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EXECUTIVE SUMMARY

Nine Mile Point Nuclear Station
NRC Combined Inspection Report No. 50-220;50-410/99-02

During the weeks of February 22 and March 8, 1999, a team of inspectors conducted an onsite inspection of the licensee's Corrective Action Program using the guidance of NRC Inspection Procedure 40500. The review evaluated the Corrective Action Program effectiveness over the period since the last NRC Corrective Action Program Inspection conducted in late August 1997. (Reference NRC Combined Inspection Report 50-220;410/97-80, dated October 24, 1997). The results of the inspection were summarized at an exit meeting conducted at the station at the conclusion of the inspection on March 12, 1999. The team inspected six major areas of the corrective action program as discussed and summarized below.

1. Problem Identification, Root Cause Analysis, and Corrective Actions (Deviation/Event Reports)

NMPC had an overall good problem identification process with a low threshold and high volume input. Categorization of the significance level of the findings, including evaluation of operability and reportability of identified findings, was generally good. The timeliness of DER dispositions has improved since the previous review of this area and root cause evaluations and corrective action development and implementation were generally good. Tracking and trending of findings, including evaluation of adverse trends has improved through implementation of numerous management initiatives including changes to the NMPC Business and Tactical Plans. No significant deficiencies were identified that had not already been self-identified and included in the DER program.

Station personnel at all levels of the organization were found to be generally knowledgeable of the DER program and were not hesitant to issue DERs for identified concerns. A few instances were identified where the extent of condition reviews were too narrowly focused. However, station audits and self-assessments continued to indicate areas for improved performance. NMPC was implementing corrective actions for this matter, including establishment of a new organization which is expected to provide improved oversight of correct action effectiveness.

Operations

NMPC's operations branch had a good problem identification program and was adequately addressing deficiencies identified. DERs in the area of operations training were properly processed via the DER system. None of the events documented in training DERs appeared to have resulted in the compromise of an exam. NMPC recognized the significance of the potential for compromise of examinations and took reasonable actions in response to these events.

The team concluded that, overall, the operability determination process and associated corrective actions were appropriate for the affected structures, systems, and components important to safety. However, in some instances, the licensee has failed to recognize the need for engineering involvement in an operability evaluation or failed to perform timely and adequate operability evaluations. Two Non-Cited Violations of 10 CFR 50, Appendix B, Criterion XVI were identified and were included in the licensee's corrective action program.

NMPC was using the post-transient review process in accordance with the station procedures and was adequately addressing the problems identified in the reviews.

Maintenance/ Plant Equipment and Hardware

Both units continue to experience a range of self-identified maintenance problems with work packages and schedule coordination indicating the need for additional focused corrective actions. In particular, a frequent problem identified in work control DERs was less than adequate evaluation of the plant impact of planned work. Although Unit 1 was able to document an overall low work package error rate plant transients and unnecessary radiation exposure resulted as a consequence of some work performance errors. Unit 2 had not developed a process to self-review work package error rate. Nevertheless, corrective actions for each individual DER were appropriate.

The problem identification and corrective actions for plant equipment and hardware issues was acceptable as indicated by the low backlog of non-outage equipment and hardware corrective maintenance items on both units.

Engineering/Technical Support

NMPC implemented generally good identification and resolution of engineering problems. The corrective and preventive actions implemented or planned were generally appropriate for the issues identified in the DERs. Engineering problems identified were generally resolved appropriately and the root cause evaluations (RCE) for engineering DERs were thorough and appropriate. A Non-cited violation of 10 CFR 50, Appendix B, Criterion V was identified and included in the licensee's corrective action program.

Safety systems selected for review exhibited good material condition including the portions of the station observed during the walkdown of each of the selected systems. No system hardware discrepancies or operating concerns were noted that were not previously identified by the licensee. The team found the DER use was generally acceptable. System Engineers were knowledgeable of their systems and were conversant with past and present operability issues and the DER program. System Engineers used the DER process as one means to identify and track problems associated with their system.

NMPC was effectively utilizing trend analysis to identify maintenance rule related system performance problems. Both units were running their maintenance rule programs in a manner which facilitated the identification and correction of hardware deficiencies, including the use of industry experience from sources other than the site OE group. Corrective action plans for (a)(1) systems addressed the deficiencies which put the systems in (a)(1). Unit 1 was somewhat behind Unit 2 in the development of walkdown plans and system health reports.

Plant Support

Overall, the plant support groups have shown improved performance in implementing the DER program. NMPC's radiation protection branches implemented reasonable closure actions to address root causes of identified problems. The Security group appropriately issued DERs for identified findings including adverse trend DERs. However, some inconsistency in categorizing Security DERs was apparent and specific management initiated corrective actions were not fully implemented for repetitive issues.

Overall, licensing processing of DERs was adequate. An example was identified where the length of time taken to resolve one Category 1 DER, along with additional confusion caused by the use of a non-endorsed TS interpretation, resulted in the licensee not meeting the spirit of its procedural requirement for prompt attention to a Category 1 DER. Licensing has improved in closing old DERs, but additional attention and emphasis on timely disposition appears warranted. A Non-Cited Violation of Technical Specification 6.9.3.f was identified and included in the licensee's corrective action program.

2. Operating Experience (OE) Review Program

NMPC had a defined OE program and was using the operating experience and industry information as an integral part of its corrective action program at both units. In general, OE items were properly reviewed for applicability and assignment to station branches for disposition. The issues were being handled in an effective and timely manner, and corrective actions were adequate. Notwithstanding, several examples were identified where older OE items and isolated examples of recent OE items were not properly reviewed for applicability and assigned for disposition. NMPC was implementing corrective actions for this matter, including consolidation of OE reviews under a new organization to improve review of OE items for applicability and assignment disposition.

3. Self-Assessment Activities

Quality Assurance

Quality Assurance (QA) audits were an effective element of the self-assessment process and were critical and thorough in evaluating station program areas including corrective actions for previously identified deficiencies.

Operations

Units 1 and 2 operations had good programs for tracking and performing self-assessments. The Operations department self-assessment process was comprehensive, and adequately contributed to problem identification and resolution. Operations management at both units were taking actions necessary to address the findings.

Maintenance

Units 1 and 2 improved its self-assessment in the area of maintenance. The maintenance self-assessment process was good and contributed to problem identification and resolution. NMPC identified that corrective actions for work practices issues has been ineffective. Maintenance management at both units were taking actions necessary to address findings.

Engineering

NMPC had a good engineering self-assessment program. The engineering self-assessments were thorough and broad in scope, resulting in many good findings and recommendations.

Plant Support

The radiation protection groups at NMP had a good self-assessment program. DERs were written for findings meeting the thresholds for DERs. The chemistry groups at NMP did not have a well defined departmental self-assessment program, but had recently taken the initiative to develop a self-assessment program with defined areas for self-assessment including a long term proposed schedule.

Security self-assessments provided a good review of program conformance to applicable Security Plan requirements. However, the self-assessments did not examine previous DERs concerning Security personnel, procedures, or practices to evaluate the effectiveness of corrective actions.

The EP organization implemented a defined self-assessment program with established performance indicators for use in evaluation of EP program elements.

Self-assessment within the fire protection group was limited resulting in many critical program findings being identified during quality assurance audits. Since quality assurance audits occur relatively infrequently, undetected fire protection concerns persisted.

Overall, licensing staff self-assessments were adequate.

4. Onsite and Offsite Safety Review Committees

Onsite and offsite safety review committees provided good oversight of station activities. The Station Operations Review Committee (SORC) meetings were conducted with appropriate regard to safety. The Independent Safety Evaluation Group (ISEG) performed critical assessment of the performance of operations, maintenance, engineering, and technical support activities, and exhibited an appropriate safety focus for corrective action matters for site-wide activities.

The Safety Review and Audit Board (SRAB) was an effective tool for identifying and assessing issues and was providing effective oversight of safety significant station activities.

NMPC effectively used offsite auditing groups to evaluate the effectiveness of its quality assurance program including the adequacy and effectiveness of its corrective action program.

5. Quality First program

The Quality First Program (Q1P) was an adequate vehicle by which employees can raise safety concerns. Concerns entered into the program, which met the definition of a DER, were appropriately processed as such.

6. Corrective Action Program Enhancement Initiatives

NMPC self-identified weaknesses in the effectiveness of its corrective action process and has strengthened the process and focused additional management attention on the process. NMPC initiated multiple actions to improve performance including revision of its 1998 and 1999 business and tactical plans to include specific initiatives directed at improving corrective action effectiveness. NMPC developed a Human Performance Improvement Plan and developed special indices to monitor and track corrective action effectiveness including such matters as personnel performance issues, and problem self-identification effectiveness. The effectiveness of the initiated corrective actions has yet to be demonstrated.

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Report Details

1.0 PROBLEM IDENTIFICATION, ROOT CAUSE EVALUATION, AND CORRECTIVE ACTION

1.1 Deviation/Event Reports (DERs)

a. Inspection Scope (40500)

The team reviewed the DER program to verify that the licensee was appropriately identifying significant issues and implementing timely corrective actions which achieve lasting results. The team reviewed the adequacy of root cause analyses for identified problems as well as licensee evaluations of equipment operability and reporting of identified problems. The team assessed the adequacy of assigned corrective actions, and reviewed tracking and implementation of corrective actions. The team reviewed DER's in the areas of operations, maintenance, engineering, and plant support including licensing. DERs in the area of technical support were selectively reviewed. The team also attended various scheduled station management meetings where DERs were discussed.

The review included documentation reviews and follow-up discussions with individuals involved with the identification and resolution of the DERs. The Team reviewed DER Trend Summary Reports and also evaluated implementation of applicable quality assurance criteria specified in 10 CFR 50, Appendix B.

b. Observations and Findings

General

NMPC's principal program for documenting, tracking and closure of identified problems is the DER process. Nuclear Division Directive NDD-ECA, Revision 8, "Evaluation and Corrective Action" establishes requirements for the identification, documentation, notification, evaluation, disposition, and correction of deviation/events or conditions adverse to quality and requires DERs to be issued for the matters specified therein.

Station Procedure NIP-ECA-01, "Deviation/Event Report," Revision 15, was used to administratively control the activities of problem identification and resolution at the Nine Mile Point Station. The procedure provided guidance for problem and event reporting, disposition, root cause evaluations, operability determinations, and reportability. Little guidance was provided to plant management in the area of DER categorization. No guidance was provided to dispositioners concerning extent-of condition reviews. However, no significant problems were identified in these areas. The threshold for DER initiation was low, with a typical annual issuance rate of about 3,500 DERs. The DER process had been recently revised to provide lower category DERs for trend only purposes. This action was licensee initiated to reduce unnecessary expenditure of personnel resources on low safety significance DERs. The Quality Assurance group was appropriately monitoring DER closure for "premature closeout". Station personnel interviewed by the team had a good working knowledge of the DER process and stated they would not hesitate to issue DERs for identified problems.

DER Trend Summary Reports for the past year were comprehensive and effective in identifying adverse trends. The reports focused on adverse trends identified in previous reports and provided an analysis of the effectiveness of corrective actions to address those trends. During the evaluation of a DER, a causal factor is defined. Using the DER database, the licensee provided a computer generated printout of causal factors for each station department to the team. The team noted that the predominate DER causal factors for the site were work practices, managerial methods, written communication and plant/system operation. The highest human performance errors were associated with poor work practices.

The team observed a Friday morning management meeting during which representatives from both units met to discuss human performance issues. The group consisted of supervisors, Branch managers, Plant Managers, and Vice Presidents. The team noted a good group discussion of the topics, discussion of similar problems the have occurred in the past, and a group review of previous corrective actions relative to effectiveness.

Plant Managers reviewed the DER Trend Summary Report for age and volume of DERs, personal error rates, self-identified rates and work practice trends. The Plant Managers chaired the SORC which has responsibility for significant DERs.

Overall, NMPC's quality assurance group has been very effective in the review of the various station department's implementation of the DER process as well as the effectiveness of corrective actions taken by those departments for DERs. In general, the licensee group identified that between 15-20% of DERs exhibited some fundamental administrative deficiency or ineffective corrective action. Specific concerns involved primarily unsatisfactory completion of DER dispositions or ineffective DER disposition actions necessitating issuance of a second DER to document the ineffective corrective actions.

Operations - Deviation/Event Reports

The team reviewed problem identification and corrective actions associated with general reactor operations for Units 1 and 2 and also reviewed problem identification and corrective actions in the area of reactor operator training.

Unit 1 had approximately 480 DERs assigned during the past 18 months and Unit 2 operations was assigned approximately 280 DERs for the same period. Fourteen of the DERs were Category 1, of which three remain open. The Category 1 DERs were broad in scope and depth. Closed Category 1 DERs had completed root cause evaluations in accordance with NMPC nuclear interface procedure NIP-ECA-02, "Root Cause Evaluations". The RCEs were completed by root cause evaluators listed on the current qualification list but several of the level one DERs did not include the required attachments from the RCE procedure. In addition, the process for completing the RCE did not require the qualified root cause evaluator (QRCE) to verify RCE data. In most cases at Unit 2, but few cases at Unit 1, the DER dispositioner was the same as the QRCE. In those instances that were not, the QRCE did not provide a signature certifying his concurrence or conclusions. NMPC noted these minor administrative comments and issued a DER to address the missing documentation.

Unit 1 DER 1-98-1133, identified an adverse trend in operator performance. Corrective Actions included shift mentoring, issuance of an operations manual, bi-weekly SRO/STA meetings and discussion of human performance issues at crew briefings. The team concluded that the corrective actions were comprehensive.

Unit 2 DER 2-98-3993, involved an adverse trend in configuration control. The root cause evaluation for this matter was broad in scope and extensive. The RCE noted that although previous corrective actions have shown some success, there still continues to be a high incidence of configuration control problems at both units. Recommended preventive actions in the RCE focused on improving communication between supervision and front line workers as to the extent of the configuration control problem. Also, the RCE recommended support and enforcement of several strategies including, ensuring there is no sense of urgency in performing the task, increased supervisory oversight at the job site, and minimizing worker distractions. The team concluded that corrective actions appeared reasonable.

NMPC issued five DERs in 1998 involving the security of licensed operator annual requalification examinations and one DER involving an NRC information notice concerning examination security. The DERs involved a variety of apparent security issues including locking of the Nuclear Training Center (DER 1-98-36509), availability of simulator exam scenarios (DER 1-98-3580), and potential compromise of written and simulator exams (DERs 1-98-3821, 1-98-3725, 1-98-3715).

NMPC performed a generally thorough review of the issues discussed in the operator training DERs. No apparent compromise of an actual exam was identified. Nevertheless, NMPC initiated corrective and preventative actions to reduce the possibility of a compromise or the perception of such. No breach of security occurred with the unlocked doors, training stand downs were held to discuss the events, selected exam questions were replaced to address possible reuse of annual cycle exam questions, duplicate questions in subsequent exams were replaced, changes were made to TAP-TQS-04, "Requalification Examination Standard" to clarify proctor duties, and instructors were counseled as appropriate. NMPC summarized the above training DERs in one overall DER to identify an adverse trend and this DER was still open at the time of this inspection. Additional preventive action for the adverse trend DER was a procedure change requiring a briefing for all exam team members and operators on exam security expectations at the start of each annual exam cycle.

NMPC appropriately dispositioned DER C-98-1304 involving an OE issue for an NRC Information Notice. NMPC modified applicable training procedures to incorporate suggested guidance contained within the notice.

Maintenance - Deviation/Event Reports

The team reviewed DERs assigned to or attributed to work control or outage management for both units. The team noted 18 of 23 significant DERs in this area listed in the most recent DER summary were attributed to Unit 2 with the majority of these DERs related to work practices or engineering. Review of 24 DERs describing problems

related to work packages or planning and scheduling indicated that the more significant DERs were associated with Unit 1 activities. The team reviewed examples of significant Unit 1 DERs as discussed below.

Unit 1 DER 1-98-3034 described the circumstances of a Unit 1 plant transient during maintenance on feedwater heater controls. The event involved a feedwater heater high level trip and a slight reactivity transient due to the loss of feedwater heating. The facility evaluation of this event was thorough and identified several causes including inadequate prejob briefing and lack of self checking. Work control causes were the omission of relevant information from the plant impact of the work order, and failure to capture in work history the problems from prior repairs. Corrective action for this DER included a site-wide stand down to reinforce expectations concerning pre-job briefs and work package feedback.

Unit 1 DER 1-98-3208 described a potential reactor trip which could have resulted from an inadequately prepared work package. The cause of this error involved work that had originally been planned for an outage and a work planner who did not realize plant impact would be different when the work was rescheduled to be performed on-line. Corrective action included counseling and training for the planner.

Unit 1 DER 1-98-0249 described an unnecessarily Unit 1 radiation exposure of 126 mR to operations personnel performing service water manipulations in the condenser bay. The original work order did not require entry into this high radiation area but was changed to allow such entry, the planner did not route the modified work order for ALARA review. The work was performed under a standing RWP with an R.P. technician present. Subsequent review determined that this work could have been delayed until an outage, thus avoiding this exposure. The cause of this oversight was determined to be lack of planner awareness of requirements in all relevant procedures. Corrective action included training for the planner and clarification that all work orders in the RCA will receive radiation protection review.

In addition to the above, Unit 2 DERs concerning improper parts or materials, poor planning and coordination resulting in unnecessary equipment unavailability, and inadequate plant impact evaluations were reviewed. These DERs were less significant than the above reviewed Unit 1 DERS and dispositions and ongoing corrective actions were determined to be reasonable.

Corrective actions for common audit identified findings were unit specific. Both units took corrective actions identified in DER C-97-2956 associated with work practices. These actions included emphasizing to appropriate personnel expectations concerning work package reviews and capturing of history, industry benchmarking, and leadership training. One action completed by Unit 1, but not by Unit 2, was the development of performance indicators to aid in evaluation of the causes of work package problems and assessment of corrective action effectiveness. Unit 2 did monitor backlog and workoff, but these data did not meet the intent of the DER corrective actions. The lack of performance indicators for Unit 2 was documented in a new DER 2-98-3961.

The performance indicators at Unit 1 included a quarterly assessment of a sample of generally 300 or more work packages from the work control database. This assessment indicated that work package problems continue to occur at approximately the same rate over the past two years. However, the error rate is considered low, with approximately 3% of the work packages identified as having some problem, or need for improvement. Alterations in work scope were necessary for 10-12% of the work packages.

Plant Equipment and Hardware - Deviation/Event Reports

The non-outage corrective maintenance backlog was 235 items for Unit 1 and 450 items for Unit 2. The Unit 2 backlog had been less than 300 items in December 1998. Unit 2 personnel had reviewed the work generation vs. workoff rates and determined that since the beginning of the year Operations and Technical Support had been generating problem reports at an increased rate while work rate had remained unchanged. Discounting this recent surge, the team considered these backlog numbers to be low indicating good efforts to correct plant equipment and hardware problems.

The team reviewed the ten oldest open Category 1 and 2 DERs over 90 days old for both units to evaluate the significance of the problems and timeliness of resolutions.

Unit 1 DER 1-98-1680, identified a delayed LCO entry during calibration of a drywell pressure instrument which was attributed to omission of the applicable LCOs from the plant impact section of the applicable maintenance procedure. Corrective action for this matter was to initiate revision to numerous maintenance procedures to address LCOs. The scheduled completion date of this DER is July 1999. Considering the scope of this corrective action, the timeliness of the licensee's actions were considered reasonable.

Unit 2 DER 2-97-1645 addressed an intermittent problem with the Rod Worth Minimizer on occasion falsely indicating multiple rods drifting rather than all rods in after a scram. The condition corrected itself after scram reset or after a few minutes. The problem originally appeared in December 1991. New firmware was installed to correct the problem in March 1995. There were then six scrams before the problem reappeared in June 1997. An engineering operability determination evaluated the problem as the RWM occasionally failing to terminate operating algorithms and run shutdown algorithms following a scram, and considered the equipment operable because the safety function of the RWM is rod sequence control, which is unaffected by this problem. Closure of this DER was extended to February 2001 to obtain warranty troubleshooting and repair from GE.

The team also reviewed three other Category 1 DERs.

Unit 1 DERs 1-98-2544 and 1-98-2544 addressed the causes of an inadequate operability determination for core spray and containment spray pumps identified during a prior NRC inspection. One core spray pump was subsequently determined to be inoperable due to inadequate cooling water flow, and was repaired. Corrective actions included case-study training on the need for rigorous evaluation.

Unit 1 DER 1-98-1029 addressed an apparent failure to reinstall fire protectant material following structural maintenance work performed in 1985. This condition was identified during a fire protection walkdown in April 1998. Corrective actions were thorough involving review and modification of procedures addressing fire protection and additional guidance for maintenance planners concerning structural fireproofing.

Engineering - Deviation/Event Reports

The team selected eight DERs in the area of engineering for detailed review and found seven of the DERs to have been properly processed with appropriate dispositions and identified corrective actions. The team reviewed the root cause evaluations (RCE) for four engineering DERs and found them to be thorough and to appropriately identify root causes. The corrective and preventive actions for three other DERs (2-98-3033, "Seismic Response Spectrum Recorder Mounted Horizontal Azimuth Deviation"; 1-98-3594, "Oil Spill"; 1-98-0517, "125 Vdc Load Flow Voltage Drop Calculations") were considered to be appropriate for the issues identified.

The following DER discussed a licensee identified violation.

DER 2-98-2938 (Unit 2) was issued on October 1, 1998, and pertains to "incorrect acceptance criteria for low voltage testing of safety-related 120 Vac starter coils" for motor control center (MCC) starters and local starters. This DER pointed out that the starter coil pickup voltages, as established in the design calculation (Stone and Webster Calculation EC-57, "Total Cable Length for Sizes 1,.2, and Starters/Contactors," Revision 4, dated December 20, 1988) were: 88 Vac for Gould/ITE size 1 starters, and 85.2 Vac for Gould/ITE sizes 2 and 3 starters. However, Nine Mile 2 Station Procedure N2-EMP-GEN-V582, "Molded Case Circuit Breaker and Thermal Overload Relay Testing," for Technical Specifications (TS) surveillance, specified an acceptance criterion of 93.5 Vac for Gould/ITE starter coil pickup voltage. This acceptance criterion was inappropriate and non-conservative in that a tested pickup voltage between 88 Vac and 93.5 Vac (for size 1 starters) or between 85.2 Vac and 93.5 Vac (for sizes 2 and 3 starters) would be acceptable to the test procedure, but would not meet the design requirements. The inappropriate acceptance criterion could cause a failure to detect (by testing) a potentially inoperable condition of safety-related equipment. The team reviewed the DER and its disposition, and found that the licensee had expanded the corrective actions for this issue to include the 125 Vdc coils. The team reviewed related documents to confirm licensee's completion of the following corrective actions: 1) Procedure N2-EMP-GEN-V582 had been revised to include the appropriate pickup/dropout voltage acceptance criteria for all MCC 120 Vac and 125 Vdc starter coils; 2) Vendor manuals had been updated using design document change (DDC) 2E11763 to include appropriate pickup/dropout voltage acceptance criteria for all MCC 120 Vac and 125 Vdc starter coils; and 3) Engineering had completed licensing design change request (LDCR) 2-99-UFS-013 to include these acceptance criteria for Division III in the Updated Final Safety Analysis Report (USFAR), which previously did not include these data. The team considered this issue important because this test procedure could affect about 160 starters of various sizes. The team considered the licensee's corrective actions for this issue adequate.

The failure to use an appropriate acceptance criteria for testing safety-related starter coils is a licensee identified violation of 10 CFR 50, Appendix B, Criterion V. This Severity Level IV violation is being treated as a Non-Cited Violation consistent with Appendix C of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as DER 2-98-2938 (Unit 2). **(NCV 50-410/99-02-01)**

Plant Support - Deviation/Event Reports

The team selectively reviewed the problem identification and resolution in plant support. The circumstances surrounding various plant support DERs were reviewed including DER disposition and adequacy of corrective actions. Plant support areas reviewed included radiation protection (RP), security, fire protection, and licensing.

NMPC's RP groups were found, in general, to be properly implementing the DER program. However, internal quality assurance reviews had previously identified weaknesses in the corrective action process including premature closure of DERs, lack of effective corrective actions for self-identified matters, and failure to write DERs for repetitive problems in TLD processing.

The RP branches took extensive corrective actions on these matters including performance of self-assessments of deficient areas by outside personnel and extensive revision of applicable program procedures. In general, recent DERs selected for review contained a generally detailed background and analysis description of the issue, a cause summary description, and a corrective/preventative action description. The DERs were processed in accordance with program requirements, DER extensions were obtained as appropriate, and closure actions appeared to effectively address root causes of identified problems. The RP branches were evaluating previous DERs, as part of the self-assessment process, to identify adverse trends and detect declining performance.

During the May 1998 Unit 2 refueling outage, security responded appropriately to six alarms associated with a specific vital area door and in all cases initiated separate DERs. Three of the DERs were assigned Category 3 and 3 were assigned Category 2 indicating inconsistency in DER categorization. On June 9, 1998, Security identified this matter as an adverse trend and issued a common Adverse Trend DER C-98-1739. Corrective/preventive actions taken to preclude recurrence included counseling of individuals, requiring affected work groups to a read and sign a document, or retraining of affected work crews. Corrective actions were focused on human performance rather than potential mechanical concerns. Additional problems were encountered with alarms of other vital doors on August 9 and 12, 1998. In response, the Plant Managers issued a memo on August 26, 1998, which indicated, in part, that effective immediately, personnel not properly using alarmed doors would have their unescorted access authorization suspended by Security pending remediation by the employee's supervisor. In addition, the Manager of Nuclear Security was to concur on all Security related DER dispositions to review proposed corrective actions and provide input as necessary.

Notwithstanding the corrective actions taken, and the numerous successful passages through vital area doors, the Unit 2 Plant Manager did not require Security's concurrence on the DER for a March 4, 1999, vital door alarm problem. This was because the new Unit 2 Plant Manager was not aware of his predecessor's memo nor was he aware of the suspension requirement. The DER was subsequently revised to reflect Security's concurrence on the DER disposition.

The licensing group took action to reduce its backlog of older DERs. Licensing had 20 DERs greater than a year old in April of 1998. By December of 1998, Licensing had 7 DERs greater than a year old. In the fourth quarter of 1998, four DERs were open for over 2 years and 12 extensions were granted. As of the fourth quarter 1998, Licensing had a total of 23 open DERs.

Licensing DER 1-95-2480, issued June 29, 1995, was written to address a failure to submit a special report to the NRC regarding Secondary Containment Leakage Testing as required by TS 6.9.3.f. The DER was assigned a Category 1, meaning it was a significant event that warranted prompt attention. Because of various delays caused by changes in due dates, extensions, and re-prioritization of workloads, this DER remains open. The licensee's procedure stipulates the safety significance of a DER should be documented when requesting an extension. In the case of DER 1-95-2480, the licensee indicated there is no impact on the safe operation of the plant and the DER addresses reporting test results. The team agreed that an administrative function does not impact safe operation and, thus, did not appear to warrant categorization as a Category 1 DER. However, Part 4 of the DER indicated the special reporting for secondary containment leakage testing is no longer required because 10 CFR 50.72 and 10 CFR 50.73 superseded the TS. In addition, the licensee believed that if the test failed then the licensee would be required to report it via an LER submittal. The licensee concluded there was no reason to submit a TS report for a successful test of the secondary containment system. The Safety Oversight Review Committee accepted this reasoning even though it is not a Commission endorsed interpretation.

The NRC's current position is NMP Unit 1 custom technical specifications required the special reports. NMP Unit 1 performed secondary containment testing on May 24, 1983, May 21, 1984, June 10, 1986, September 19, 1989, March 17, 1991, April 27, 1992, April 6, 1993, March 28, 1995, August 2, 1996 and May 17, 1998 without making the required reports. The DER indicated that the tests were not submitted to the NRC since 1979.

Tech Spec 6.9.3.f requires that the licensee submit results of secondary containment leakage testing to the NRC within 3 months of the tests. Contrary to this requirement, the licensee conducted 10 secondary containment leakage tests without submitting the results of these tests to the NRC within the required time frame. This Severity Level IV violation is being treated as a Non-Cited violation, consistent with Appendix C of the NRC Enforcement Policy. The licensee submitted the last secondary containment leakage testing report to the NRC in their letter dated March 12, 1999. The licensee has re-dispositioned DER 1-95-2480 to address this deficiency (Unit 1). **(NCV 50-220/99-02-02)**

TS 6.9.3 also requires special reporting for 13 tests. In the licensee's facsimile dated March 19, 1999, the licensee completed an extent of condition review and verified that the other 12 tests have been reported to the NRC when required.

c. Overall Conclusion-Deviation/Event Reports

The team concluded that NMPC had an overall good problem identification process with a low threshold and high volume input. Categorization of the significance level of the findings including evaluation of operability and reportability of identified findings was generally good. The timeliness of DER dispositions has improved. Root cause evaluations and corrective action development and implementation were generally good. Tracking and trending of findings in the corrective action program, including evaluation of adverse trends has improved through implementation of numerous management initiatives including changes to the NMPC Business and Tactical Plans. The team did not identify any significant deficiencies that had not been already identified and included in the DER program. Station personnel at all levels of the organization were found to be generally knowledgeable of the DER program and were not hesitant to issue DERs for identified concerns. A few instances were identified where the extent of condition reviews were too narrowly focused. Also, audits and self-assessments continued to indicate areas for improved performance.

Operations

NMPC's operations branch had a good problem identification program and was adequately addressing deficiencies identified. DERs in the area of operations training were properly processed via the DER system. None of the events documented in training DERs appeared to have resulted in the compromise of an exam. NMPC recognized the significance of the potential for compromise of examinations and took reasonable actions in response to these events.

Maintenance/Plant Equipment and Hardware

In maintenance, both units continue to experience a range of self-identified problems with work packages and schedule coordination indicating the need for additional focused corrective actions. In particular, a frequent problem identified in work control DERs was less than adequate evaluation of the plant impact of planned work. Unit 1 was able to document an overall low work package error rate with performance indicators. However, the problems that did occur at Unit 1 involved plant transients and unnecessary radiation exposure which the team considered to be of more consequence than the remainder of the DERs at either unit. Unit 2 had not developed a process to self-review work package error rate. Nevertheless, corrective actions for each individual DER were appropriate.

The team concluded that problem identification and corrective actions for plant equipment and hardware issues was acceptable as indicated by the low backlog of non-outage equipment and hardware corrective maintenance items on both units.

Engineering

In the area of engineering, the team concluded that the licensee implemented generally good identification and resolution of engineering problems. The corrective and preventive actions implemented or planned were generally appropriate for the issues identified in the DERs. Engineering problems identified were generally resolved appropriately and the root cause evaluations (RCE) for engineering DERs were thorough and appropriate. A Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V was identified and determined to be in the licensee's corrective action program.

Plant Support

Overall, the plant support groups have shown improved performance in implementing the DER program. NMPC's radiation protection branches obtained DER extensions as appropriate and implemented reasonable closure actions to address root causes of identified problems. The Security group appropriately issued DERs for identified findings including adverse trend DERs. However, some inconsistency in categorizing Security DERs was apparent and specific management initiated corrective actions were not fully implemented for repetitive issues.

The team concluded that overall licensing processing of DERs was adequate. However, it is evident from the length of time it has taken to resolve one Category 1 DER, along with the additional confusion caused by the use of a TS interpretation not endorsed by the NRC, that the licensee did not meet the spirit of its procedural requirement for prompt attention to a Category 1 DER. Licensing has improved in closing old DERs, but additional attention and emphasis on timely disposition appears warranted. A Non-Cited Violation of Technical Specification 6.9.3.f was identified.

1.2 Risk Significant Systems Review and Implementation of the Maintenance Rule

a. Inspection Scope (40500)

The team selected five risk significant safety systems for review. The systems, identified as PRA significant by an NRC Region I Reactor Analyst, were diesels at Units 1 and 2, Unit 1's high voltage systems, Unit 2's reactor building ventilation system (ECCS pump room cooling), and Unit 1's feedwater system. NMPC system engineers were interviewed and walkdowns were performed on three of these five systems to review proper configuration control and system material condition. The reviews included selective review of applicable DERs and completed and outstanding work items. If the system was rated as Maintenance Rule category (a)(1), the Maintenance Rule Corrective Action Plan was also reviewed.

b. Observations and Findings

For identification of maintenance rule functional failures, there were several checks at both units. First the initiator of a PID is expected to write a DER for failures other than normal wear and tear, and disposition of the DER should identify functional failures.

Other checks were that each unit's EPIX coordinator reviews all PIDs and evaluate them as potential functional failures, involving the maintenance rule coordinators or other technical support personnel if necessary. The maintenance rule coordinators and technical support supervisors also reviewed DERs and distributed them to the appropriate system engineer whether or not that system engineer was involved in the disposition of a particular DER.

The team noted that there was no requirement for system engineers to review all PIDs or work orders; this was initially a concern since these individuals would be the most knowledgeable of the performance criteria, and most likely to identify functional failures. However, in practice the system engineers do review corrective maintenance work on their systems and no actual instances of missed functional failures were identified.

The four system engineers interviewed monitored their systems by trending of data of their choice and by documentation of walkdowns. Unit 2 system engineers had developed walkdown plans and schedules; Unit 1 system engineer walkdown plans and system health reports were still under development. The system engineers were involved in planning and prioritization of work on their systems and had access to industry information both through company routing of operating experience DERs and online access to industry and owner groups.

Team members accompanied system engineers on walkdowns of the Unit 2 Diesels, Unit 2 Reactor Building Ventilation, Unit 1 Condensate and Feedwater, and portions of Unit 1 high voltage electrical systems. The areas walked down generally appeared in good material condition. Minor housekeeping deficiencies were noted in the Unit 1 condensate pump bay, and some damaged piping insulation was noted in the Unit 2 reactor building.

The team also reviewed the most recent combined unit self-assessment of technical support. This assessment reviewed the same areas as this inspection and appropriately identified differences between the units and some weaknesses, particularly that system engineers could not locate a copy of GAI-REL-01, the system engineering walkdown program. However, Unit 1 system engineers were able to produce copies of the walkdown program procedure when questioned by the team concerning guidance on walkdown development.

Of the systems reviewed, two were in maintenance rule category (a)(1). These systems were the Unit 1 feedwater/HPCI booster pumps and Unit 1 high voltage protective relaying. The feedwater booster pumps were in (a)(1) status due to exceeding functional failure criteria in that two failures had occurred due to loss of bearing oil flow. Corrective action was modification to preventive maintenance and a change to an operating procedure to ensure oil level at the high mark before starting one of these pumps. The performance goal for these pumps was three consecutive successful starts of each pump resulting from quarterly testing or equipment rotation, which the inspector considered appropriate.

One additional failure had recently occurred, failure of the 12 feedwater booster pump discharge check valve to close when the pump was secured - this failure rendered the 11 and 13 feedwater/HPCI pumps inoperable and placed the plant in a 1 hour LCO until operators were able to shut the valve. During this inspection the system engineer was coordinating the development of an action plan for troubleshooting and repair involving planning and scheduling, maintenance, and operations. This failure also involved real time use of industry operating experience - this system engineer provided information on the failure to industry via the Internet and received a reply from another utility describing problems experienced with hinge pins in these valves.

Unit 1 345KV and 115KV protective relays were in (a)(1) due to two plant scrams resulting from relay failures. Corrective action was to replace or repair all relays and establish a PM program for replacement every ten years based on industry operating experience. "High risk" relays have been replaced, remaining work was scheduled for the next refueling outage. No failures have occurred since replacement of the "high risk" relays.

c. Conclusions

Safety systems selected for review exhibited good material condition including the portions of the station observed during the walkdown of each of the selected systems. No system hardware discrepancies or operating concerns were noted that were not previously identified by the licensee. The team found the DER use was generally acceptable. System Engineers were knowledgeable of their systems and were conversant with past and present operability issues and the DER program. System Engineers used the DER process, computer based logs, and spreadsheets to identify and to track problems associated with their system.

NMPC was effectively utilizing trend analysis to identify maintenance related system performance problems. Both units were running their maintenance rule programs in a manner which facilitated the identification and correction of hardware deficiencies, including the use of industry experience from sources other than the site OE group. Corrective action plans for (a)(1) systems addressed the deficiencies which put the systems in (a)(1). Unit 1 was somewhat behind Unit 2 in the development of basic system assessment tools (e.g., walkdown plans and system health reports) indicating some inconsistencies between unit programs.

1.3 Post-Transient Reviews

a. Inspection Scope (40500)

The team reviewed post-transient reviews to determine the effectiveness and completion of corrective actions. The team reviewed four manual scrams post-transient reviews at Unit 2 and four at Unit 1.

b. Observations and Findings

With the exception of a full-in light issue for Unit 1 control rod 10-39, the team did not identify any recurring themes on Unit 1 post-transient reviews. The team reviewed the DER on the rod position indication issue and verified that corrective actions were in place to address the recurring problem.

The review of the Unit 2 post-transient reviews indicated a recurring problem with the Rod Worth Minimizer (RWM) not indicating properly and recurring level control problems. The team discussed the issues with the operations manager, determined that the operations manager was aware of the problems, and determined that associated problems had been placed in the DER program. The operations manager also indicated these matters were under continuing review and that action was taken to address both issues. The RWM indication problems were being addressed as DER-2-97-1645 which is reviewed in section 1.1.b., "Plant Equipment and Hardware - Deviation/Event Reports" of this report. DER 2-98-3686 related to startup level control problems. The disposition of this DER includes a discussion of prior level control problems which were attributed to leakby of certain feed and condensate system valves which have subsequently been rebuilt. The problem in this particular DER was determined to result from the lack of a reverse flow check valve on a newly installed passive zinc injection skid which replaced a previous active design. When feeding with condensate booster pumps without feedpumps, reverse flow through this skid was an unaccounted for injection path. Corrective action was a procedure change to hold this skid out of service until a feedpump has been started. The RWM and post scram level control problems did not reoccur following the last Unit 2 scram.

The team identified two administrative issues with regards to NMPC's post-transient review procedures. Unit 1 reports were not sequentially numbered as were the reports from Unit 2 and the post-transient review procedure did not contain guidance on identification of human performance issues as part of the post-transient review process. NMPC stated that the DER process and operations management reviews ensure human performance issues are resolved prior to start-up.

c. Conclusion

The team concluded that NMPC was using the post-transient review process in accordance with the station procedures and was adequately addressing the problems identified in the reviews.

1.4 Operability Determinations

a. Inspection Scope(40500)

The team reviewed the operability determination process and its implementation to assess the effectiveness of this process with regards to the identification, evaluation, and tracking of conditions adversely impacting the operability of safety systems.

b. Observations and Findings

The team review identified one instance where the operability review of a DER did not provide an adequate technical basis for the operability conclusion, and one instance of an untimely operability evaluation of safety-related electrical equipment.

Regarding the lack of adequate technical basis for an operability determination, DER 2-97-1922, initiated June 27, 1997, identified that the facility had not calibrated fire protection system gauges and pressure switches at an appropriate frequency in accordance with USAR section 9A.3.1.1.A. A total of 302 devices were potentially affected. The DER dispositioner indicated that the facility was committed to NFPA 25 1995 edition, "Standard for the Inspection, Testing, and Maintenance of Water Based Fire Protection Systems," which required calibration or replacement of these instruments every 5 years. The operability determination section of the DER was marked "N/A," but the disposition discussed an operability review. This review did not contain sufficient information to identify the affected instruments, their functions, or provide a basis for operability. The scheduled completion of corrective action for this DER was July 1999.

In response to questions from the NRC team relative to the age of this DER and the adequacy of the operability determination, NMPC redispositioned this DER and performed a new engineering safety analysis. The original dispositioner was no longer employed at the site, and although the facility contacted him by phone, no additional documentation regarding the operability was available. NMPC determined that the original dispositioner was incorrect in that the facility was not committed to NFPA 25 1995. However, 14 of 305 relevant instruments were not within the existing calibration requirements of the facility PM/ST program. The engineering analysis evaluated all instruments which had not been calibrated within 5 years, of which there were 19. This evaluation listed the function of each instrument, and provided an adequate basis for operability. At the end of the inspection 15 of these 19 components had been calibrated, one needed repair, and three required vendor support.

10CFR50, Appendix B, Criterion XVI requires that significant conditions adverse to quality such as deviations and nonconformances be identified and corrected. Contrary to this requirement, personnel reviewing this DER did perceive an operability question but did not adequately justify their conclusion relative tto determination of operability. This Severity Level IV violation is being treated as a Non-Cited Violation consistent with Appendix C of the NRC Enforcement Policy. This violation is in NMPC's corrective action program as open Unit 2 DER 2-97-1922 to track completion of calibrations/repairs and the new Unit 2 DER 2-99-0665 for inadequate operability determination. **(NCV 50-410/99-02-03)**

Regarding the licensee identified lack of timely review of DER issues for operability concerns, Unit 2 DER 2-98-2938, initiated October 1, 1998, identified weaknesses in evaluation of surveillance test acceptance criteria for starter coils from an equipment operability perspective. The original DER was assigned to maintenance for disposition and resolution who dispositioned this DER on November 30, 1998, without completing a thorough evaluation of system or component operability. Specifically, maintenance

personnel compiled test data for about 160 MCC starter coils on November 30, 1998, and identified seven deviations including deviations involving non-conservative test data. However, maintenance failed to bring the use of non-conservative acceptance testing to management's attention for prompt operability determination and due to heavy work load, the engineering organization did not review the compiled test data until January 20, 1999 (i.e., 50 days after the issue was identified).

When engineering did review this matter, the review indicated that nine starter coils (associated with eight valves and one pump, six were ac coils and three were dc coils) did not meet the design requirements. Two of the eight valves were primary containment isolation valves (using 125 Vdc starters) for the reactor core isolation cooling (RCIC) system. As a result, on January 20, 1999, NMPC declared the RCIC system inoperable and entered a Technical Specification (TS) limiting condition for operation (LCO). The matter was reported to the NRC two days later. NMPC subsequently determined that this event (RCIC system inoperable) should have been reported within four hours (rather than two days) as required by 10 CFR 50.72 (b)(2)(iii)(D). Subsequently, the licensee issued DER 2-99-0230 on January 22, 1999, to place this issue in the corrective action program and evaluate it. This DER was still open at the time of the inspection.

On January 21, 1999, NMPC retested the three dc starter coils using step-change-voltage methodology (which is more similar to actual operating condition) instead of the ramping-voltage methodology (which is more conservative). The new retest results indicated that the pickup voltages were all within the design voltage of 100 Vdc and, therefore, the RCIC containment isolation valves were operable. NMPC exited the LCO. NMPC completed an operability determination for the other six ac starter coils on January 23, using actual cable lengths instead of the maximum allowable cable lengths, and the justifiable lower ambient temperature (for the normally de-energized starter coil of 2SWP*MOV1E) instead of the assumed 90°C conductor temperature. The operability determination showed that all starter coils had sufficient voltage for their operation, and that the affected valves and pump were operable.

The licensee took effective corrective actions once the problem with operability was identified, and the licensee subsequently confirmed operability. The team's review of actions on DER 2-98-2938, indicated that DER activities were not effectively prioritized to ensure that operability determinations were performed in a timely manner.

NMPC management recognized this lack of timeliness, and initiated several corrective steps to prevent recurrence, including: 1) on January 22, 1999, the licensee discussed this issue at its Nuclear Management Meeting; 2) on January 29, 1999, this issue was discussed at Branch Managers Meeting, the branch managers suggested a case study be developed and presented; and 3) on February 5, 1999, a case study was presented at the Branch Managers Meeting. Feedback from management was that Design Engineering must be involved in resolving identified design issues.

On February 6, 1999, NMPC also recognized that the resolutions completed did not include starters for local motors, which was also part of the original DER. NMPC promptly issued a new DER (2-99-0384) to address the local starter issue and compiled the test results of 66 local starters. These test results indicated that the pickup voltages for three unit cooler starters exceeded the acceptance criteria of 85.2 Vac. NMPC immediately declared these unit coolers inoperable, notified the NRC on February 6, 1999, and completed an operability evaluation on February 11, 1999, using actual control cable lengths in stead of the maximum allowable cable length. NMPC determined the three unit coolers operable. The licensee also found that the two hydrogen recombiners at Unit 2 used Gould/ITE size 5 starters (skid-mounted). The licensee did not have pick-up and drop-off voltage data for this type of starters, nor could they obtain these data from the manufacturer (which had changed hand several times). The licensee tested three spare size 5 starters and used the worst-case pick-up voltage (85 Vac) for the input data for their operability determination until actual test (under the degraded-voltage condition) of the installed starters could be conducted during the next opportunity. The team considered this justification acceptable and confirmed with licensee maintenance that the tests of the installed starters had been scheduled. The team also considered the corrective actions and plans appropriate for this matter.

The operability determinations associated with Unit 2 DERs 2-98-2938 and 2-99-0384, including the calculations used to support the determination were thorough and technically sound. The engineers who were involved in the operability determination were interviewed and found to be knowledgeable.

10CFR50, Appendix B, Criterion XVI, requires that significant conditions adverse to quality be promptly identified and corrected. Contrary to this requirement, an appropriate operability evaluation was not performed for DER 2-98-2938 for a period of 51 days. This licensee identified Severity Level IV violation is being treated as a Non-Cited Violation consistent with Appendix C of the NRC Enforcement Policy. This violation is in NMPC's corrective action program as the open Unit 2 DER 2-98-2938. **(NCV 50-410/99-02-04)**

c. Conclusions - Operability Determinations

The team concluded that, overall, the operability determination process and associated corrective actions were appropriate for the affected structures, systems, and components important to safety. However, in some instances, the licensee has failed to recognize the need for engineering involvement in an operability evaluation or failed to perform timely and adequate operability evaluations. Two Non-Cited Violations were identified and were included in the licensee's corrective action program.

2.0 Operational Experience Review Program

a. Inspection Scope (40500)

The team reviewed the implementation of the programs utilized by NMPC for identifying and closing out action items associated with the operational experience program. The team select safety-significant items for review and evaluated NMPC's effectiveness to assess, to inform appropriate personnel of the results, and to initiate corrective actions for information obtained both within and outside the station organization. The team considered operational experience information reports; significant operating event reports and notifications; 10 CFR Part 21 notifications; NRC bulletins, generic letters, and information notices; and reports issued by other facilities under the licensee's control or from similar facilities (with respect to design and vintage).

b. Observations and Findings

NMPC established an operating experience review program that was administered through the station's DER procedure. The program provided for review of industry operating experience by specially designated groups including the quality assurance group, the licensing group, and the engineering group. These groups evaluated incoming operating experience matters assigned to them by the procedure, including NRC generic correspondence, for applicability to the various station branches. DERs were written to affected groups that served to assign action to review the operating experience.

Although NMPC's program was defined and implemented through approved procedures, the program was determined to not be fully effective. In late 1998, the NRC (Reference NRC Combined inspection Report No. 50-220; 410/98-19) identified instances where older OE items, including NRC generic correspondence such as information notices, did not appear to have be appropriately reviewed for applicability and assigned to appropriate station branches for review. NMPC issued several DERs for these matters. NMPC's on-going reviews identified additional examples where OE items may not have been appropriately reviewed. During a review in August 1998, to prepare NMP Unit 2 improved Technical Specifications, NMPC identified an additional OE program weakness. This weakness was described in LER 98-24 provided to the NRC in September 1998. NMPC was continuing to review these previous OE items for applicability.

More recent OE items were found to have, in general, been appropriately reviewed for applicability and assigned to appropriate station branches for review. However, the stations ISEG group had identified recent isolated instances where OE items did not appear to have been properly reviewed for applicability by the station and assigned to an appropriate branch for disposition. The station issued a DER for these matters.

As part of its broad based corrective actions for self-identified weaknesses in its corrective action program, discussed in Section 6 of this report, NMPC elected to establish a separate assessment and corrective action group to review corrective action effectiveness, and in addition review all OE items for applicability to station branches and assign the OE items for branch reviews. This NMPC effort consolidates review of all OE items within one organization, and according to the licensee, is expected to streamline the OE review process and provide for enhanced consistency of applicability determinations and reviews. NMPC was performing a safety evaluation in support of the new organization and this organization was expected to be functional in March 1999. A director for the organization was selected by the licensee and draft organizational responsibilities were established.

The team reviewed numerous operations deviation event reports issued by NMPC to track the evaluation of industry experience and the subsequent assignment of corrective actions. The team verified corrective actions associated with various DERs were in place and that existing open items were being properly tracked. The team interviewed several operators and determined that personnel were reviewing industry information and that crew briefings did include industry information. The operations manual directed the shift technical advisor and assistant shift supervisor to brief the crews on operating experience gathered as part of their duties.

The team identified one example of a corrective action that may not be as effective as NMPC was taking credit for in the operating experience review. The issue involved the performance of maintenance on systems associated with reactivity management. In closing the DER, NMPC was taking credit for a requirement in procedure, GAP-OPS-05, "Reactivity Management," for reactor engineering to evaluate maintenance activities which have the potential to impact reactivity management. The team could not find any examples of work orders which had been screened by reactor engineering. NMPC determined that evaluations were being performed informally but work requests were not in all cases being screened. NMPC entered the deficiency into there correction program.

The radiation protection groups were found to be well aware of recent NRC generic correspondence and industry operating experience through the DER OE assignment process and the RP staff's separate use of various Internet access sites dealing with radiation protection matters including NRC generic correspondence and industry WEB sites.

The team selectively reviewed action by the EP group on OE item assigned to it via the stations operating experience review program. In particular, the team reviewed the EP organization's action on DER No. C-98-1983, initiated 6/25/98. The DER involved review and evaluation of an NRC Information Notice No. 98-20, dated 6/3/98 dealing with weaknesses in emergency use of respiratory protective equipment by operating organizations.

The EP organization performed generally thorough evaluation of the information contained within the notice. Separate DERs were issued by the EP organization to address specific operating experience review matters contained within the information notice. However, potentially important aspects of the DER (e.g., staging and accessibility of respiratory protection equipment for use in entry into potentially uninhabitable areas) remained open as of eight months after issuance of the DER. The EP manager indicated requests for information had been sent out to other organizations to allow the EP organization to close the DER. However, the other organizations had not yet responded to the EP organizations call for information on this matter.

c. Conclusions - Operating Experience

NMPC had a defined OE program and was using the operating experience and industry information as an integral part of its corrective action program at both units. In general, OE items were properly reviewed for applicability and assignment to station branches for disposition. The issues were being handled in an effective and timely manner, and corrective actions were adequate. Notwithstanding, several examples were identified where older OE items and isolated examples of recent OE items were not properly reviewed for applicability and assigned for disposition. NMPC was implementing corrective actions for this matter, including consolidation of OE reviews under a new organization to improve review of OE items for applicability and assignment disposition.

3.0 Self-Assessment Activities

a. Inspection Scope (40500)

The team evaluated NMPC's self-assessment program to verify appropriate implementation in accordance with station Procedure NIP-ECA-05, "Self-Assessment Program," and to assess the effectiveness of internal departmental reviews in identifying and correcting problems and enhancing established programs and processes. The team reviewed select self-assessment reports and interviewed responsible department staff to follow-up on self-assessment findings, causal evaluations, and corrective action prioritization and timeliness.

b. Observations and Findings

General

The team verified that the quality assurance (QA) organization has access to upper line management and periodically meets with management to summarize the overall effectiveness of the corrective action program at the station. The QA organization produced a DER quarterly trend summary report which provided a detailed status of the DER program and self-assessment results at the station. The trend report provided sufficient information to identify recurring problems.

Assessment and audit reports were candid and appeared to reflect the findings and observations of the auditors and indicated that management was receiving an unbiased perspective of the plant's quality achievement and deficiencies. The frequency and content of self-assessments was generally consistent with station directives.

The team concluded that NMPC was generally aggressive in following up on self-assessment findings and determined that corrective actions were adequate, timely, and properly prioritized.

The team observed that the overall self-assessment program ensured that the major functional areas (e.g., corrective actions, Appendix B, security, fire protection, emergency planning, operations, engineering, radiation control, maintenance) were reviewed as required by the licensee's quality assurance audit program.

Operations Self-Assessment

The new operations management at Nine Mile Units 1 and 2 took a number of actions to improve the quality of the self-assessment of station operations. These actions included designating a self assessment coordinator and scheduling numerous self-assessments for the next calendar year. The self-assessments included specific criterion against which performance was judged; utilized multiple information inputs; and utilized the DER process to track corrective actions. Both units were considered to have a strong process for conducting self-assessments.

Unit 1, as identified in a quality assurance audit, did not perform a self-assessment during the first half of 1998 and the most recent Unit 1 self-assessment identified several areas for improvement. These included component mis-positioning events due to weakness in operator adherence to procedures, self-checking, and operator work practices; lack of effective communication of in-house and outside operating experience; and limited oversight by managers and supervisors contributing to worker performance that did not meet management expectations. NMPC implemented corrective actions for these matters including establishment and implementation of leadership training and bench marking at other facilities. Unit 1 was also developing an operations assessment guide.

Unit 2 conducted several self-assessments throughout the past year with the most recent addressing numerous configuration control issues. NMPC determined that the leading cause of the problems was the failure to self check, documented the issue on a DER and was in the process of conducting a root cause evaluation on the issue. Other recommendations from the self-assessment included cultivation of an atmosphere of open communication, reinforcement of desired job-site behaviors, and monitoring and coaching workers through first hand observation.

The most recent audit of operations was performed August 21, 1998. The auditors determined that attention to detail, procedure adequacy, procedural compliance and programmatic control issues need strengthening at both units. In addition, the auditors noted that additional efforts to implement common standards and share lessons learned

between both units is required. Operators and operations management were aware of the audit findings and corrective actions were in place to address the issues identified by the auditors. Most notable were control room watch standing at Unit 1 and DER thresholds at Unit 2.

Maintenance Self-Assessment

The team reviewed the individual maintenance unit self-assessments for January 1 to June 30, 1998, and a combined site self-assessment focused on work practices performed in November 1998. All three of these assessments contained DER cause code evaluations for several prior quarters for trending. A comparison between the units was difficult because the data was summarized and tabulated differently, and Unit 1 looked at all causes assigned to maintenance while Unit 2 looked at human performance. Looking strictly at work practices, it appeared that Unit 2 had twice the Unit 1 rate of cause codes in this area.

The Unit 2 assessment was more extensive in that it further evaluated the results of corrective actions from prior unit self-assessments and was critical in concluding that corrective actions for work practices, work control, and the use of maintenance observation cards had not been effective. A DER 2-98-2335 was generated for lack of followup for corrective actions identified in previous assessments. One of the corrective actions was to perform three focused self-assessments, one of which was the November work practices assessment.

The work practices assessment did not list cause codes by unit, but did provide a comparison of personnel error rate per 10,000 man hours. These error rates appeared low at an average of 2.3 for the prior two quarters for Unit 1 and 3.5 for Unit 2. This assessment also provided an extensive list of recommendations for improvement.

NMPC took a number of corrective actions on the maintenance self-assessment findings. The self assessment results were discussed with supervisors and craft personnel during morning meetings; craft personnel were used in the performance of assessments; maintenance observation/assessment cards were used to correct problems as they occur on an individual crew level; and craft as well as supervisory personnel, took trips to other sites to review practices. In addition, dynamic maintenance training, which attempts to provide the equivalent of simulator training for maintenance personnel by having a maintenance crew perform a task using an actual work package, was provided. The training simulated problems experienced in the plant.

Additional corrective actions were developed for individual DERS and were more detailed than the generic recommendations in the self-assessments. For example, DER 2-98-3376 addressed a screw missing from a circuit board hold down strap in a diesel generator ventilation flow switch and identified the lack of licensing basis knowledge on the part of the I&C crew as a human performance problem. The facility addressed the hardware concern by replacing the screw and by performing an exhaustive engineering evaluation to demonstrate continued seismic and environmental operability of the affected component. Corrective actions include briefings for maintenance personnel on

both units and the planned development of a design and license basis fundamentals class for all maintenance disciplines. This particular DER was also a specific example raised by the Unit 2 Plant Manager discussing operability/craftsmanship in an interview to discuss his role in the DER process.

Another example involved a Unit 1 DER (1-98-1096) associated with an inadvertent shutdown cooling isolation during maintenance. Corrective action included a work stand down, counseling and briefing of appropriate personnel, and training.

Engineering Self-Assessment

The team reviewed two recently completed engineering self-assessment reports dated September 21, 1998, and February 22, 1999.

The first assessment covered DER dispositions in support of license event reports, nuclear fuel management program, and engineering support personnel qualification program. The second assessment covered vendor information processing, corrective actions for reducing engineering errors, and follow-up of a previous self-assessment findings. Each of these reports contained a self-assessment plan, which outlined in detail the scope and objectives of the assessment, and specific areas to be covered. Each of these assessments was conducted by a team of multi-discipline auditors. These assessments resulted in many good findings and recommendations. Some of the findings necessitated the issuance of DERs to document the resolutions (four DERs from each assessment). Most of the findings resulted in recommendations. Some good examples of the findings included: insufficient qualified root cause evaluators (QRCE) in engineering could have a negative impact on the timeliness and quality of root cause analyses, recommended to train more QRCEs; both the backlog and turn around time for vendor technical reviews exceeded target and trended negatively, recommended to establish a backlog reduction plan; environmental qualification required maintenance (EQRM) should be based on updated vendor manual requirements. The Engineering Assurance group also developed a database entitled "Engineering Department Self-Assessment Action Item List" to track the status of each assessment finding and recommendation.

The team interviewed the two team leaders who conducted the above self-assessments and found them knowledgeable of the assessment activities.

Plant Support - Self-Assessment

The team selectively reviewed plant support self-assessment activities. Programs reviewed included radiation safety, chemistry, security, emergency preparedness, and fire protection. Licensing self-assessments were also included in the review of plant support.

Self-assessments in the area of plant support varied from group to group in the quality of the self-assessment and the number performed during calendar year 1998. Most groups adhered to the practices specified in station procedure NIP-ECA-05 in scheduling bi-annual self-assessments, and included assessments of the effectiveness of that particular branch's corrective actions.

The radiation safety groups at Units 1 and 2 were found to have a generally good self-assessment program. The RP branches implemented the station's semi-annual self-assessment program and also established and implemented special self-assessments. The RP branch's self-assessment program was defined by a procedure (S-RAP-RPP-0108, Radiation Protection Self-Assessment) and provided for review of major aspects of the site radiation protection program over a three year period. The program was specifically designed to meet the requirements of 10 CFR 20.1101(c) relative to program reviews. The self-assessments were conducted quarterly, used shared resources between Units 1 and 2, and also used outside technical experiments for selected topic reviews. The program and quality assurance audits were effective in self-identifying areas for improvement and problem areas. DERs were written for findings meeting DER thresholds. Each unit's branch maintained computerized listings of areas for improvement identified by the self-assessments. Areas for improvement were communicated to the other units RP management.

The chemistry groups at NMP Units 1 and 2, until recently did not have a well structured self-assessment program. The groups did not have a defined departmental procedure or a clearly established schedule of areas of the chemistry program to be reviewed. Rather, the self-assessments used general guidance outlined in the station's self-assessment procedure that was performed semi-annually. The self-assessments performed by the chemistry groups generally examined department performance broadly. However, recently, the Unit 1 chemistry manager took the initiative to define selected topics for periodic self-assessment including a proposed long term schedule for conduct of the self-assessments. These topics were under review by the Unit 2 chemistry manager for use at Unit 2. Quality assurance audits of the chemistry program were effective in self-identifying areas for improvement including problem areas for which DERs were written.

Both the radiation safety and chemistry groups reviewed the stations quarterly DER trend reports as part of their self-assessment activities for insights into each branch's performance. Based on this review, the department's developed a response to the station managers on their evaluation of the DER report, and areas for enhancement. The quality assurance group summarized branch self-assessment findings and provided them to senior management in scheduled meeting.

The Security group performed self-assessments of the program's conformance with applicable requirements. For example, the June 1998 Security self-assessment focused on the groups compliance with the Security Plan commitments and compared specific requirements to actual conditions. The self-assessment, however, did not review previous DERs in order to determine if adverse trends existed, an expectation outlined in the station's self-assessment procedure.

The 1998 Fourth Quarter DER Trend Summary Report showed a decline in Security's self-identified personnel error ratio indicating currently that half of the problems occurring in Security are now identified by sources outside the Security organization. Under the DERs attributed to "Significant Personnel Errors" Section, the Trend Report stated that "there have been numerous errors in 1998 in the security area." However, on February 9, 1999, Security provided written feedback to management about the Fourth Quarter 1998 DER Trend Summary but did not address the declining trend and large number of errors detailed in the DER Trend Summary Report. The Security group subsequently submitted an addendum to their initial response to address the large number of errors and more accurately portray the Trend Summary Report to management.

The QA Audit teams for recent security audits (97003 and 98006) consisted of members of QA and at least one technical specialist, in the area of Security, from another utility. The audit team reviewed policies and procedures and also reviewed previously closed DERs to assess the effectiveness of the corrective/preventive actions. The 1997 and 1998 audits identified a total of fourteen DERs but confirmed that the corrective/preventive actions associated with closed DERs either initiated by QA or by another organization were effective. The team reviewed selective paperwork for the 1999 audit and observed a QA Auditor performing a visual check of a previously closed DER to assess the effectiveness of the corrective/preventive actions. The audits were comprehensive, detailed, and evaluated the effectiveness of the corrective action program and considered a strength.

The EP group established and implemented a procedure (EPMP-EPP-05, Emergency Preparedness Program Self-Assessment) for self-assessments that provided pre-defined areas for review with associated performance indicators and guidance when a DER should be issued for findings. The self-assessments were conducted at a frequency schedule in the procedure and included monthly, quarterly, and annual assessments. Generally the procedure for self-assessment provided a good indication of the health of the EP program based on the acceptance criteria therein. The quality assurance group provided effective assessments of the EP program via the audit program and was effective in identifying areas for improvement for which DERS were written.

Quality Assurance audits of the fire protection program were very effective in identifying problems and areas for enhancement in this program and revealing weaknesses within the fire protection groups self-assessment process. A November 1998 audit of the fire protection program was extremely critical and resulted in 21 DERs within the program which is common to both units. These DERs covered a range of deficiencies involving issues with hardware, testing, personnel, and procedures. Fire Protection Management subsequently wrote an additional DER to determine why the fire protection program had deteriorated. The team reviewed the four common DERs generated during the audit (C-98-3247, C-98-2857, C-98-3107, C-98-3156) and concluded that the licensee took prompt action on the issues and initiated reasonable corrective actions.

NMPC indicated that one contributing factor which allowed these problems to develop in fire protection was the fact that since fire protection was a part of operations rather than an independent department, this area did not perform separate biannual self-assessments. In addition, some problems were not detected due to "rightsizing" which eliminated certain system walkdowns. Corrective action was to resume the walkdowns. Fire protection was simply one area that may or may not have been looked at during operations department self-assessments. Corrective and preventive actions include the scheduling of two specific fire protection self-assessments in the next year. In addition, corrective actions were to review program requirements, make changes where required, and evaluate resource needs. Completion of these actions is scheduled for December 31, 1999.

The licensing branch self-assessment evaluated, in part, problem identification and corrective action. The self-assessment for the first half of 1998 indicated all but two DERs were self-identified; DER dispositions were timely; and root causes were thorough and preventive actions were effective. Also, DERs greater than 1 year old primarily required TS amendments. The self-assessment also reviewed open DERs and the DER Trend Summary Report.

Although the self-assessment addressed TS amendments, the licensee did not indicate which TS amendments were still being developed or which had been submitted to the NRC. Regarding the 1995 DER dealing with TS 6.9.3.f, the TS amendment has not been submitted to the NRC.

The average age to disposition licensing DERs was declining, but still slightly greater than the time periods recommended in the DER procedure.

c. Overall Conclusions - Self-Assessment

Quality Assurance

QA audits were an effective element of the self-assessment process and were critical and thorough in evaluating station program areas including corrective actions for previously identified deficiencies.

Operations

Units 1 and 2 operations had good programs for tracking and performing self-assessments. Operations management at both units were taking actions necessary to address the findings. The Operations department self-assessment process was comprehensive, and adequately contributed to problem identification and resolution.

Maintenance

Units 1 and 2 improved its self-assessment in the area of maintenance. The maintenance self-assessment process was good and contributed to problem identification and resolution. NMPC identified that corrective actions for work practices issues has been ineffective. Maintenance management at both units were taking actions necessary to address findings.

Engineering

NMPC had a good engineering self-assessment program. The engineering self-assessments were thorough and broad in scope, resulting in many good findings and recommendations.

Plant Support

The radiation protection groups at NMP had a good self-assessment program. DERs were written for findings meeting the thresholds for DERs. The chemistry groups at NMP did not have a well defined departmental self-assessment program, but had recently taken the initiative to develop a self-assessment program with defined areas for self-assessment including a long term proposed schedule. The quality assurance group was very effective in identifying areas for improvement and problem areas.

Security's self-assessments provided a good review of program conformance to applicable Security plan requirements. However, the self-assessments did not examine previous DERs concerning Security personnel, procedures, or practices to evaluate the effectiveness of its corrective action program.

The EP organization implemented a defined self-assessment program with established performance indicators for use in evaluation of EP program elements. The quality assurance organization provided active oversight of the EP program and issued DERs for identified problems.

Self-assessment within the fire protection group was limited resulting in many critical program findings being identified during quality assurance audits. Since quality assurance audits occur relatively infrequently, undetected fire protection concerns persisted.

The team concluded that overall, licensing's self-assessments were adequate.

4.0 Onsite and Offsite Safety Review Committee Activities

4.1 Station Operations Review Committee (SORC)

a. Inspection Scope (40500)

The team attended a Unit 2 SORC meeting on March 9, 1999, and interviewed the SORC chairman and secretary. The team reviewed minutes of past meetings, as well as, written memoranda which stated management expectations for SORC presenters and attendees.

b. Observations and Findings

The Unit 2 SORC meeting discussed DER 2-99-0450, entitled "2HVY*UC2B in Operability and Impact on Remote Shutdown Capability, Tech Spec 3/4.3.7.4-2." The DER identified an issue pertaining to a scenario that the service water (SW) unit coolers might have been inoperable (also causing the SW pumps to be inoperable) under a postulated control room fire condition. This was because two of the SW coolers did not have Appendix R disconnect contacts. This condition might have caused the plant being operated outside the design basis. This issue was a rather complex design/licensing issue, requiring input from engineering, operations, and licensing. The participants of the meeting included the SORC members, and engineering, operations and licensing personnel.

The Plant Manager was effective in eliciting comments, opinions, and insights from the group. The Plant Manager encouraged questions from the group. From these discussions, the group reviewed the DER in extensive detail. Key emphasis was placed on the background analysis, cause, and corrective/preventive actions sections of the DER. The Plant Manager and the group agreed upon reasonable time frames for the delivery of resolutions. Based on the discussions, there were a few items that required more research and needed to be resolved quickly. The Plant Manager scheduled another SORC meeting in two days to assess these new findings and with a goal of meeting the deadline for submission of an LER, if an LER was warranted. The SORC conducted its functions consistent with procedure GAP-SRE-02.

c. Conclusions

The SORC was conducted with appropriate regard to safety and good oversight of plant activities.

4.2 Independent Safety Engineering Group (ISEG)(Unit 2)

a. Inspection Scope (40500)

The team reviewed the activities performed by the ISEG to assess its involvement in supporting the safe operation of the plant. The team reviewed ISEG meeting minutes and reviewed assessment activities performed by ISEG.

b. Observations and Findings

The ISEG was established to satisfy the requirements of Unit 2 Technical Specifications, Section 6.2.3. Station Administrative Procedure N2-NSAS-IAP-0101,.Independent Safety Engineering Group Program Implementation Directive, Revision 1, dated July 1, 1998, prescribed the functions and required activities to be performed by the ISEG.

One activity performed by the ISEG was to issue an assessment report each calendar month to the Vice Present - Nuclear Safety Assessment and Support. The team reviewed four activity reports for the months of October, November, and December, 1998, and January 1999. Each activity report covered the assessment of operations, maintenance, engineering, and technical support. The ISEG also performed self-assessments of its performance. The team reviewed an ISEG report, "Operating Experience Semi-annual Effective Review," dated February 1, 1999. The team found that ISEG had performed critical assessments on the performance of these groups, resulting in good findings and recommendations. Some of the good findings included:

1) Current transformer liquefaction 10'CFR 21 report not evaluated. Following the Grand Gulf Nuclear Power Station report that the epoxy used for current transformers (CT) in Asea Brown Boveri (ABB) switchgear became liquefied due to high heat and humidity, ISEG initiated an investigation and found that an ABB 10 CFR 21 notification (on potential CT liquefaction) issued in 1989 had never been appropriately reviewed and appropriate examinations incorporated into maintenance procedures. This finding resulted in the revision of maintenance procedures and the implementation of CT examinations.

2) Standby gas treatment system actuator modification electrical issues. a) ISEG identified that cable splices were installed in the conduit to tie in the 120 Vac power cable with the air control solenoid valve cabling without performing any analysis to justify this application. Regulatory Guide 1.75 (endorsed by Unit 2) prohibit the use of splices in raceway. b) Available voltage at the solenoid terminals under the degrade voltage condition was not calculated to ensure sufficient operation voltage. Engineering was working on these ISEG identified issues at the time of the inspection.

3) Operating experience review narrowly focused. ISEG identified that the reviewer for NRC Information Notice (IN) 97-16, "Preconditioning of Plant Systems, Structures or Components," failed to recognize that "preconditioning" was altering equipment condition prior to recording the as-found condition and incorrectly concluded that this IN did not apply to Unit 2. ISEG gave several examples that this IN applies to Unit 2.

The team interviewed two ISEG assessors and found them knowledgeable and familiar with ISEG assessment process.

c. Conclusions

The team concluded that ISEG performed critical assessments on the performance of operations, maintenance, engineering, and technical support and exhibited an appropriate safety focus for corrective action matters of site-wide activities. The assessments often resulted in good findings and recommendations. ISEG assessors were knowledgeable and familiar with the assessment process.

4.3 Safety Review and Audit Board

a. Inspection Scope

The team reviewed the performance of the Safety Review and Audit Board (SRAB) via discussions with selected board members, observations at a board meeting, and examination of SRAB meeting minutes and review of the QA Audit of SRAB.

b. Observations and Findings

SRAB meetings and report preparation and transmittal was consistent with Technical Specifications requirements. Selective review indicated SRAB implemented Nuclear Interface Procedure NIP-SRE-01, Safety Review and Audit Board.

There were good presentations by the NMPC staff to the SRAB, including briefs from the plant managers as well as individual branch managers from both units. The SRAB members exhibited a questioning attitude during general discussion of plant safety and operation. There were discussions of possible performance trends and station training programs.

The QA Audit of SRAB (98004) pointed out that even though SRAB is not specifically required to perform self-assessments, there was evidence to indicate that SRAB's self critical analysis of their function was being performed. Regarding a SRAB identified DER about maintenance qualifications, QA confirmed that SRAB is effectively applying elements of the Corrective Action Program. However, QA identified administrative problems associated with meeting minutes. SRAB was generally aware of SORC meeting minutes backlog, but no actions were taken by SRAB to identify this concern. Overall, QA's audit of SRAB was thorough and complete.

c. Conclusion

The SRAB was an effective tool for identifying and assessing issues. The board was providing effective oversight of safety significant station activities.

4.4 Quality Assurance Audits including Cooperative Management Audit Program (CMAP)

a. Inspection Scope

The team reviewed the Quality Assurance group's oversight of the adequacy of the station's corrective action process. Specific focus was devoted to the effectiveness of the QA group's review of DERs and its interaction with the line organization and senior management. The team interviewed four lead QA auditors. The team sampled audits from the 1998 audit schedule for review and discussed the conduct and results with audit personnel. The team also reviewed Cooperative Management Audit program audits of the QA Program and its effectiveness.

b. Observations and Findings

QA chooses which departments to audit based on its 10 CFR 50, Appendix B and TS required audit schedules. The auditors prepare for an audit by reviewing open old and closed DERs associated with the department being audited, OE trends, NRC violations (not just from Nine Mile Point) in the area to be audited, departmental self-assessments, and by performing DER database searches for repeat or similar DERs.

A typical audit team is comprised of QA personnel, an expert from the other unit who has expertise in the area inspected and perhaps an outside expert. NMPC used approximately 68 outside technical experts during audits conducted in 1998. When a deficiency is identified during the audit, a DER is written and the responsible organization is informed of the deficiency. Of particular note, the QA auditors assess the effectiveness of closed DERs by using an a-priori developed check list. The 3-page check list allows the auditor to review each part of the DER for compliance with internal procedures and criteria.

In addition to the checklist, the auditors may conduct a performance based review of activities that were deficient during the last QA audit. A team member accompanied a QA Auditor on one of these performance based reviews of a closed Security DER (C-98-0992) which dealt with the potential to violate access requirement. The QA Auditor interviewed the Security Supervisor to gain an understanding of the changes made as a result of the DER and physically verified and received a demonstration of a computer system to identify individuals associated with the issue. The QA auditor took the current computer printout to the Fitness For Duty (FFD) office to determine that appropriate actions were being taken.

NMPC also provides for audits of the effectiveness of its quality assurance program through its Cooperative Management Audit Program (CMAP). These audits are performed by individuals from the co-owners of the Nine Mile facility. The CMAP audit (98010, dated July 1998) was found to be very thorough and provided NMPC management very good feedback on the effectiveness of the station's quality assurance program. The audit evaluated the effectiveness of the audit and surveillance programs,

the effectiveness of QA corrective action program implementation and performance, the training and qualification of QA personnel, the conformance to requirements of QA program procedures, and management oversight and direction. The 1998 audit identified several DERs and made a number of recommendations to enhance the effectiveness of the corrective action program. NMPC developed and issued an action plan to address the CMAP recommendations.

c. Conclusions

NMPC effectively used offsite auditing groups to evaluate the effectiveness of its quality assurance program including the adequacy and effectiveness of its corrective action program. Corrective actions were initiated for audit findings.

5.0 Quality First Program

a. Inspection Scope (40500)

NMPC established an employee concerns program, entitled the "Quality First Program (Q1P)." The team discussed the program with station personnel and management and reviewed the implementation of the program to determine the level of use of the process and the incorporation of problems into the DER process if identified. The team interviewed the Q1P Manager and reviewed selective DERs.

b. Observations and Findings

NMPC took the initiative in early 1998 to develop and implement an extensive site wide employee survey program to, in part, gauge the health of the corrective action program, evaluate employee's understanding of the program, and evaluate employee's willingness to use the program. The survey identified a number of areas for improvement for which the licensee has initiated program enhancements. One finding was an lack of understanding by some employees that Q1P was actually an employee concern program (ECP). NMPC has initiated actions to rename the program to ensure that employee's are aware that they can raise safety concerns through the program.

The Q1P has received, in the past two years, two technical issues that met the criteria for a DER. The Q1P Manager took the issues to the responsible organization's supervisor and together, the Q1P Manager and the responsible organization's supervisor wrote DERs. The Q1P Manager properly identified the problem, effectively worked to place the issue in the DER system, and in both cases, the issues were adequately addressed. In addition, the Q1P Manager ensured that the person who initially raised the issue was informed of the resolution. The team reviewed the two DERs and found them to be resolved and closed in a timely manner.

c. Conclusions

The Q1P was an adequate vehicle by which employees can raise safety concerns. Concerns entered into the program, meeting the definition of a DER, were appropriately processed as such.

6.0 Miscellaneous Corrective Actions Issues

a. Scope (40500) (Corrective Action Program Enhancements)

The team meet with NMPC management and discussed recent NMPC initiatives to improve the effectiveness of the station's corrective action program effectiveness.

b. Observations and Findings

NMPC quality assurance reviews and reviews by outside industry groups, including owner's group reviews over approximately the past year and a half, have identified weaknesses in NMPC's corrective action program. In particular, the reviews identified, among other matters, fundamental weaknesses associated with implementation of the program, instances of ineffective corrective actions, human performance issues, and examples of less than optimum root cause analyses for self-identified problems.

The station's quality assurance reviews, as an integral part of NMPC's self-assessment process, were considered by the team to have been very effective, through its performance of broad based reviews across the various station departments, in identifying areas for improvement in the corrective action process. However, NMPC's corrective actions for these self-identified matters have, in some instances, not been fully effective in correcting some human performance, work control, and corrective action effectiveness issues.

In response to the identified issues, NMPC management developed and implemented additional initiatives to improve the station's corrective action process and improve performance. NMPC issued DERs for each of the problem areas identified and initiated a number of broad based corrective actions to improve performance including human performance and corrective action effectiveness. NMPC requested additional industry group audits to evaluate effectiveness of corrective actions taken and planned. In early 1998, NMPC initiated a quarterly employee cultural survey to evaluate employee use, understanding and acceptance of the DER program. NMPC initiated a series of management efforts to encourage proper use of the DER process. NMPC also revised the categorization of DERs to provide a trending category for use in documenting and trending low level matters not requiring extensive evaluation and corrective actions including root cause evaluations. This action was taken following realization that extensive staff time was being used to review and disposition DERs of minor safety significance. This action also allowed station staff to focus attention on DERs of more safety significance.

NMPC also completed leadership training for supervisors and managers, provided observations skills training to supervisors, and reenforced standards for performing self-evaluations including field observations. To improve the quality of root cause analyses, NMPC reduced the number of individuals authorized to perform root cause analyses and provided additional training to those selected in order to improve these analyses. NMPC also required branch mangers to perform corrective action effectiveness reviews during their self-assessments.

NMPC enhanced its DER Trend Summary Report to provide improved tracking and trending and a separate section on assessment of performance including effectiveness of corrective actions and branch self-assessment results.

Of particular note, NMPC revised its 1998 and 1999 business and tactical plans to include specific initiatives directed at improving the corrective action process. NMPC developed a Human Performance Improvement Plan and added it to its Business Plan. NMPC developed special indices to monitor and track, among other matters, personnel performance issues, problem self-identification effectiveness, radworker practices, personnel error rate, and corrective action effectiveness. These indices were included in the stations Site Performance Monitoring Report for management review.

c. Conclusions

NMPC self-identified weaknesses in the effectiveness of its corrective action process and has strengthened the process and focused additional management attention on the process. NMPC initiated multiple actions to improve performance including revision of its 1998 and 1999 business and tactical plans to include specific initiatives directed at improving corrective action effectiveness. NMPC developed a Human Performance Improvement Plan and developed special indices to monitor and track corrective action effectiveness including such matters as personnel performance issues, and problem self-identification effectiveness. The effectiveness of initiated corrective actions has yet to be demonstrated.

7.0 Management Meeting Summary

Meetings were held periodically with licensee management during this inspection to discuss inspection observations and findings. A summary of preliminary findings was discussed at the conclusion of the onsite inspection on February 26, 1999. The exit meeting was held at the Nine Mile Point Station at the conclusion of the inspection on March 12, 1999.

PARTIAL LIST OF PERSONS CONTACTED

R. Abbott	VP - Nuclear Engineering
J. Conway	VP - Nuclear Generation
C. Terry	VP - Nuclear Safety Assessment and Support
A. Julka	Director - ISEG
G. Doyle	Director - Assessment and Corrective Action
R. Hall	Director - HRD
R. Smith	Plant Manager - Unit 1
N. Paleologos	Plant Manager - Unit 2
S. Doty	Manager - Unit 1 Maintenance
F. Fox	Acting Manager - Unit 2 Maintenance
R. Dean	Manager - Unit 2 Engineering
R. Randall	Manager - Unit 1 Engineering
N. Rademacher	Manager - Quality Assurance
W. Yaeger	Manager - Engineering Services
D. Topley	Manager - Unit 1 Operations
C. Senska	Manager - Unit 1 Chemistry
P. Mazzaferro	Manager - Unit 1 Technical Support
K. Ward	Manager- Unit 2 Technical Support
V. Schuman	Manager - Unit 1 Radiation Protection
D. Barcomb	Manager - Unit 2 Radiation Protection
S. Sawa	Manager - Unit 1 Work Control
M. Schimmel	Manager - Unit 2 Work Control
H. Christensen	Manager - Nuclear Security
D. Wolniak	Manager - Licensing and Environmental
J. Swenzkowski	Manager - Employee Concerns

INSPECTION PROCEDURES USED

IP 40500	Effectiveness of Licensee Controls for Identifying, Resolving, and Preventing Problems
IP 71707	Plant Operations
IP 92901	Follow-up - Operations

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened/Closed

NCV 50-410/99-02-01	Severity Level IV, Non-Cited violation involving Failure to implement appropriate acceptance criteria
NCV 50-220/99-02-02	Severity Level IV, Non-Cited violation involving Failure to submit special reports in accordance with T.S. 6.9.3.f
NCV 50-410/99-02-03	Severity Level IV, Non-Cited violation involving Failure to implement timely corrective actions
NCV 50-410/99-02-04	Severity Level IV, Non-Cited violation involving Failure to implement timely corrective actions

LIST OF ACRONYMS USED

CMAP	Cooperative Management Audit Program
DER	Deviation/Event Report
EPIX	Equipment Problem Information Exchange
ECCS	Emergency Core Cooling System
ECP	Employee Concerns Program
EDG	Emergency Diesel Generators
EQRM	Environmental Qualification Required Maintenance
EP	Emergency Preparedness
HPCI	High Pressure Coolant Injection
ISEG	Independent Safety Engineering Group
MOV	Motor-Operated Valves
NCV	Non-Cited Violation
NMPC	Niagra Mohawk Power Corporation
NMP	Nine Mile Point
OE	Operating Experience
PID	Problem Identification Document
PM	Preventive Maintenance
PRA	Probabilistic Risk Assessment
QA	Quality Assurance
Q1P	Quality First Program
QRCE	Qualified Root Cause Evaluator
RCE	Root Cause Evaluation
RP	Radiation Protection
SORC	Station Operations Review Committee
SW	Service Water
SRO	Senior Reactor Operator
STA	Shift Technical Advisor
SRAB	Safety Review and Audit Board
TS	Technical Specifications