and approval. Using this program plan, NMPC is developing a NM-1 Appendix J Program Plan. In addition, a Containment Specialist position has been created in the Systems Engineering group within Nuclear Generation. It is intended that this person will be the single point of accountability for the Appendix J program. Having a defined program plan and single point accountability should result in an up to date Appendix J program and assure that the program is maintained current and implemented properly.

Summary Assessment SI-9

Based on observations and discussions, Niagara Mohawk and the NRC are in agreement regarding Appendix J at Unit 1.

To maintain the Appendix J program current, Niagara Mohawk is are developing an Appendix J program plan. This plan will address all aspects of Appendix J and will be administered by a specific department and person, similar to the IST program.

SI-10 Reactor Vessel Pressure/Temperature Curves

Issue Description:

The chemical composition of vessel material surveillance coupons removed from the vessel was compared with the vessel base metal. This revealed that the original coupons might have been made from a different heat number than marked.

Assessment Results

Target S.10.1: The Restart Action Plan (RAP) Corrective Actions associated with Reactor Pressure Vessel P/T curves have been implemented and verified.

This target has been met; both corrective actions associated with this target have been closed out, verified and deemed acceptable by the assessor. A letter was submitted to the NRC on June 16, 1988 to notify them of the possible discrepancy by the Company, to summarize the information available to the Company, and to justify the use of the existing pressure-temperature curves.

After receipt of the Niagara Mohawk letter the NRC performed a safety evaluation which was transmitted to the Company on September 14, 1988. The evaluation concluded that the pressure-temperature limits are conservative and therefore acceptable, completing the corrective action.

Target S.10.2: There is a documented and scheduled program for developing correct data for the P/T curve.

This target has been met. Activities associated with this effort are in the initial stages and address the NRC concern that the Company should determine the identity of the test material in the surveillance program and submit revised pressure-temperature limits before the current limits expire at the end of thirteen effective full power years.

One of the activities which is underway is an investigation at Battelle-Ohio to resolve the possible discrepancies in the identification of surveillance capsule materials. That investigation will rely on chemical and metallurgical evaluations and various documentation related to construction of the pressure vessel. The results of this investigation should permit a determination of whether the pressure-temperature limits might be revised, based on identification of the vessel material, to be less conservative.

These activities are being performed as part of the NIP Program Item N.6.1.11.

Summary Assessment SI-10

The exchange of letters between the Company and the NRC dealing with the RAP Corrective Actions constituted completion of the corrective actions and, therefore, of the first target.

The second target deals with the longer term (after restart) where technical questions related to reducing the conservatism in the current operating constraints are to be resolved. A NIP program has been established to address this long-term need; based upon the assessor's review of this NIP item, the requirements contained in the second target are satisfied.

SI-11 Erosion/Corrosion Program

Issue Description:

In combined Inspection Report 50-220/88-09 and 50-410/88-09, the NRC identified a concern regarding implementation of the Unit 1 Erosion/Corrosion Program. As noted in 50-220/88-09, the NRC examiner felt that procedures for taking balance-of-plant piping measurement data did not establish adequate controls over the process to provide meaningful data and assure repeatability of thickness measurements.

However, the NRC examiner had been given incomplete raw data, which had not been reviewed or accepted by Nuclear Engineering and Licensing. The concerns did, however, reveal the need for improving the oversight of contractor activities.

Assessment Results

Target S11.1: RAP Corrective Actions associated with the erosion/corrosion program are to be implemented and verified.

This target has been met. All RAP corrective actions for this issue have been completed, verified and closed by SORC.

Target S11.2: Contractor procedures and instructions are clear.

This Target has been met. The assessor believes that the CB&I pipe marking procedure that led to difficulties in assuring repeatable measurements is, in the present revision, reasonably clear.

Target S11.3: Appropriate Contractor oversight actions are being effectively implemented.

This Target has been met. The Erosion/Corrosion program definition models the approach recommended by NUMARC, but in the current revision does not specify organizational responsibilities. The organizational responsibilities for the program are defined in a draft version of the Unit 2 program.

Oversight of contractors has been addressed by a recently issued Nuclear Division Policy. The next inspections will be performed during the next refueling outage.

Summary Assessment SI-11

The assessment actions found that pipe wall thickness measurements have been made in conformance with the erosion/corrosion program. Relevant procedures have been revised to address concerns about consistent marking of piping and components to assure repeatability of measurement location. A review of the contractors practices, and the Company's oversight, indicates that they are now appropriate.

SI-12 Motor-Generator Set Battery Chargers

Issue Description:

In preparation for a 10CFR50.59 review, Engineering, Operations, and Licensing began a complete review and verification of the 125 VDC electrical system design basis. During this review, it was discovered that the safety classification of the motor-generator set battery chargers (M-G sets) did not properly reflect their intended post-accident function. In 1983, M-G sets 161 and 171 had been reclassified to non-safety related. Consequently, for approximately five years, work had been periodically performed without requiring application of 10CFR50 Appendix B.

Assessment Results

Target S12.1: The RAP Corrective Actions and commitments associated with the Motor/Generator Set Battery Chargers are implemented and verified.

The intent of this Target has been satisfied, but the Target will not be fully met until all RAP CAs are closed out. Appendix B determination documentation has been prepared and the Q-List updated to reclassify the M-G sets as safety related components.

A Lessons Learned Transmittal that details the concern and includes cautionary statements about using inadequate documentation has been issued and reviewed by personnel involved in Appendix B determinations.

A cross-disciplinary review was conducted of system and major component-level determinations that have downgraded components from safety related to non-safety related--to ensure adequate justification and accuracy, and to document the results in a report.

The cross-disciplinary review report is completed. Sixteen Appendix B determinations for downgrading systems or components were reviewed by a task force consisting of consultants from Licensing, Technical Services, Mechanical Design, and Electrical Design. Task force results were positive in terms of accuracy of determinations. However, several open items remain in the report, and recommendations were made for improving Appendix B determinations in the future.

The MG set components installed after 1983, and maintenance work that has been done were investigated to determine whether quality requirements of 10CFR50 Appendix B and qualification requirements were met. The results were documented in a report. Also, non-conforming items were corrected by dedicating them or replacing them with items procured as safety related--as specified in NCRs based on report findings.

An Engineering Report has been prepared that includes the design basis for the Battery Chargers, however, the report is being revised to incorporate justification for the ratings of the Battery Chargers. Change documentation has been prepared to update the FSAR and other documents to reflect that the Battery Chargers are now classified as safety related.

Target S12.2: Safety classifications are performed properly.

This Target has been met. Procedures are in place that provide a framework for guiding personnel through the process of Appendix B determinations in a consistent manner. As a supplement to these procedures, a methodology has been developed covering both the gathering of documentation pertinent to the safety evaluation being performed and review of the validity of that documentation for use by the performer as the bases for the evaluation being conducted. The methodology will provide for cross-disciplinary reviews of safety evaluations to aid in preventing insufficient documentation from influencing the outcome of the safety evaluation.

Target S12.3: Personnel involved in safety classifications understand the specific issue, Niagara Mohawk policies, and regulatory requirements.

This Target has been met. A Lessons Learned Transmittal has been prepared and issued to Licensing personnel which describes what is considered to be good engineering practice in performing Appendix B safety evaluation determinations for Nine Mile Point Unit 1.

Summary Assessment SI-12

The assessment found that the MG set battery chargers have been classified as safety related and the Q-list has been updated. A task force reviewed and found acceptable the Appendix B determinations that had downgraded systems or components. Procedures for performing Appendix B determinations have been augmented to provide guidance on the technical aspects of the process. Appropriate training will be provided. When the training is completed and all open items are closed, the causes of this issue will be appropriately addressed.

SI-13 I&C Technician Allegation Issue

Issue Description:

As a result of 14 allegations made by an I&C technician in 7/86, Niagara Mohawk conducted an in-depth evaluation of the specific allegations and their programmatic implications. The evaluation indicated four programmatic areas common to the issues:

- Root cause evaluation
- Procedure compliance
- Material control
- Management effectiveness

A task force was formed to evaluate the specific technical issues. Additionally, an advisory committee was established to evaluate the outcome of the technical issues review and to assess the programmatic areas. Based on this evaluation, Niagara Mohawk developed short-term and long-term programs to correct the specific programmatic areas. If all of these long-term programs had been implemented, Niagara Mohawk would still have fallen short of resolving the problems relating to this area.

Assessment Results

Target S13.1: The RAP CA's and commitments associated with the implementation of long term programs related to I&C technician allegations have been implemented and verified.

Based on interviews conducted by the assessor, responses received from a questionnaire, review of progress made on Underlying Root Cause #2 (Problem Solving), and personal observation on the effectiveness of getting employee buy-in as part of executing the RAP CA's, the assessor judges that this target has been met.

Target S13.2: A RAP for Nine Mile Point 1 has been developed and is being implemented which has the following characteristics:

- a. A comprehensive problem identification process has been implemented to provide management a high degree of assurance that problems impacting performance of the organization and the plant have been identified.
- b. A systematic assessment of the root causes of the problems has been conducted.
- c. Personnel impacted by the actions in the RAP have been sufficiently involved in the development or approval process of the corrective actions such that they know and buy-in to these actions.

It is the assessor's opinion that the RAP satisfies this target.

Summary Assessment SI-13

Several individuals were interviewed and questionnaires were randomly distributed in the effort to determine the effectiveness of these CAs. The main focus was to ascertain whether individuals were familiar with the methods available for bringing their concerns to the attention of appropriate personnel and organizations. If so, it was important to ascertain whether they were satisfied with the outcome, and whether they had provided input to the resolution. This was an opportunity to discuss people's feelings on how well the efforts to promote teamwork were progressing. The following observations seem to be the consensus of the Nuclear Division's thoughts.

All responding or interviewed personnel were aware of the problem identification process and were not reluctant at this point to identify a concern. However, some indicated that they were discouraged with the timeliness of corrective actions. Most of the interviewers and respondents felt great improvement had been made in the problem identification and resolution process.

Most people indicated that they had an opportunity to offer their input and acceptance for RAP items affecting them. Several were pleased with the progress made in opening up communications in their discipline. Notably, QA and Mechanical Maintenance were recipients of favorable comments on their efforts to improve communication and teamwork.

Most of those surveyed or questioned felt communication with other departments was improving, but improvement is needed in communicating with off-site groups.

The majority of people were impressed with the improvement made to promote teamwork and communication. Overall it appears that the actions taken will prevent similar problems from happening in the future.

SI-14 Safety System Functional Inspection

Issue Description:

A Safety System Functional Inspection (SSFI) was conducted at Unit 1 by the NRC from 9/12/88 through 10/7/88. By letter dated 10/26/88, the NRC provided a summary of the significant SSFI findings in advance of the formal SSFI Inspection Report, so that appropriate corrective actions could be incorporated into Unit 1 restart planning activities.

On 2/1/89, the NRC provided Inspection Report 50-220/88-201, which added two new open items. Other open items are consistent with the NRC Quick Look Letter. These two new open items are also included in this assessment.

Assessment Results

Target S14.1: The RAP commitments including text, corrective actions and responses to NRC questions associated with the SSFI have been implemented and verified.

There are twenty-seven CA's associated with this issue. The CA's are in various stages of completion, verification, and SORC acceptance. The tasks to be completed prior to restart are listed in Appendix 4. In addition to the closure of those items in Appendix 4, the assessment has generated many suggestions for improvement. The improvements include making clarification on system descriptions, revising procedures, enhancing training, and augmenting programs to review industry information. Where these improvements are judged as needed for safe operation, they are scheduled for completion prior to restart; when they do not compromise the safe operation of the plant they are slated for completion after restart.

There has been significant progress toward completing the CA's to know that all issues have been resolved to the point of being confident that when the remaining items listed in Appendix 4 are complete, this target will be completely met.

Target S14.2: The specific deficiencies identified during the NRC's SSFI have been resolved.

All of the deficiencies identified by the NRC are included in the RAP. As noted under the target above, some of the actions to resolve the deficiencies are included in Appendix 4 for completion prior to restart.

Target S14.3: Specific deficiencies in Design Basis documentation and generic implications identified through the problem reporting process which could impact the ability to operate the plant with a high assurance of safety have been resolved.

Specific deficiencies in Design Basis documentation have been reported through the problem report process; several of these have been resolved and the rest are being evaluated. All problem reports concerning this topic will be evaluated prior to restart. Any reports which cause a safety concern will be resolved prior to restart.

This target is met in principle and will be met completely before restart with the conclusion of the problem report review.

Target S14.4: An approved resource loaded plan is in place to develop and implement a design basis reconstitution and configuration management upgrade program.

As the assessment of this and other issues progressed, several recommendations were developed to make the configuration management program more useable and useful. Recommendations for improvement in the control of setpoint changes and calculation inputs for licensing documents will be implemented. Other recommendations are being included in the overall configuration management upgrade effort. An approved plan exists for performing Design Basis reconstitution.

Due to the expansion of scope and the desire to implement some of the recommendations immediately, less progress had been made toward getting the resource loaded plan in place as compared to the targeted position. With the completion of the resource loading of the plan recently, this target has been met.

Target S14.5: An effective plan is in place to control changes, e.g. alarm setpoints, flow diversion devices, system resistance calculations.

As part of the response to the SSFI, the Company has performed a comprehensive review of all alarm setpoints and has provided engineering guidance for their control. Control of flow diversion devices and system resistance calculations will be addressed as part of the Configuration Management upgrade program discussed under Target S14.4. In the meantime, interim measures have been or will be put in place.

The target is partially met now and will be fully met when the Configuration Management upgrade plan is complete prior to restart.

Target S14.6: An evaluation of other technical specification or safety systems has been done for similar deficiencies.

Other systems and related issues have been checked and some deficiencies were noted. The deficiencies are being corrected. Nuisance alarms covered by the SSFI have been resolved; other examples of nuisance alarms provided by the operators are not safety related, but they will be resolved after restart.

Inconsistencies and errors in the Technical Specifications have been valuated. The specific changes required by the SSFI have been incorporated. Two systems have been reviewed in detail with no significant problems resulting. A complete review of other systems has been added to the NIP for completion after restart.

A review of the Automatic Depressurization System Design Basis versus Emergency Operating Procedures has shown instances where the operator was instructed to take actions which compromised the Design Basis. A review plan has been developed, and, before restart, EOP's will be reviewed to determine if there are other similar instances. If so, the procedures will be changed and the operators will be trained in the corrected procedure.

This target has been met in principle with two exceptions. For restart, further work is needed to check potential flow diversion and consistency of EOP's with the Design Basis. The items for longer term enhancement should be addressed as part of the NIP.

Summary Assessment SI-14

The response to the SSFI has been comprehensive and appropriate. The Task Manager and others have taken a positive approach to resolving the specific deficiencies noted by the NRC. They have also broadened their response to cover other systems and similar problems. The problem, associated root causes and corrective actions as described in the RAP were found to be adequate and comprehensive.

During the course of the assessment, several findings and recommendations were made. Those necessary for restart have been or will be implemented before restart; others dealing with long term improvement will be included in the NIP. Sufficient progress has been made or will have been made by restart to give the assessor confidence that problems such as those arising from the SSFI will not have an adverse impact on safe plant operations.

SI-15 Cracks in Walls and Floors

Issue Description:

Specific Issue No. 15 raised concerns regarding the effect of cracking on the structural, and shielding integrity of masonry and reinforced concrete walls and floors at Nine Mile Point Unit #1. Specific Issue No. 15 can be divided into two (2) separate categories: 1) actions required prior to Unit #1 restart and 2) long-term strategies. The actions required for restart consists of five (5) specific issues as identified in the RAP. These issues are the following:

1. Cracks in Reactor Building wall along Column Row K,
2. Cracks in Turbine building wall along Column Row J,
3. Apparent cracks and leakage of the Spent Fuel Pool,
4. Cracks in concrete ceiling and walls of the steam tunnel; and
5. Cracks in masonry walls.

Long-term strategies entail actions to preclude a future recurrence of this issue and require implementation within six (6) months after unit start up.

The cracks in concrete were initially identified by individual problem reports, while the cracks in the masonry walls were initially identified during the Fire Protection Walk Down. The occurrence of these cracks (i.e., immediately after construction, recently, etc.) is unknown as no systematic program for the reporting, identification and/or tracking of cracks existed prior to this issue arising.

Assessment Results

Target S.15.1: The RAP Corrective Actions and commitments associated with the cracks in walls and floors have been implemented and verified.

This target has been met; all corrective actions have been implemented and verified. This assessment concurs that the cracking identified in reinforced concrete structures is cosmetic in nature and does not impact the load capacity or serviceability of these structures. Additionally, the root causes identified do not indicate ongoing problems for future concern. Further, structural degradation due to leakage through cracks in the spent Fuel Pool is also not a long-term concern. These conclusions were based on selective review of existing documentation and no new calculations were performed.

Collection of leakage from the Spent Fuel Pool tell-tale pipes from 1/2/89 to 3/18/89 established the following: 1) the Spent Fuel Pool as the likely source of the leakage based on chemical analysis of the collected water and 2) the magnitude (one liter/day) and daily variations of the leakage through the cracks. Future monitoring of leakage is planned after unit start up, and may also be performed during reloading.

The assessment found that the program with regard to masonry wall cracking was well-conceived, thorough, and well-executed; the assessment also concurs with the methodology used to resolve this issue. The inspection, evaluation, and repair of the masonry wall structures are adequately addressed by the existing procedures reviewed as part of this effort. During this particular assessment phase, several items of concern were identified but were resolved to the satisfaction of the assessor (for example, a concern regarding the effectiveness of surface grouting was resolved by restricting its usage to non-structural cracks).

Target S.15.2: A plan and schedule for implementing a process for the identification, reporting and evaluation of cracks has been developed.

This target has been met. A program for identifying, mapping and assessing cracks in concrete and slabs (other than the four (4) cracks identified in RAP) and masonry walls is planned under the Nuclear Improvement Program (NIP). This provides an acceptable means of tracking the development and ensures the implementation of this program. The scheduled completion date of 10/31/89 and 2/28/90 for masonry walls and concrete, respectively, satisfies the commitment in RAP for implementation within six months following unit start up. This fulfills the requirements for this restart target.

Target S.15.3: Follow-up to assess the effectiveness of the repairs has been performed or is planned, scheduled and appropriately tracked.

Incorporation of a procedure for assessing the effectiveness of the recent repairs within the overall crack inspection and evaluation program being developed under NIP satisfies the requirements of this target. As such, the NIP tracking and schedule commitments apply.

Summary Assessment SI-15

This assessment finds the corrective actions are satisfactory and agrees with the previous evaluations: the cracking in reinforced concrete is typical for structures of this construction and type, and are not of structural concern. The cracking does not affect load capacity or serviceability, and the identified root causes do not indicate ongoing problems of future concerns. No structural repairs are necessary, but cosmetic repair may be appropriate.

A program for identifying, mapping, and assessing and additional cracks in concrete (other than the three cracks identified in the RAP) is planned under the Nuclear Improvement Program (NIP). This satisfies the RAP requirement for long-term strategies and is essential to preventing recurrence of this Issue. No additional actions are required before startup.

SI-16 Feedwater Nozzles

Issue Description:

Since 1981, feedwater nozzle examinations have not covered the full volume required by NUREG 0619. Additionally, calculations to resolve findings on the SE nozzle were based on erroneous wall thicknesses.

Target S16.1: The RAP CAs and commitments associated with the feedwater nozzles have been implemented and verified.

Assessment Results

This Target has been met. Feedwater nozzle examinations are performed in five parts, to examine the total volume required by ASME Section XI and NUREG-0619. Aside from the requirements specified in ASME XI, which are well defined, NUREG-0619 required a UT examination of nozzle safe ends and bores. Through the assistance of General Electric, Niagara Mohawk established complete feedwater nozzle examination requirements and made adjustments to the procedures. Final examination requirements are documented in NQA089-223.

Examination records for each of the five inspections performed on each of the four nozzles were reviewed for completeness and information quality.

A number of indications were found in the safe-end weld and nozzle bore area of the "A" feedwater nozzle. The method of evaluating these indications was reviewed and compared to Code requirements. The results were accurate and within acceptance Code standards.

The MPR calculation performed in 1977 after cracks were discovered and repaired in the Southeast and Southwest feedwater nozzles were revised. This calculation was performed to predict crack growth in the inner radius, assuming a nominal flaw size. In the calculation, the nominal nozzle wall thickness of 4.5 inches was assumed, rather than the post-repair thickness of 3.0 inches. The wall thickness assumption was found to have no effect on the calculation results.

The most recent examinations have found the inner radius of the nozzles to be free of indications.

The Second 10-Year-Interval ISI Program Plan is not finalized. Niagara Mohawk has committed to the NRC to submit the revised Program Plan six months before the next refueling outage. Requirements for the nozzle examinations were identified in the response to CAR88.2031 and are documented in MD-88577 Revision 4.

Based on this assessment, the feedwater nozzles have been examined in accordance with the requirements of ASME Section XI (1983 Edition with Summer 83 Addenda) and NUREG-0619. All indications have been evaluated and found to be acceptable in accordance with code requirements. No further actions are required before restart.

Summary Assessment SI-16

The examination requirements are documented, the procedures used to conduct the examinations are adequate, and the personnel using them were effectively trained. The method of evaluating indications was found to be appropriate and the calculations accurate. The crack growth calculations were revised and updated to include recently identified indications. The original concerns identified in this issue have been addressed.

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SI-17 Inservice Testing

Issue Description:

Niagara Mohawk began implementing the In-Service Testing (IST) Program in 12/79. The program was revised twice to address NRC comments; however, an NRC Safety Evaluation Report was never issued. In 12/85, the Unit 1 Q-list was substantially revised and reissued. However, the IST Program was not revised to incorporate modifications and Q-list changes. Therefore, certain safety related components were not included in the program.

Assessment Results

Target S.17.1: The RAP Corrective Actions associated with the Inservice Testing (IST) Program have been implemented and verified.

This target has not yet been met since none of the five Corrective Actions have been formally completed. The nature of this target, however, is such that it is not expected to be completed until the IST tests are completed; this target will be met by Restart.

Although not formally closed, two of the corrective actions already have been satisfied. NRC approval has been obtained for Relief Requests required for the Second Interval IST Program. The NRC indicated that there is no need for a separate NRC Interim Relief Request; Generic Letter 89-04 suffices as Nine Mile Point Unit 1 Interim Relief Request.

The NMPC IST Program is acceptable based upon review of the IST Program and the vertical slice samples of core spray and reactor building closed loop cooling systems as performed by the Bechtel Corporation. The actual implementation of the Second Interval IST Program will be accomplished only as the IST tests are completed over the next couple of months and will, therefore, be the last item closed in the IST Corrective Action Program.

IST Administrative Procedure Training has been discussed and the scope of the IST Planned Training has been defined. All IST personnel will be trained, including appropriate Nuclear Engineering and Operating personnel. A list of specific personnel requiring training and the training to be accomplished is planned to be issued, training will be accomplished by September 30, 1989.

Target S.17.2: Assure that there are no open deficiencies or concerns associated with the IST Program.

This target has not been met, although it will be met by Restart. Potential IST safety classification problems were identified by Site Engineering during the IST Program Development. The identified potential problems were forwarded to the Nuclear Licensing Department for resolution. Approximately 125 Q-list concerns were identified; the IST organization with the Nuclear Licensing group have determined and documented that a "Conservative Direction" safety determination was made on all submitted Q-list problems.

Generally, the Q-list concerns addressed clarification of existing components, whether they were safety or non-safety related. The IST Second Interval Program, as written and submitted to the NRC, took the conservative approach and where a classification question existed always assumed the component as being safety related. Therefore, the Licensing interpretations and resolutions would be a "relief" to the existing Second Interval Program and not an imposition of new criteria.

Any Q-list IST safety classification problems will be resolved as a long-term NIP item.

There now exists compatibility between the IST Pump and valve Program and the Appendix J Type C Valve List. It has been committed that this compatibility will be maintained throughout startup. To maintain this compatibility for the long term, an interface procedure will be developed after restart.

Target S.17.3: The second interval IST Program has been developed and is in place for all ASME Classes 1, 2 and 3 safety-related pumps and valves except for those where NRC approved relief requests exist.

This target has been met. While the Second Interval IST Test has not been completed, the Program has been developed and is in place. The assessment has concluded that the Second Interval IST Program is an acceptable program in compliance with regulatory codes and standards.

Target S.17.4: Administrative controls (including clear assignment of responsibilities and interfaces) will be in place to assure that the IST Program is maintained properly when future Design (modifications) and/or Licensing ("Q"-List) changes are made.

This target has not been met. Based upon assessment review, the procedures appear to be adequate to administer the program and to maintain the program relative to future Design and/or Licensing changes. A commitment has been made to have the procedures finalized, approved, and issued by restart. When that is done, the target will be met.

Target S-17.5: Appropriate personnel have been trained on the approved process for developing and maintaining the IST Program.

This target has not been met. As stated under Target 1, IST Administrative Procedure Training has been discussed, but not implemented. All IST personnel, including appropriate Nuclear Engineering and Operating personnel, will be trained by September 30, 1989, and the target will then be met.

Summary Assessment SI-17

Although all of the targets associated with SI-17 have not been met, they are all progressing such that they will be accomplished by restart. All of the Assessment objectives have well-defined activities to achieve their closure. The Second Interval IST Testing (Targets 1 and 3) will most likely be the last objective to be met.

SI-18 125 VDC System Concerns

Issue Description:

During evaluation of the 125 VDC system, several concerns were identified regarding the ability to demonstrate operability and functional capability. These concerns generally relate to an inability to immediately identify design basis requirements and assumptions. Evaluations and modifications are being performed, as appropriate.

Assessment Results

Target S.18.1: The RAP Corrective Actions associated with the 125 VDC system concerns have been implemented and verified.

The intent of this Target has been satisfied, but the Target will not be fully met until all RAP CA's have been completed and verified.

Revised design bases scenario load profiles have been developed, battery sizing and safety system circuit voltage drop calculations have been performed and an engineering analysis is being conducted to demonstrate the capability of the 125 VDC system to meet design and functional requirements. Verification and approval of the analysis and calculations remain to be completed before restart.

Technical deficiencies have been identified in the areas of control circuit voltage drop problems and sufficient battery capacity to meet the design bases. Voltage drop problems are being resolved by plant modifications and capacity problems are being resolved by manual load shedding. The ERV control circuit voltage drop modification remains to be completed and tested. Modification procedures were followed including adherence to all applicable rules and regulations.

Personnel who require training in 125 VDC system capability have been identified and a training course and schedule are being established.

Target S.18.2: Analyses for the 125 VDC system have been completed and the results of the assessment documented.

The intent of this Target has been satisfied, but the Target will not be met until all open items have been completed and verified as described in Appendix 4.

The design bases for the 125 VDC system was reconstituted and the capability of each battery train was analyzed against the new design bases. Battery sizing calculations were performed using the new battery load profiles that were developed during the analysis of the design bases. It was determined that the Appendix R eight hour scenario presents the worst case duty cycle to the batteries. Safety system voltage drop calculations were performed which resulted in the identification of several modifications to be performed to install larger size cable to relieve the low voltage conditions. Battery testing will be performed to augment the calculations to prove capability of the batteries to meet the new design bases. The results of the analysis will be documented in the "125 VDC Station Battery Design Evaluation Report" with attachments which will be revised, approved, presented to SORC, and integrated into a document and design bases control system.

Target S.18.3: The deficiencies identified during the assessment have been dispositioned according to their impact on plant operations.

This target has been met. All technical deficiencies identified as a requirement for the 125 VDC system to meet the new design bases have been resolved and are targeted for completion, verification, and testing prior to restart.

Target S.18.4: A plan for the resolution of deficiencies which can be delayed beyond restart has been developed.

The intent of this Target has been satisfied, but the Target will not be fully met until all open items have been completed and verified as described in Appendix 4.

Deficiencies whose resolution can be delayed beyond restart have been properly assessed. Completion plans will be developed which identify the technical work scope, provide for necessary funding and contain resource loaded work schedules.

Summary Assessment SI-18

The analysis and reconstitution of the 125 VDC system design bases have been completed and approved. Necessary actions have been taken to enhance the capability of the present 125 VDC battery system. Engineering analysis of the 125 VDC system, augmented by testing, will show that the existing batteries are adequate to meet the new design bases when all of the open items have been closed, the causes of this Issue will be appropriately addressed.

C. NRC Generic Restart Guidelines

The Unit 1 restart readiness assessment in this Report addresses the Underlying Root Causes and Specific Issues identified in the RAP. As part of Niagara Mohawk's assessment of restart readiness, these NRC Guidelines are also being considered. The Guidelines indicate areas of NRC review before authorization of a plant restart from an extended shutdown. Together, these Guidelines provide one of the restart bases being used to justify Unit 1 readiness for restart.

(These Guidelines were provided in an 11/23/88 NRC memorandum from Mr. Victor Stello, Jr. to NRC Office Directors and Regional Administrators.)

Assessment Basis No. 7

Following is the basis on which the five NRC Generic Restart Guidelines were assessed.

"Results of corrective actions and plant improvement activities sufficiently address and satisfy NRC Restart Guidelines, such that all issues necessary to support readiness for restart and safe operation have been demonstrated and NRC approval for plant restart may be requested."

The effectiveness of corrective actions demonstrated by the results described in the following summary descriptions of the assessments of the five NRC Guidelines support the conclusion that Basis No. 7 is met.

General Assessment Plan

In general, the five Guideline assessments were based on information and data from the following sources:

- Documentation reviews
- Interviews
- Observations
- Communication among this Report's assessors

The data were reviewed and evaluated against the restart Targets established for each Guideline, using industry and regulatory norms based on the experience and judgment of the assessors. The assessors had available to them input, guidance, and review from the Restart Review Panel (RRP) and its individual members. That support, and the results of individual RRP member assessments are also reflected herein.

1. Root Causes Identified and Corrected

"The root cause of the conditions requiring the shutdown must be properly identified and addressed by a comprehensive corrective action plan, including implementation and verification."

Assessment Results

Target 1.a: A plan has been developed and implemented to identify and address the root causes leading to the shutdown.

The issue of root cause identification and corrective actions is being addressed separately for the following five Underlying Root Causes identified in the Restart Action Plan with respect to Management and Organizational Effectiveness:

1. Planning and Goals
2. Problem Solving
3. Organization Culture
4. Standards of Performance and Self-Assessment
5. Teamwork

Specific corrective actions have been identified in the Restart Action Plan as required to be completed prior to plant restart and as part of the long term Nuclear Improvement Program.

The results of this assessment, based on reviews of a number of NRC and INPO documents and interviews with management, indicate that the process described in the RAP to identify and correct the root causes of the conditions leading to the shutdown has been developed and is well underway. Based on the assessment performed, the RAP adequately addresses the root causes leading to the shutdown.

Target 1.b: Based on the root causes identified, corrective actions have been implemented such that sufficient results have been achieved to address the root causes.

The assessment of this target has been based essentially on discussions with other assessors and review of those assessments related to the five Underlying Root Causes and the eighteen Specific Issues. Those assessments have focused on the individual restart corrective actions identified in the RAP. Based on the results of those assessments, in general, corrective actions have been found to be implemented such that sufficient results have been achieved to address the root causes. In those cases where corrective action implementation is not yet complete, the assessments indicate that the process in place should lead to satisfactory results when completed.

Target 1.c: A process has been established to assure that the effectiveness of the results will be maintained.

A process has been established (i.e., the long term NIP corrective actions) to assure that the effectiveness of the results achieved as a result of the restart corrective actions will be maintained after restart. In addition, management commitment in support of this process is apparent, based on the direction given and progress achieved to date in resource planning for the NIP items.

2. Management Organization

"A qualified management organization is in place to assure that the proper environment and resources are provided to assure problems and their root causes have been rectified, including the coordination, integration, and communication of objectives."

Target 2.a A qualified nuclear management organization has been established for all key management positions and has communicated its objectives.

Assessment Results

Since the shutdown, significant changes have been made in the Nuclear Division management staff. Several positions in the chain of command are filled by people who are new to the position. From the Superintendent of Operations, Unit 1, up through the Executive Vice President - Nuclear Operations, positions are filled by new people:

- Unit 1 Station Superintendent, Manager of Nuclear Services, and Superintendent of Operations are new to that position.
- Executive Vice President - Nuclear Operations, General Superintendent - Nuclear Generation, Superintendent of Training, and Manager of Chem-Rad are new to the Company.
- Assistant to the Executive Vice President - Nuclear Operations is a new position, filled by an experienced employee.

The new Executive Vice President - Nuclear Operations, has strong people skills, experience with restart of troubled plants, a Navy nuclear background, and good relationships with the NRC. He is also demonstrating the qualifications expected of the nuclear management organization through his leadership and direction. Based on the results of interviews and other observations, the qualifications of the nuclear management are being demonstrated.

Objectives have been developed by the Executive Vice President and distributed to his direct reports with clear directions for their dissemination. Our assessment has established that the objectives and their intent have been communicated throughout the organization although it has taken a substantial management effort and all-employee Town Hall meetings to accomplish.

This assessment concludes that programs, systems, and practices that are important to successful nuclear programs are adequately addressed in the corrective actions contained in the RAP and NIP. Those items important to Management and Organizational effectiveness include self-assessment procedures, an independent self-assessment group, mission-vision-objectives statements, strategic planning, standards of performance, senior management expectations statements, nuclear commitment tracking system, mandatory supervisor training, Management-By-Walking-Around programs, and numerous communication tools including "Tell the Superintendent", Integrated Team meetings, and Town-hall meetings. Systems being improved include OEA, prioritization, problem solving, performance reviews, position descriptions, recruiting and training. In summary, the management organization appears to be adequate to support restart and safe operation.

Target 2.b Management objectives reflect a positive attitude toward assuring that safety issues are resolved in a timely manner.

Assessment Results

The Nuclear Division objectives clearly reflect a positive attitude toward assuring that safety issues are resolved in a timely manner, and thus meet the restart target. The objectives include consideration of safety and quality (as would be reflected by NRC SALP and INPO ratings), and call for the implementation of Standards of Performance that would result in quality and timeliness of performance.

Data from the interviews indicate a proper attitude toward safety. Management appears to have a proper attitude toward the timely resolution of safety issues, which is also reflected in the Nuclear Division objectives.

Target 2.c The management organization: i) exhibits good teamwork among its sub-elements; ii) provides strong engineering support for plant activities; iii) has the internal ability to recognize safety problems, develop adequate corrective actions, and verify their implementation and effectiveness; and iv) has an independent self-assessment capability that can identify situations not sufficiently dealt with by the regular functioning of the principal organization.

Target 2.c(i)

Assessment Results

Analysis of teamwork relies primarily on the assessment of Underlying Root Cause 5, provided separately.

There is some perception that management is isolated from lower levels and is not seen by the line organizations to the extent desired. The Town Hall meetings helped to allay this perception. There is also a NIP item that addresses specific "walking around" criteria. The assessment data indicate that substantial progress has been made indicating a healthy trend toward teamwork throughout the organization that would support restart.

Target 2.C (ii)

Assessment Results

In reviewing Niagara Mohawk and external documentation, it appears that on occasions in the past, NMPC had either insufficient technical resources (in number or capability), or did not apply available resources to review contractor performance. Several instances have been identified, both by Niagara Mohawk (in the RAP) and the NRC, in which contractor work was not adequately reviewed.

Based on our interviews with Engineering management, it is our understanding that it is intended that future considerations will be given to establishing in-house staffing levels consistent with supporting normal and planned day-to-day work loads. Non-routing or unexpected work will be performed by

contracting. Engineering management believes this will result in about 25% of the work being contracted out, and will require the addition of about 150 engineers to the 269 currently authorized positions, over 70 of which are currently vacant. Based on our assessment of current staffing levels and vacancies in the Nuclear Division, and our interviews with Nuclear Division management, this projected increase in staffing to support Engineering objectives will require a significant effort.

However, what is key to this restart target is whether strong engineering support for plant activities is provided. It is difficult, in a non-operating environment, to predict what support the operations will receive. Based on the management attention and priority given to operational activities, the recognition of operations as the "client" of engineering, and the resources available, including consultants, we believe that this restart target can be met at restart. However, continuing dedication of engineering support and fostering of teamwork between these two Departments will be required. Clearly the situation is improving. In addition, the existence of a site engineering group has increased responsiveness and availability of engineering support.

Based on the results of the interviews with generation management at the site, engineering support for plant activities has improved and is adequate to support restart and safe operations.

Target 2.c (iii)

Assessment Results

The assessment of this area is being performed separately under Underlying Root Cause 2.

Target 2.c (iv)

Assessment Results

The assessment for this area is being performed separately under Underlying Root Cause 4.

3. Plant Staff

"The operations staff must recognize and carry out their responsibilities in ensuring public health and safety."

Target 3.a: An adequate number of qualified licensed operators shall exist to meet Technical Specifications and regulatory requirements.

Assessment Results

Current Unit 1 practice is to provide for five shifts and a relief shift, each made up of the required Technical Specifications complement of operators. Some overtime seems to be required (to compensate for a current vacancy of one SRO), to fully staff all shifts.

As additional operators become available, management intends to add a sixth shift (similar to Unit 2). Management also expressed a desire to significantly increase the operator staff to provide for flexibility, attrition, and career development. However, specific plans and schedules for this are not yet developed. The plan should include consideration of each level of operator entry and progression, which currently includes:

- SSS (SRO)
- ASSS/STA (SRO)
- CSO (RO)
- NAO-E (RO)
- AO-C
- AO-B

The assessment indicates an adequate current staff of licensed operators to meet Technical Specifications requirements. In a 5/10/89 letter, the NRC agreed with this and stated that "Unit 1 had an adequate number of licensed operators to support a five-crew shift-rotation schedule in accordance with the NRC requirements." Although this is true in the short term (restart), management recognizes the need to increase the number of licenses in the future.

Target 3.b: The operators display a positive attitude toward safety issues.

Assessment Results

Operators generally have a positive attitude toward safety. Historically, there have been some attitude problems; however, they were isolated cases that did not represent a general problem. Interviewees at the plant believe their procedures are in good shape and control room drawings are kept current.

EOP training indicated a possible attitude problem and lack of communication. This did not seem to be a negative attitude toward safety, but rather, operators' overconfidence in their own knowledge. In review, the resolution was apparently educational and helpful, and there appears to be a new appreciation of the importance of EOPs.

The assessment indicates that the existing staff display a positive attitude toward safety issues. Previous attitudes resulting in non-compliance with procedures are improving.

Target 3.c: The operators display attentiveness to duty, fitness for duty, a disciplined approach to activities, a sensitivity for plant trends, security awareness, and an openness of communications and desire for teamwork with other groups.

Assessment Results

No data were found to suggest that attentiveness to duty was even suspected to be a problem.

The Fitness for Duty program is moving ahead and will be implemented this year (1989). Management has been working with the union and has agreement from them on the program. Based on our interviews, the program appears to be accepted by most operators.

In the past, problems apparently existed in this area. Based on interviews with current management, these problems are being resolved.

This assessment indicates that this target is satisfactorily met for restart.

4. Physical State of Readiness of the Plant

"The physical plant, including equipment and procedures, is ready to support restart and safe operation."

Assessment Results

The results and conclusions regarding Physical State of Readiness of the Plant cover a range of issues. In general, this assessment indicates that the process to prepare the physical plant for restart is well under way. A number of items are not yet ready for restart, which was expected. Certain process improvements may result in expediting the resolution of these items.

In all cases, these items appear to be appropriately identified and managed in the current process.

Target 4.a: All needed safety equipment has been demonstrated to be operational prior to restart.

The turnover status is being tracked by Outage Management on separate schedules for each system and depicted on separate Reload and Restart Status Boards. Final acceptability of a system is certified by the Unit 1 Station Superintendent on one of the applicable Temporary Procedures 88-6.0, 7.0 or 8.0, on one of the subprocedures for a system or for a certain commodity, or by completing a completion certification form signed by the Task Manager, SORC and verified by an independent party. Overall Reload and Restart Readiness is certified and approved by the Station Superintendent by signing Temporary Procedure 6.0 and 7.0, respectively.

Target 4.b: Surveillance tests are up-to-date, and reflect modifications and other corrective actions performed during the outage.

Preoperational surveillance tests must be conducted prior to or as part of the system turnover from Outage Management to Operations, who participates in these tests or performs the tests as part of the acceptance of a system. Surveillance tests for equipment and systems that are the subject of one of the 18 Specific Issues in the RAP are being tracked on the Outage List as part of the Corrective Actions. Approximately 20 additional surveillance tests were established as the result of the ISI Specific Issue.

For the last Outage of Unit 2 a deliberate approach had been taken regarding the completion of surveillance tests. A Unit 2 specific procedure was developed to assure that all required surveillance tests would be conducted and a list of these required tests was developed. Regulatory Compliance is currently developing a similar procedure for Unit 1 (a draft does exist at this time) also including scheduled preventive maintenance items. In addition, a list of all surveillance and preventive maintenance items is being generated, including schedule (post restart items are also included).

The Engineering Division is developing a list of surveillance requirements for equipment and systems that will serve as input to the list. These actions are responsive to Underlying Root Cause Corrective Actions 1.2.4 and 1.2.5. This list of surveillance tests (sometimes also referred to as the "list of lists") will be maintained by Regulatory Compliance to assure that applicable surveillance test requirements in the Technical Specifications have been met.

Target 4.c: The maintenance backlog has been reduced to nominal levels.

The three major categories of maintenance items to be completed prior to restart are Work Requests (WRs), Post Maintenance Surveillance Tests (PMSTs) and Modification Work Requests (MWRs).

At this time Operations is systematically reviewing and prioritizing the pre-restart WRs in accordance with Temporary Procedure NI-88-6.5. The WRs are tracked on the Outage List under this procedure, but not as individual items. They are tracked individually on the systems turnover list. Readiness with respect to maintenance items will be by the Maintenance Department signing Temporary Procedure NI-88-6.5 for reload and the corresponding subprocedure to NI-88-7.0 for restart.

Implementation of Temporary Procedure NI-88-6.5 has improved the tracking of maintenance items. It is the overall goal of the Maintenance Department and the Operations Department to achieve a maintenance backlog as low as possible; however, they have recognized the difficulty in reducing the backlog significantly in the short term. Based on the importance management has assigned to this issue and the procedural controls and prioritization established, the process in place should assure that the maintenance backlog will be sufficiently reduced to support restart and safe operation.

Target 4.d: Procedures have been updated and plant staff trained to reflect resolution of the root causes of the shutdown.

Specific Temporary Procedures for the reload, restart and power ascension for this outage have been developed or are being developed by Outage Management. These procedures are not intended to prescribe the "how to" for the Corrective Actions in the RAP but to provide a means of documentation and authorization for the various activities.

Presently there exist more than 5000 different procedures at the site. In accordance with the Nuclear Improvement Program Corrective Action Item 1.1.6 and 1.1.7, a Procedure Services Group is being formed to review and update these procedures; however, this is an effort not scheduled to be completed prior to restart.

Already ongoing is an update of Operating Procedures in accordance with the procedures writers guide. General Electric Company is performing this task, and Operations will review and approve all updated procedures.

As part of a system turnover, Operations will also review and concur in each procedure that was affected by a corrective action or modification that was made. Training in new and revised procedures is conducted periodically (about every five weeks). As appropriate, operator training will also be provided on the simulator or during power ascension.

Target 4.e: The as-built design of the plant is known to agree with the safety design basis as described in the FSAR.

Niagara Mohawk initiated early this year an Engineering Program Integration (EPI) effort which includes a configuration management and a design basis reconstitution program. The EPI is scheduled to be a five year program and has been budgeted for this year. Niagara Mohawk does not intend to take credit for this program in demonstrating that the as-built plant meets the design bases. This effort is being administered and tracked under the Nuclear Improvement Program Corrective Actions 6.1.13A and B.

Management has recognized that at this time there does not exist a well documented data base for the design bases. Thus the demonstration that the as-built design of the plant agrees with the design bases must rely on engineering judgment. The situation is different for NMP Unit 2 which is a more recent plant.

An engineering evaluation is being performed to establish that the as-built condition of the plant is satisfactorily represented by the design documents and is consistent with the safety design bases of the plant. This includes identifying the significant inspections, testing evaluation and analyses programs which have been completed that provide increased confidence in the adequacy of significant systems to satisfy their functional requirements, as defined in the FSAR and Technical Specifications Systems and components at NMP1 for which their readiness is particularly important to safe operation will be identified and addressed.

The engineering judgement will be based to some extent on the results of and the corrective actions taken with respect to the SSFI recently conducted by the NRC for the HPSI and core spray systems (details of the effort are covered under Specific Issue #14 and the results of that assessment will be reviewed and factored into the final report for this assessment). For example, as a result of the SSFI the setpoints for selected ESF systems were reviewed to verify system operability and compliance with the design bases relying on available records and documents such as specific operating procedures; the NPSH and the potential for vortexing was evaluated for pumps that take suction from the torus using available records and in some instances redoing calculations to demonstrate that the design bases are met.

Based on the information obtained during interviews, the awareness expressed for the need for an engineering judgement, the data and results obtained as a result of the SSFI corrective actions, and the initial steps taken by Engineering to prepare the engineering judgement the assessor concludes that an adequate engineering evaluation will be prepared to support the as-built condition of NMP1 prior to restart.

5. Regulatory Requirements

"The plant and its prospective operation is not known to be in conflict with any regulations, and the requirements of the Confirmatory Action Letter (CAL 88-17) have been met."

Target 5.a: All Technical Specification amendments necessary for restart and operation have been issued.

Licensing is responsible for evaluating requests for changes to the Technical Specifications made by any Nuclear Division organization, for preparing the appropriate license amendment request (LAR) for submittal to the NRC, and for assuring timely processing and issuance of the license amendment.

LARs are being tracked with NCTS, as is any other licensing and regulatory issue (discussed further at Target 5.b following). Licensing issues a monthly "Status of Technical Specification Amendment Requests" list to the Unit 1 and Unit 2 Station Superintendents, identifying all Technical Specifications Amendments in process. Feedback to the status and priority of changes is provided. The Technical Specifications list of July 13, 1989 identified 27 Technical Specifications LARs for Unit 1, of which four are required to be issued by the NRC before restart.

As part of this assessment, various members of the Nuclear Engineering and Licensing organization were interviewed to obtain an understanding of the Technical Specification amendments which were needed to support restart. Input from each of the Specific Issue assessors was also obtained to determine if, as a result of Specific Issue corrective actions, additional Technical Specification amendments were appropriate. Based on the interviews and review of the status of amendment requests to the NRC, all necessary Technical Specification amendment requests have been submitted. To satisfy this restart target, these amendments must be received from the NRC prior to restart.

The Technical Specifications status is also addressed in CA 1.2.3 and 1.2.4 of Underlying Root Cause 1. Also, Regulatory Compliance is reviewing all Technical Specifications and establishing a list of surveillance tests that must be performed before restart.

Target 5.b Regulatory licensing commitments (including GDC requirements, generic letters, bulletins, etc.) are known and have been met, as appropriate for restart.

The most direct impact on, and contribution to, the restart effort by the Licensing and Regulatory Compliance Groups is their combined responsibility for RAP CA 1.2.2, which states, "Review and verify that regulatory and licensing commitments are entered onto the Nuclear Commitment Tracking System (NCTS) data base tracking system. Complete items required before startup."

The NCTS has been established and all current regulatory licensing commitments have been entered. New commitments and changes to commitments are entered under rigorous Licensing and Regulatory Compliance controls.

In early May 1989, there were approximately 160 open restart licensing items identified on the NCTS; about half of them required closure before fuel load. The open items on NCTS cover a wide spectrum and include, for example, the Safety System Functional Inspection (SSFI) performed in late 1988, certain specific issues listed on the RAP, surveillance tests and procedures.

For Unit 1, Niagara Mohawk, not unlike most other utilities with plants of similar vintage, does not have a process or program in place that can easily identify all applicable NRC regulations and requirements and how they are met. However, both the Manager of Licensing and the previous Director of Regulatory Compliance have considered this issue and concluded that, based on the process controls in place and the many recent reviews, there is reasonable assurance of compliance with the regulations. Specific considerations that were applied in reaching that determination include the following:

- Many of the Technical Specifications license amendments since 1974 were reviewed to ensure that the plant and all documentation meet these amendments.
- During development of the Restart Action Plan potential weaknesses were systematically reviewed using, for example, LERs and exception reports.

Items on the NCTS list are being evaluated specifically with respect to meeting applicable regulations.

- The activities performed under Temporary Procedures NI-88-6.0, -7.0, -8.0 and their sub-procedures take into consideration how applicable regulations are being met.
- Some complex programmatic regulatory areas were reviewed (e.g., equipment qualification) to evaluate regulatory compliance.

The assessors believe that adequate consideration has been given to this issue, and that reasonable assurance of compliance with the regulations can be provided.

Target 5.c: All conditions of the CAL have been met.

Confirmatory Action Letter (CAL) 88-17 identifies three actions that Niagara Mohawk agreed are prerequisites for restarting Unit 1. The first two, relating to a root cause analysis and preparation of a restart action plan, were the subject of the Restart Action Plan, Revision 1, 3/89. The third action requires the submittal to the NRC of a Restart Readiness Report which is to include: "your bases for concluding that NMP1 is ready for restart, a self-assessment of the implementation of the restart action plan, and your conclusions regarding whether Niagara Mohawk's current line management has the appropriate leadership and management skills to prevent, or detect and correct, future problems."

These actions are also the subject, in part, of NRC Guideline 4 (Restart Readiness) and RAP CAs with respect to Underlying Root Causes 2, 3, and 4, (in particular Corrective Action Objectives 3.2 and 4.2).

Completion of this third target is met by the assessments being provided, and submittal of this Restart Readiness Report.

5. Control of Commercial Grade Items

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the control of commercial grade material. From these assessment actions, the Panel concludes that a successful program for controlling commercial grade items has been developed and implemented. The process is relatively new and personnel are becoming more familiar with the process. As training and experience are accumulated, efficiency and responsiveness will continue to increase. Regular meetings are held to facilitate communications among affected organizations regarding potential materials problems. Niagara Mohawk has been initiating communications with other utilities to share experiences and data, and to explore the potential for cooperative ventures in commercial grade items procurement. These activities provide strong assurance that recurrence of this concern will be prevented. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

6. Fire Barrier Penetrations

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessment actions found that the corrective actions are satisfactory. Fire Barriers and Penetrations have been inspected and deficiencies corrected. The design data base and drawings will be updated. Surveillance, Breach Permits and other procedures will be revised or prepared to incorporate the RAP corrective actions. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

7. Torus Wall Thinning

The assessors reviewed documentation and backup calculations performed by the Company and questioned the adequacy of the data and statistical analyses. Even though this issue was considered closed by the Company and the NRC, in order to respond to the assessor's concerns, the Company performed additional thickness measurements and performed more rigorous analyses on the data.

Interior inspections included visual, photographic, and surface impressions. Area averaged ultrasonic measurements of the thickness of each plate making up the bottom mid-bay portion of 20 torus bays were taken. The analyses concluded that the torus wall thickness is adequate for more than the next operating cycle. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

8. Scram Discharge Volume

The assessors reviewed the documentation related to this issue and interviewed key individuals involved in the resolution of the issue. Policies and procedures governing commitments are being revised to assure they are effective in addressing the need to obtain formal NRC concurrence with Niagara Mohawk actions with respect to exceptions to new or revised regulations. A test procedure to validate the adequacy of the scram discharge volume was prepared, and the test was acceptably performed. Procedures for tracking of NRC commitments on the Nuclear Commitment Tracking System were issued. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

9. Emergency Condenser and Shutdown Cooling Valves

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessment actions found that the NRC and Niagara Mohawk have agreed on the resolution of all Appendix J issues. Niagara Mohawk has received exemptions for testing the emergency condenser valves and the shutdown cooling systems valves. A procedure to provide a water seal for the containment spray valves has been prepared. IST personnel verified that all items determined to be IST issues were being tested in accordance with the IST program. For the long term, an Appendix J program plan is being developed to address all aspects of Appendix J and is to be administered by a specific department. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

10. Reactor Vessel Pressure/Temperature Curves

The assessors reviewed the documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessment actions found that Niagara Mohawk notified the NRC of the possible discrepancy in the reactor vessel pressure/temperature curves in a letter on June 16, 1988. Included in this letter was a summary of the information available to Niagara Mohawk. The NRC performed a safety evaluation, transmitted to Niagara Mohawk on September 14, 1988, that concluded that the pressure-temperature limits are conservative and acceptable. For the long term, Niagara Mohawk has established a program and engaged a contractor to determine the identity of the test material in the surveillance program and the ability to justify less conservative pressure/temperature limits. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

11. Erosion/Corrosion Program

The assessors reviewed documentation related to this Issue and interviewed key individuals involved in the resolution of the Issue. The assessment actions found that pipe wall thickness measurements have been made under the erosion/corrosion program. These measurements indicate that all locations inspected are within acceptable limits or have been evaluated against specific loading criteria, and have included projected thinning during the next operating cycle, and found acceptable. Relevant procedures have been revised to address consistent marking of piping and components to assure repeatability of measurement location. A surveillance of the contractor's grid marking activities was conducted during the current outage. The surveillance confirmed that grid layout spacing and orientation were correct. The Unit 1 baseline measurements have been made. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

12. Motor-Generator Set Battery Chargers

The assessors reviewed documentation related to this Issue and interviewed key individuals involved in the resolution of the Issue. The assessment actions found that the MG set battery chargers have been classified as safety related and the Q-list has been updated. A lessons learned transmittal, detailing the concern and cautionary statements about using inadequate documentation, has

been issued and reviewed by personnel who perform safety class determinations. A task force reviewed and found acceptable the Appendix B determinations that had downgraded systems or components. Procedures for performing Appendix B determinations have been augmented to provide guidance on technical aspects of the process. Personnel who will be performing Appendix B determinations have been identified and have reviewed the lessons learned transmittal on the process and procedures. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

13. I&C Technician Allegation Issue

The assessors reviewed documentation related to this issue, interviewed key individuals involved in the resolution of the issue and also surveyed individuals and observed meetings. The long-term management effectiveness programs which resulted from the I&C Technician Allegations were incorporated in the RAP and most of the corrective actions associated with this issue are duplicated elsewhere in the RAP. In order to determine if the RAP corrective actions were effective regarding implementation of these programs, the assessment focused on the area of problem solving and associated communication issues. The assessor found that there was a consensus that significant improvement had been made in problem solving. Although there is room for improvement in communication, particularly between on-site and off-site groups, there is evidence of significant effort and improvement in teamwork and communication. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

14. Safety System Functional Inspection

The assessors reviewed documentation related to this Issue and interviewed key individuals involved in the resolution of the Issue. The assessor noted that the required calculations and analyses have been completed and are adequate to resolve the concerns raised in the NRC's Safety System Functional Inspection. Necessary modifications required before restart and set point changes resulting from the calculations and analyses have been initiated and will be completed prior to restart. Procedures and specifications have been revised to strengthen the control of design configuration in order to prevent future deficiencies. A comprehensive plan for design basis reconstitution is in place. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

15. Cracks in Walls and Floors

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessment actions found that corrective actions are satisfactory and agree with the previous evaluations: the cracking in reinforced concrete is typical for structures of this construction and type, and are not of structural concern. The cracking does not affect load capacity or serviceability, and the identified root causes do not indicate ongoing problems or future concerns. A program for identifying, mapping, and assessing any additional cracks in concrete is planned under the Nuclear Improvement Program. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

16. Feedwater Nozzles

The assessors have observed that the examination requirements are documented, the procedures used to conduct the examination are adequate, and the personnel using them were effectively trained on their application. The assessor reviewed the exam records for each of the five inspections. The method of evaluating indications was found to be appropriate and the calculations accurate. The crack growth calculations were revised and updated to include recently identified indications. The assessor found these calculations to be well founded and complete. The calculations conclude that all indications are within the limits established by NMPC and Code Criteria. The Company will submit the Second Ten Year Interval ISI Program Plan six months prior to the next refueling outage. The requirement for full nozzle inspection per NUREG 0619 has been appropriately addressed and documented. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

17. Inservice Testing

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessor determined that the NMPI Second Interval IST Program is acceptable and is in compliance with the regulatory codes and standards. A consultant was hired to do an in-depth review of the Core Spray and Reactor Building Closed Loop Cooling systems as regards in-service testing requirements. The consultant's report concluded that the program is acceptable and in compliance with regulatory codes and standards. The report was used as part of the basis for the assessor's overall positive findings. The assessor noted that the NRC has given interim approval for both the IST Program and the included relief requests. The Administrative Procedures are being revised to properly administer the program and to maintain the program relative to future design and/or Licensing changes. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

18. 125 VDC System Concerns

The assessors reviewed documentation related to this issue and interviewed key individuals involved in the resolution of the issue. The assessor determined that the scope and content of the corrective actions are such that the technical deficiencies in the area of control circuit voltage drop and insufficient battery capacity will be resolved by appropriate plant modifications and procedure revisions. Calculations and analyses performed to support the resolution of the technical deficiencies were acceptable and appropriately reviewed and approved by management. Battery testing requirements have been determined and documented. Required tests have been scheduled to be conducted prior to restart. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

C. NRC Restart Criteria

Management has developed and issued functional organization charts which establish and communicate responsibilities. Management objectives have been established and communicated to the staff, and management has initiated an MBWA program to improve visibility and responsiveness in the workplace. In addition, physical plant progress has been significant in areas such as reduction in outstanding work requests, maintenance items, and system readiness for operability. Identification and monitoring of regulatory issues related to restart and safe operation (including Technical Specification amendments necessary for restart) are adequately controlled by Licensing. In spite of the work still remaining to complete the Restart Corrective Actions and to get Unit 1 ready for restart, it appears that the overall program is well controlled and processes are in place to sufficiently address each of the NRC Restart Guidelines. The Panel concludes that the effectiveness of the corrective actions in this area support restart of Unit 1.

V. PREVENTING, DETECTING, AND CORRECTING FUTURE PROBLEMS

The Restart Self-Assessment has resulted in the conclusion that Niagara Mohawk has the management and leadership skills to prevent, or detect and correct, future problems. The information that supports this conclusion is contained in Chapter III and the appendices to this report. In particular the assessment found that the Nuclear Division and support groups have adopted high standards of performance which are being demonstrated in the identification and effective resolution of problems. The assessment also found that the corrective actions, such as "in-line" training, had improved the effectiveness of planning and teamwork in making decisions and solving problems related to performance limiting deficiencies. Finally, the assessment identified programs and policies that had been developed to continue to enhance the assessment and improvement of the activities of the Nuclear Division. This section of the report briefly describes some of the additional actions Niagara Mohawk is taking to enhance its ability to prevent, detect and correct future problems. The programs discussed below are part of the Nuclear Division and supporting groups/organizations ongoing activities.

The Nuclear Improvement Program includes actions to develop a long-term assessment program for preventing, or detecting and correcting, future deficiencies that could jeopardize safe operation of our nuclear power plants. This section of the report discusses the following major elements of the long-term assessment program:

- Expanding the existing assessment programs and integrating into them the concepts established during the restart effort;
- Establishing a separate functional assessment group; and
- Continuing the general practice of internal assessment activities while the permanent program is being established.

A. Expansion of Existing Programs

A key element of the assessment program is to enhance existing programs by incorporating into them specific inter- and intra-departmental assessment activities. Expanding existing programs is an evolutionary process, which is often more readily accepted than new programs that introduce revolutionary change from established practice. The following are two examples of program enhancements already under way:

Commitment Follow-up (under Nuclear Compliance and Verification) - to ensure continued implementation and effectiveness of commitments made to senior management, the NRC, INPO and other agencies.

Annual Strategic Assessments - compare current and past performance to identify strengths and weaknesses; identify internal and external influences on the Nuclear Division and the nuclear industry; and identify strategic initiatives for Nuclear Division Planning.

B. Independent Assessment Group (IAG)

The IAG is a small group reporting to the Executive Vice President - Nuclear Operations. This group conducts or facilitates independent formal, special, and informal assessments of critical areas of Nuclear Division and support group programs and activities. The assessments will help to identify strengths, weaknesses and deficiencies. Reports will be presented to the Executive Vice President - Nuclear Operations and affected managers.

The need for improvements will be identified and presented to line management for appropriate action. IAG personnel will not have line management or organization responsibilities or have direct functional responsibility in areas being assessed. Their most important function will be to evaluate and encourage the self-assessment process within the team organization.

Specific areas of assessment will be operations and maintenance; technical support and engineering; radiation and environmental protection; support programs; and overall management and organizational effectiveness, such as, communication, team-building and leadership.

C. General Ongoing Self-Assessments

The term "self-assessment", as used in Niagara Mohawk's Nuclear Improvement Program, refers to assessment activities conducted internally by responsible members of a department or group. Such internal assessments may be supported by contracted individuals or groups as needed. Self-assessment activities can include:

Meeting evaluations, conducted after meetings to identify strengths, weaknesses, and deficiencies, with recommendations for improvement.

Weekly progress evaluations, conducted at week's end to identify strengths, weaknesses, and deficiencies, with recommendations for improvement.

Assessment of the effectiveness of corrective action results and their continued implementation.

Development of performance indicators for monitoring performance and trends. Evaluation of trends to determine acceptable performance levels and needed corrective actions.

Monitoring department performance in comparison with goals, objectives, and action plans.

Comparison of programs and performance with industry standards and averages.

The SRAB is establishing an ongoing method for continually assessing the effectiveness of the Nuclear Improvement Program.



APPENDIX 4

ACTIONS TO BE TAKEN PRIOR TO RESTART SEPTEMBER 8, 1989

This Appendix identifies those assessment recommendations for which actions remain to be completed prior to restart of Nine Mile Point 1.

- Complete, verify and close out remaining RAP corrective actions.
- Incorporate assessor long term recommendations in the NIP or on NCTS.

(PLANNING AND GOAL SETTING - URC1)

- Revise policy to require communication to appropriate personnel that the department manager must be notified that a commitment is due.
- Executive Vice President approve the Nuclear Division Integrated Priority System and implementing procedures.
- Develop and implement a training plan on the application of the Integrated Prioritization System.

(PROBLEM SOLVING - URC2)

- Develop a plan for communication of the problem ownership process.
- IAG coordinate the development (with line management) of a plan to assess the effectiveness of the problem resolution process.
- Perform a root cause analysis of why 1981 radwaste spill was not cleaned up expeditiously.
- Perform a root cause analysis of why Specific Issue 18 was not closed earlier.

(STANDARDS OF PERFORMANCE AND SELF-ASSESSMENT- URC 4)

- Complete actions required to integrate the Independent Assessment Group into existing functions.

(SI-1 OUTAGE MANAGEMENT)

- Develop an action plan and schedule to involve the Unit 1 Outage Manager directly in the development of the permanent Outage Management Plans and to use the lessons learned from the current outage.
- Complete the review of the seven SOER recommendations identified by INPO having to do with plant startup and operations.
- Change startup procedure to include tracking of all INPO and NRC commitments which become due before the date of startup.
- Upgrade the restart procedure to include all NRC commitments.
- Implement a tracking system to track closure of assessment open items.
- Track to completion the near term improvements identified by INPO, including seven SOER recommendations dealing with plant startup and operations.

(SI-2 MAINTENANCE OF OPERATOR LICENSES)

- Complete SRAB audit of training/operator interface.

(SI-6 FIRE BARRIERS)

- Check and verify that all Design Change Requests and reissued drawings have been walked down.
- Identify and assign resources for data base maintenance.
- Revise and issue applicable site administrative procedures.
- Document technical justification for existing penetration seal design and supporting Engineering evaluations.
- Issue engineering procedure to evaluate breaches of fire barriers.
- Develop acceptable level of confidence for results of penetration walkdowns including resolution of seal classification inconsistencies.
- Establish statistical adequacy of penetration destructive testing.
- Implement controls for the coating of cables.
- Implement controls for the use of drawings after discrepancies are identified in the field.
- Document justification of Gage Babcock issues.

- Revise Electrical Maintenance procedure S-EMP-GEN-001, "Maintenance of Penetrations", to be consistent with current penetration seal design details.
- Implement resolution of SER commitment discrepancies.
- Complete acceptance of calculations for structural steel during credible fire.
- Revise NEL-046 to address all audits.
- Revise Engineering procedures to address penetration fill requirements.

(SI-7 TORUS WALL THINNING)

- Document the logic for justifying that the torus wall thickness is adequate for continued operation based on thickness measurements. (Final Report expanding information contained in MPR summary letter.)

(SI-8 SCRAM DISCHARGE VOLUME)

- Revise NDP-3 to address assessor identified deficiencies regarding delegation of authority.
- Revise functional organization charts to establish clear responsibility for responding to NRC correspondence.

(SI-12 MG Battery Set Chargers)

- Develop documentation that describes the design bases for the MG set battery chargers and that demonstrates the capability of the chargers to meet the design bases. Incorporate this documentation in the Design Bases Documentation and Configuration Control Systems.
- Revise the original Appendix B downgraded component cross-disciplinary review report to indicate resolution of all open items. Document the disposition of the suggested recommendations mentioned in that report.
- Update the FSAR to reflect the new design basis described in the revised "125 VDC Station Battery Design Evaluation Report".

(SI-14 SSFI)

- ° Complete documentation for the electrical capability of the high pressure coolant injection system.
- ° Issue the specification (or revised procedure) for controlling the use of furmanite and similar materials.
- ° Develop a plan and schedule for relieving the program manager of the design basis reconstitution plan of other duties.
- ° Complete and accept calculations for the containment spray strainer pressure drop.
- ° Revise procedure and complete training for the core spray high pressure alarm.
- ° Complete training of operators on core spray pump suction graphs in the Emergency Operating Procedures.
- ° Revise the procedure and complete training on new water level indication.
- ° Complete the validation test for the high pressure coolant injection system pump curves.
- ° Complete the test of the core spray keep fill system.
- ° Implement procedure changes to resolve pump motor cycling concern.
- ° Complete training of involved personnel on pump curve control.
- ° Implement changes required from the review of vendor manuals.
- ° Implement control measures for configuration management for necessary parameters.
- ° Revise necessary calculations to incorporate flow diversion potential.
- ° Revise procedures and train operators for those situations where an operator may defeat automatic functions.
- ° Complete training of operations personnel on revisions to the Core Spray low suction pressure alarm.
- ° Modify maintenance procedures to require pump curve revalidation after major maintenance.

(SI-17 INSERVICE TESTING)

- Approve and issue associated Administrative Procedures.

(SI-18 125 VDC)

- The "125 VDC Station Battery Design Evaluation Report" requires revision in support of open items. The requirement to complete short circuit and fuse coordination studies should be reviewed.
- Develop a Nuclear Improvement Program action plan which indicates actions to be taken to resolve deficiencies which can be delayed beyond restart.

(Root Causes Addressed - NRC Generic Issue)

- Reduce the OEA backlog to an acceptable and defined level.

(Physical Plant Readiness - NRC Generic Issue)

- Clearly identify and complete all necessary maintenance items.
- Develop engineering evaluations which provide assurance that the as-built design does not conflict with the safety design bases, such that the schedule for the long term program is justified.

(Regulatory Requirements - NRC Generic Issue)

- Identify and obtain from the NRC all necessary Technical Specification amendments.

