**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION I**

Report Nos.: 95-25
95-25

Docket Nos.: 50-220
50-410

License Nos.: DPR-63
NPF-69

Licensee: Niagara Mohawk Power Corporation
P. O. Box 63
Lycoming, NY 13093

Facility: Nine Mile Point, Units 1 and 2

Location: Scriba, New York

Dates: November 26, 1995, to January 6, 1996

Inspectors: B. S. Norris, Senior Resident Inspector
M. J. Buckley, Resident Inspector
R. A. Skokowski, Resident Inspector

Approved by: Richard J. Conte 2/12/96
Richard J. Conte, Chief Date
Projects Branch 5
Division of Reactor Projects

Areas Inspected: See Executive Summary

## TABLE OF CONTENTS

## RESIDENT INSPECTION DETAILS

### 1.0 SUMMARY OF ACTIVITIES

**Niagara Mohawk Power Corporation (NMPC) Activities**

During this inspection period, Nine Mile Point Unit 1 (Unit 1) operated at full power, with only minor planned power reductions. On January 5, 1996, Unit 1 commenced a plant shutdown per Technical Specifications, following the failure of a main steam isolation valve to return to the open position following a surveillance test. Power was reduced about 3% before repairs were completed. (Section 3.4 of the Resident's report)

Unit 2 maintained essentially full power during this inspection period. Indicated power continues to be limited to 99.8%, pending resolution of errors in the heat balance calculations.

**NRC Staff Activities**

The inspectors conducted inspection activities during normal, backshift, and weekend hours. Specialist inspections conducted during this period included Unit 2 licensed operator requalification program. The results of the requalification inspection are enclosed.

### 2.0 PLANT OPERATIONS (71707, 92901, 93702)*

### 2.1 Operational Safety Verification

The inspectors observed overall operation and verified selectively that NMPC operated the units safely and in accordance with their procedures, license, and Technical Specifications (TSs). The inspectors conducted regular tours of all accessible plant areas. The tours included walkdowns of safety systems and components for leakage, lubrication, cooling, and general material conditions that might affect safe system operation. No significant deficiencies were noted, minor deficiencies were discussed with the appropriate management.

### 2.2 Plant Tours and Control Room Observations - Unit 1

The inspectors accompanied the Unit 1 Station Shift Supervisor (SSS) during a routine plant tour. This tour included most of the turbine building and reactor building general areas, and the battery and diesel rooms. During the tour, the inspector noted that the SSS gave added attention to pumps and valves that would be required for safe shutdown of the plant during normal and accident conditions. The SSS noted some minor discrepancies and housekeeping items and addressed these issues with the shift personnel. The inspectors concluded that the safety perspective shown by the SSS during the tour was adequate.

---

* The NRC inspection manual procedure or temporary instruction that was used as inspection guidance is listed for each applicable report section.

## 2.3 Unit 1 Emergency Cooling System Walkdown

The emergency cooling (EC) system at Unit 1 is a passive, standby system for the removal of decay heat without the loss of reactor water following a reactor scram. The EC system is used as a heat sink when the main condenser is not available, or in the event of loss of a reactor feedwater. In the event the system is initiated, the steam from the reactor water passes through the EC condenser and returns back to the reactor as water. The EC system consists of two independent loops, with two condensers per loop; each condenser is capable of removing 50% of the design decay heat. The system operates via natural circulation. Only one valve per condenser needs to open for the system to operate, and those valves receive control power from the emergency DC (direct current) bus. The EC system automatically initiates on high reactor pressure or low-low reactor water level.

The inspectors walked down all accessible portions to assess the condition of the EC system and to evaluate the ability of the system to perform its intended safety function. The system was aligned in the proper configuration, no significant detrimental equipment conditions that might degrade performance were identified, the valves were well maintained, and the general housekeeping in the area was acceptable. However, the inspectors identified several material conditions that were discussed with the SSS and the cognizant system engineer.

- Two steam leaks developed since the startup from the last refueling outage (Spring 1995), one on a packing gland and the other on a drain plug. NMPC had already documented these steam leaks, but the inspector was concerned about the detrimental affects of a long term steam leak.

- Several packing gland nuts on drain valves appeared to have insufficient thread engagement. Discussions with the system engineer identified that there was no thread engagement criteria for packing gland nuts.

- There were no piping supports for the fire water header connection to the #11 EC make-up tank, and the length of unsupported pipe (>16 feet) appeared to exceed that allowed (12 feet) by the NMPC internal standards.

NMP representative indicated that they would review this area.

The inspector concluded that the EC system would be able to perform its intended function. But pending resolution of the above concerns, and NRC's review of the evaluations and any resultant corrective action, the final assessment of the material condition of the EC system is unresolved. **(URI 50-220/95-25-01)**

## 2.4 Extended Inoperability of the Unit 2 Loose Parts Monitor

On December 21, 1995, the DC power supply for the Unit 2 loose parts monitor (LPM) failed. The inspectors questions the SSS as to why the associated Technical Specification (TS) Limiting Condition for Operations (LCO) had not been entered. The inspectors were informed that the LPM had been inoperable since July 1991, as noted in the Unit 2 Equipment Status Log (ESL # 91-407).

NMPC submitted the required Special Report, per TSs. Following inspectors questioning, NMPC issued DER 2-95-3455, to followup on the long standing inoperability of the LPM.

The inspectors reviewed the ESL, the Updated Final Safety Analysis Report (UFSAR), TSs, and the Special Report, as well as recent work orders associated with the LPM. The inspectors also discussed the long term inoperability of the LPM with the Unit 2 Technical Support Manager and licensing representatives.

As documented in ESL 91-407, the LPM was inoperable due to specific channel setpoints that were too low for low power operation. According to UFSAR Section 4.4.6.1.3, the LPM is not a safety-related system but is intended for informational purposes only. However, TS 3.3.7.8 requires a special report be submitted if one or more loose part detection system channels is inoperable for more than 30 days; the special report outline and the cause of the malfunction and the plans to restore the system to operable status. The inspector ascertained that two special reports were submitted in 1991. The first special report, dated August 16, 1991, stated that corrective actions would be completed by September 1991. Discussions with the Technical Support Manager indicated that these corrective actions were completed, as scheduled. The second special report, dated November 8, 1991, described problems similar to those discussed in the first special report. Several additional corrective actions were detailed in the November 1991, special report; but, no specific completion dates were stated.

The inspectors were particularly concerned with weak organizational attention that allowed the LPM to be inoperable for so long. The Unit 2 Plant Manager indicated that the extended period with the LPM inoperable did not meet management's expectations. Further review revealed that a DER was written on July 11, 1995, (DER # 2-95-2128) to address the extended inoperability of the LPM. The inspectors reviewed the DER and found it to address the technical issues associated with the failed LPM; however, it did not address the longevity of inoperability due to weak attention to the matter management oversight aspect.

As of the end of the inspection period, NMPC was planning to replace the 35 Volt DC power supply by the end of January 1996, per WO 95-14117. Based on these concerns, this issue is unresolved pending the completion of NMPC evaluation (DER No. 95-3455), and subsequent NRC review. **(URI 50-410/95-25-02)**

## 3.0 MAINTENANCE (61726, 62703, 92902, 60705)

### 3.1 Maintenance and Surveillance Observations

The inspectors observed maintenance and surveillance activities to ascertain if safety-related work was conducted according to approved procedures, the TSs, and the appropriate industry codes and standards. Observation of activities verified that: limiting conditions for operations (LCOs) were satisfied, removal and restoration of equipment was controlled, administrative authorizations and markups were obtained, procedures were adequate, certified parts and materials were used, test equipment was calibrated, radiological

requirements were implemented, system prints and wire removal documentation were used, quality control hold points were established, deficiencies were documented and resolved, and records were complete and accurate. In general, the activities observed and reviewed were effective with respect to meeting the safety objectives. No significant concerns were identified during the inspectors' review except as noted below.

### 3.2 Unit 1 Emergency Diesel Generator Operability Test

On November 27, 1995, during the performance of surveillance tests associated with the #102 emergency diesel generator (EDG) at Unit 1, operators noted that they could not determine the differential pressure (D/P) for the raw water strainer due to the pump discharge pressure gauge being plugged. A problem identification report (PID # 12395) was written to initiate repairs. All other parameters were normal; the tests were considered satisfactory with the exception of the cooling water surveillance, which was classified as a "no test." On December 7, after the strainer D/P indication was repaired, D/P was determined to be 6 pounds per square inch differential (psid), exceeding the 5 psid "guidance value" contained in the EDG surveillance procedure. The operators shifted the duplex strainer to the clean basket. The clean strainer D/P was 4.5 psid. Operations personnel questioned the validity of the guidance value for D/P being so close to that expected for a clean strainer. A procedure change request (# 40279) was approved that (1) revised the guidance value for shifting to the standby strainer if raw water strainer D/P exceeds 10 psid and (2) added a step to declare the diesel inoperable if the D/P could not be maintained below 20 psid. The inspectors reviewed the vendor manual and noted that the changes were consistent with the vendor's recommendations; i.e., to maintain D/P across the strainer less that 20 psid.

Also, when the operators shifted the strainer on December 7, they identified a small leak on the standby strainer. The leak was from a 1/8" vent plug. An evaluation by the SSS, with input from the system engineer, determined that the strainer, the raw water system, and the diesel generator would remain operable, even with the leak not repaired. During EDG surveillance testing on December 26, operations personnel found that the leak had progressed to a stream of water. The leakage was past the strainer selector valve, which was not designed to provide a water-tight seal. The increased leakaged caused operations personnel to reevaluate the earlier decision of December 7; an ensuing operability determination concluded that the raw water system and EDG operable, but a temporary modification was initiated to plug the vent leak. DER 1-95-3463 was written to request that engineering verify the operability determination of the SSS. The engineering operability determination, completed on December 28, verified that the EDG-102 was operable during the period of time from when the leak was discovered (December 7) until when the vent line was sealed (December 26).

The inspectors reviewed the operability determination completed on December 28, and agreed with NMPC's conclusion that the EDG would be capable of performing it's intended safety function. Also, the procedure change request was considered to be appropriate and allowed the operators more flexibility. Overall, the operations personnel were aggressive in pursuing operability determinations, and repairs to the system.

### 3.3 Unit 1 Service Water Adams Strainer 12 Repair

The service water system uses adams strainers on the discharge of the pumps to filter the incoming lake water while the service water system is in operation. An adams strainer uses a self cleaning feature, allowing continuous operation. Its purpose is to keep debris from entering the service water valves, heat exchangers, and other components, which could jeopardize the operability of the components by reducing their ability to remove heat.

Preventative maintenance was performed on the #12 strainer during a period when the lake temperature was close to freezing. This reduced the need for high service water flows, and allowed for one service water pump and strainer to satisfy normal heat loads requirements. The adams strainer was cleaned and repaired without interruption of adequate cooling to the affected components, all systems operated without a temperature excursion.

The inspectors concluded that the work was performed in a controlled manner, authorized by WO 95-04895, and with the appropriate documentation at the work location, including the vendor technical manual. The work area was well controlled and roped off, and the system engineer was present observing the maintenance activities and inspecting replacement parts. Maintenance personnel documented completion of work steps as they were concluded. Mark-ups were correctly hung and properly isolated the system, both electrically and hydraulically. The inspectors considered this maintenance activity to be performed well.

### 3.4 Unit 1 Main Steam Line Isolation Valve Test Failure

On January 5, 1996, during performance of surveillance N1-ST-Q26, "Feedwater and Main Steam Line Power Operated Isolation Valves Partial Exercise Test and Associated Functional Testing of Reactor Protection System Trip Logic," one of the main steam isolation valves (MSIV 01-02) failed to automatically re-open, as expected, when it reached the 7% closed limit switch. In accordance with the Unit 1 TS 3.2.7, operations personnel declared the MSIV inoperable and entered the appropriate limits condition for operation (LCO). The LCO action statement for an inoperable MSIV requires that the a normal reactor shutdown be commenced if the valve cannot be returned to an operable status within one hour.

Coincident with the shutdown, an investigation determined that the MSIV did not open due to a blown fuse in the MSIV control power circuit. The fuse was replaced, the surveillance test was repeated, and the valve operated as expected. After an engineering operability evaluation, the Unit 1 SSS declared the MSIV operable and took actions to return to the plant to full power. Power was reduced approximately 3%.

The inspectors reviewed the actions taken by the Unit 1 personnel due to the MSIV surveillance test failure and consider those actions appropriate and timely.

## 4.0 ENGINEERING (37551, 92903)

### 4.1 Engineering Backlog

The inspectors assessed the NMPC the backlog of engineering related work. To complete this assessment, the inspectors reviewed:

- the list of backlogged plant change requests (PCRs) associated with both simple design changes (SDCs) and modifications;
- selected Deviation/Event Reports (DERs) assigned to engineering, to determine both the magnitude of the backlog, and the safety significance of the items within the backlog;
- the trends associated with the completion of SDCs, modifications, and DERs; and
- the associated procedures to determine their adequacy, and to verify compliance.

During the review, the inspectors discussed their findings with the various engineering managers for both units.

Unit 1

The backlog of open Unit 1 DERs for Nuclear (design) Engineering, as of December 1994, was 160 (9 requiring disposition and 151 requiring implementation); as of November 1995, was the backlog 144 (41 requiring disposition, and 103 requiring implementation). The inspectors reviewed lists of open and extended Unit 1 and common DERs for Nuclear Engineering and noted that, although there were 77 DERs extended during 1995, the safety significance was low or had been appropriately addressed. For each DER extended by Unit 1 Engineering, an implementation extension request was submitted to the Engineering Manager for approval. Each extension included the reason or justification for approval.

The inspectors identified no long standing safety significant issues during the review of the PCR lists. The number of backlogged SDCs had decreased over the last eleven months, from 67 in December 1994, (13 awaiting design work, with 54 installed and awaiting paperwork closeout) to 47 in November 1995 (13 awaiting design work, and 34 awaiting closeout of paperwork). The total number of backlogged modifications for Unit 1 had also decreased from 47 in December 1994 to 20 in November 1995. The inspectors considered the backlog of the Unit 1 of simple design changes and modifications to be reasonable.

Review of documents and discussions with the Unit 1 Nuclear Engineering Manager indicated that procedures were in place for the prioritization of SDCs and modifications. The inspector also verified that a periodic review of the SDC and modification backlog was performed by the engineering organization, that the data associated with the backlog was trended and provided in the monthly engineering performance report and NMPC business plan. The Manager

was very knowledgeable of items in the engineering backlog. The inspectors considered the trending of the Unit 1 engineering backlog, work prioritization, and control of project extensions to be good.

Unit 2

The inspectors review of the Unit 2 PCR lists identified no long standing safety significant issues. The number of SDCs had decreased significantly over the last twelve months, from 296 in December 1994, (88 awaiting design work, and 208 awaiting closeout paperwork) to 190 in November 1995 (32 awaiting design work, and 158 paperwork closeout). The total number of backlogged modifications for Unit 2 has remained relatively constant over the last year at approximately 60. However, of those 60 modifications, the number requiring design work had been reduced by approximately one-third. The inspectors considered the Unit 2 backlog of simple design changes and modifications to be reasonable, with the appropriate level effort employed to reduce it.

Discussions with the Unit 2 Nuclear Engineering Manager indicated that procedures were in place for the prioritization of SDCs and modifications. Through these discussions, the inspectors also ascertained that periodic reviews of the SDC and modification backlog were performed by the engineering organization, and that data associated with the backlog is trended and provided in the monthly engineering performance report and in the NMPC business plan. The inspectors found the Unit 2 Nuclear Engineering Manager to have a detailed knowledge of items within the backlog, and considered the mechanism in place for work prioritization and backlog trending to be good.

The backlog of open Unit 2 DERs for both Nuclear Engineering and Technical Support has remained basically unchanged. The inspectors reviewed the lists of open DERs for both engineering groups. Based on a higher than expected age and number of safety-related DERs, the inspectors selected a sample of safety-related DERs for review. The inspectors reviewed five Technical Support DERs and twelve Nuclear Engineering DERs, and determined that the safety significant portions of each were addressed in a timely manner.

However, during the review, the inspectors identified a number of DERs that failed to contain justifications for extension of their implementation completion dates, as required by Procedure NIP-ECA-09, "Deviation Event Report." Two Technical Support DERs (2-94-1408, and 2-95-0509), and two Nuclear Engineering DERs (2-94-2371, and 2-95-1876) were found that did not have the required extension justification. Notwithstanding, discussions with the respective managers indicated that they were aware of the extensions. Furthermore, the portions of the DERs that were extended did not impact the safety of the plant. In addition to the failure to document the justification for extensions, the inspectors also noted that the justifications that were documented varied widely in how the justifications and were recorded. Based on the low safety-significance of the items identified and the unknown extent of the programmatic concerns, this issue will remain unresolved pending licensee further evaluation of the DER extension practices, and subsequent NRC review. **(URI 50-410/95-25-03)**

The inspectors discussed the DER backlog with both the Unit 2 Nuclear Engineering and Technical Support Managers, and found them knowledgeable of the items within their respective DER backlogs. Both managers indicated that periodic reviews of the backlog were performed, even though the procedure does not require such a review. With the exception of the failure to appropriately document the justification of DER extensions, the inspectors considered the management of the Unit 2 backlog of engineering related issues to be appropriately controlled.

### 4.2 Unit 2 Power Uprate Review

The inspectors review at another facility the Unit 2 power uprate completed in May, 1995. The particular concerns were the use of non-NRC approved computer codes in uprate analysis, the failure to address cycle-specific reviews during the uprate evaluation, and the inadequate assumption for initial containment pressure utilized in the containment analysis. Previous reviews by the NRC of the Unit 2 power uprate focused on the Station Operating Review Committee (SORC) review of the uprate and the associated implementation (see Inspection Report 50-410/95-12); and monitoring of the actual initial power ascension (see Inspection Report 50-410/95-16).

Based on a review of the NRC safety evaluation report and other documents, plus discussions with members of the NMPC Unit 2 Nuclear Engineering Staff, the inspectors verified that the computer codes used were approved by the NRC staff. The inspectors ascertained that the cycle-specific core reloading analysis will confirm the power uprate capability and establish, as necessary, cycle-specific thermal limits, as documented in the Unit 2 license amendment request. Additionally, the inspectors verified that the assumed containment pressure in the Unit 2 power uprate containment analysis was consistent with the worst case allowed by the TSs. During the course of the review, the inspectors verified that the Unit 2 UFSAR and TS were appropriately updated. No concerns were identified as result of this review.

## 5.0 PLANT SUPPORT (71707, 71750, 92904)

### 5.1 Observations of Plant Support Activities

The inspectors routinely monitor activities in the areas of radiation protection, emergency preparedness, security, fire protection, and general housekeeping during tours. Minor problems were discussed with the appropriate supervision; no significant deficiencies were identified, except as noted below.

### 5.2 Dropped Radwaste Cask Liner at Unit 1

On November 29, while lowering a full radioactive waste (radwaste) cask liner, through a floor opening, into a cask on a truck in the Unit 1 radwaste building truck bay, the grapple used to move the liner failed. The liner disengaged from the grapple and fell about one foot, becoming wedged in the opening. The liner was suspended approximately 20 feet above the truck bay floor. The liner weighed 5,500 pounds and contained dry radwaste; contact dose rates on the side were approximately 2.5 Rem/hour, dose rates on the top

of 500 millirem/hour. The plant was at 100% power at the time of the event.

Initial evaluation by NMPC determined the liner was undamaged and stable in the wedged position, and that no abnormal radiological conditions existed. The truck was moved out of the radwaste building and all subsequent work in the truck bay was suspended. Positive controls were established to preclude inadvertent personnel access to the area until the cask liner was in a secured condition. The Station Shift Supervisor, with Plant Manager concurrence, authorized manual rigging of the cask liner to the truck bay floor.

Although the initial evaluation by NMPC personnel to ascertain the cask condition was good, the engineering work done to design a rigging device to lift and subsequently lower the cask was poor. The design did not take into account attaching the cable straps to the lifting device; and therefore, did not work the first time. This failed attempt caused the personnel in the rigging party to receive unnecessary dose. The magnitude of this additional dose was a significant percentage of the total dose for the cask recovery.

The radiation protection (RP) technicians established the truck bay as a locked radiation area. Access was controlled with a special radiation work permit (RWP) to enter the area. Also, the RP technicians staged airborne samplers in the area in case the cask fell to the floor. The technicians assessed the dosimetry requirements for the personnel working with and around the cask liner, calculated stay times, and maintained cognizance of the changing conditions while the cask liner was recovered. The inspectors considered the support of the radiation protection department to be excellent.

The liner was successfully lowered to the truck bay floor, without incident, the next day. NMPC and ChemNuclear, the vendor for the liner and grapple, inspected the liner and identified no consequential damage. The liner was placed in a cask and transported offsite. The preliminary root cause was a sheared bolt between the lifting grapple motor and worm gear. Failure of the bolt allowed the worm gear to separate from the motor, preventing the grapple from properly engaging the liner. NMPC also considered their method for verifying grapple engagement inadequate. NMPC shipped the grappling device to ChemNuclear for further evaluation. The final root cause and corrective actions will be documented in the NMPC DER disposition.

Through discussions with the Plant Manager and operations personnel, it was determined that this type of grapple, or similar devices, are used at other nuclear facilities. Although NMPC's evaluation indicated that a 10CFR Part 21 notification was not required, ChemNuclear informed all users of the problem. NMPC also intends further discussions on the potential generic issue with the vendor. The inspector considered the recovery of the radwaste cask to be adequate and successful.

### 5.3 Unit 2 Digidose Computer Incorrectly Displaying Allowable Dose

On January 3, 1996, NMPC personnel identified that the Digidose computer incorrectly displayed the allowable dose for the year when logging on for entry into the radiation control area (RCA). At the start of a new year, the allowable dose was reset to 4000mr. On January 2, 1996, an individual

received 12mr, as indicated on the computer. On January 3, while logging into the RCA, the individual noted that the Digidose computer again indicated the allowable dose was 4000mr. This problem was confirmed with other workers accompanying the individual. The individual notified RP and DER-96-0013 was initiated to address the concern.

The inspectors reviewed the DER and discussed the issue with the lead engineer. According to the engineer, NMPC contacted the vendor and determined that the software was resetting the display to 4000mr every midnight. This was due to an error in the software, initiated by a routine to reset the allowable dose at the beginning of a new year. This was the first opportunity for the Digidose computer to see the reset routine, since the system was first placed in operation in January 1995. The vendor supplied NMPC with a revision to the software, which corrected the problem. The inspectors ascertained that the database tracking the actual dose was updating correctly, and that only the display was resetting. Also, the thermoluminescent dosimeters (TLDs) were still the formal means of tracking an individuals' dose. NMPC contacted other utilities using the same equipment to inform them of the problem.

The inspectors considered the self-identification of the problem by an individual outside of the RP department to be an excellent example of good radiation protection practices.

## 6.0 SAFETY ASSESSMENT/QUALITY VERIFICATION (71707, 90712)

### 6.1 (Closed) LER 50-410/95-011: Operation in Excess of 100% Rated Core Thermal Power due to Core Thermal Power Calculation Methodology Error

On November 15, 1995, while operating at about 100% power, Unit 2 engineering staff discovered that the actual maximum core thermal power exceeded that allowed by the Unit 2 license. Further evaluation by NMPC identified that, from February 7 through November 15, 1995, actual power occasionally exceeded indicated power by as much as 4.23 MWt (megawatts thermal); this equates to approximately 0.2% reactor power. Maximum core power is 3467 MWt. It was also determined that the error did not occur prior to February 1995, when a new design for measuring feedwater flow was installed.

The error was because of a failure to account for about 24 gallons per minute (gpm) flow from the control rod drive system (CRDS) in the heat balance and thermal power calculation. The root cause for the omission of the RDS flow in the formula was an inadequate review of the system interactions by the vendor (General Electric) and by NMPC engineering.

The immediate corrective action was the imposition of an administrative limit of 3462 MWt for maximum core thermal power, a reduction of 5 MWt. Additional corrective actions include a revision of the heat balance calculation to reflect the CRDS flow and to determine what design changes are required. This is expected to be completed by June 30, 1996.

The inspectors reviewed the LER and determined that it satisfactorily described the event, the root cause evaluation, and the corrective actions. The inspectors considered the immediate corrective actions and the additional

actions to be sufficient to prevent additional occurrences of excess power. This is a violation of the maximum rated thermal power, as specified in the Unit 2 License, Amendment 66, and the Unit 2 Technical Specifications, Section 1.34. The error is a small fraction of the allowed thermal power, is less that the uncertainty applied to the calculation assuming all other elements of the measurement are accurate, and is bounded by the safety analysis of the Updated Final Safety Analysis Report. As such, this violation was not cited in accordance with the NRC "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600, (60 FR 34381; June 30, 1995), Section VII.B.1.

The issue was initially discussed in NRC inspection report 50-410/95-24, at which time an unresolved item was opened to follow NMPC's resolution of the issue. URI 50-410/95-24-03 will remain open until completion of the corrective actions and the NRC review of the activities.

## 7.0 MANAGEMENT MEETINGS

### 7.1 NMPC/NRC Restructuring Meeting

Senior management for NMPC and NRC met on November 27, 1995, at the NRC Region I office. The meeting focused on the recent restructuring of NMPC, and subsequent changes to the NMPC organization. The restructuring is part of a proposal to the New York State Public Service Commission. The restructuring would put all of the current NMPC power generation plants into a separate company. In order to implement the portion of the proposed restructuring and subsequent reorganization that would affect Nine Mile, NMPC requires a license amendment. The amendment is currently being reviewed by the NRC staff. Also discussed during this meeting were NMPC's efforts to track, trend, and correct human performance errors at both Nine Mile Point Units 1 and 2. The presentation handouts provided by NMPC during this meeting are enclosed.

### 7.2 Periodic and Exit Meetings

At periodic intervals and at the conclusion of the inspection period, meetings were held with senior station management to discuss the scope and findings of this inspection. The final exit meeting occurred on January 26, 1996; NMPC did not dispute any of the inspectors findings or conclusions. Based on the NRC Region I review of this report, and discussions held with NMPC representatives, it was determined that this report does not contain safeguards or proprietary information.

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

DOCKET/REPORT NOS: 50-410/95-25

LICENSEE: Niagara Mohawk Power Corporation
Lycoming, New York 13093-9985

FACILITY: Nine Mile Point, Unit 2

LOCATED AT: Oswego, New York

INSPECTION DATES: December 11-15, 1995

INSPECTORS: J. Caruso, Operations Engineer/Examiner
S. Willoughby, Contractor, LITCo

LEAD INSPECTOR: John D. Caruso 2/1/96
John Caruso, Operations Engineer/Examiner Date
Operator Licensing and
Human Performance Branch
Division of Reactor Safety

APPROVED BY: for 2/1/96
Glenn W. Meyer, Chief Date
Operator Licensing and
Human Performance Branch
Division of Reactor Safety

Areas Inspected: The inspection included a review of the annual operating and biennial written examinations, and observation of individual and crew performance for one operating and one staff crew during simulator evaluations. In addition, interviews with licensed operators, training instructors, and supervisory personnel were conducted. The procedures for maintenance and activation of operator licenses were reviewed. The inspectors verified that the requirements were met to reactivate inactive licenses. Administrative procedures and documents associated with the training program and its implementation were also reviewed.

## UNIT 2 REQUALIFICATION INSPECTION DETAILS

### 1.0 BACKGROUND AND SCOPE

During the week of December 11, 1995, two NRC inspectors conducted a performance-based inspection of the Nine Mile Point Unit 2 Licensed Operator Requalification Training (LORT) program using NRC Inspection Procedure 71001, "Licensed Operator Requalification Program Evaluation." The purpose of this inspection was to evaluate the acceptability of the licensed requalification training program with respect to 10 CFR 55 regulations and to assess the effectiveness of the training. Also, the inspectors focused on the training evaluation process and requalification program revisions made as a result of this evaluation process.

The inspection included a review of the annual operating and biennial written examinations, and observation of individual and crew performance for one operating and one staff crew during simulator evaluations. In addition, interviews with licensed operators, training instructors, and supervisory personnel were conducted. The procedures for maintenance and activation of operator licenses were reviewed. The inspectors verified that the requirements were met to reactivate inactive licenses. Administrative procedures and documents associated with the training program and its implementation were also reviewed.

The inspectors used 10 CFR 55 and NUREG-1021, "Operator Licensing Examiner Standards," Revision 7, as a basis for determining the adequacy of the Nine Mile Point Unit 2 operator examination process.

### 2.0 TRAINING ADMINISTRATION

#### 2.1 Training Program Evaluation

The inspectors concluded that the LORT program was effectively revised to stay current with the needs of the operators. Management expectations were effectively provided to the operators during simulator training evaluations.

The inspectors reviewed initiatives taken by Niagara Mohawk to update and enhance the requalification program. The inspectors reviewed a detailed listing of lecture topics presented throughout the past year during each LORT training cycle and concluded the topic coverage was appropriate.

The inspectors reviewed several documents, such as end-of-cycle and annual training reports, that implemented training improvement initiatives that emphasized management's expectations (discussed in greater detail in Section 2.4 of the LORT inspection report).

#### 2.2 Operator Feedback

Niagara Mohawk has revised and improved the operator requalification program based on operator feedback. The inspectors reviewed the feedback records for the past year and noted that the system used to collect student feedback has been improved and formalized since the last LORT program inspection conducted by the NRC. A tracking system has been developed to summarize operator feedback and the actions taken to resolve the comments received. The

inspectors noted that a lot of positive comments were made concerning the quality of the training received in addition to the areas that were identified as needing improvement. Several lesson plans were reviewed that were developed as a result of operator feedback, e.g., thermal limits training, redundant reactivity control training, and technical specification training that included table-top reviews led by the station shift supervisors with the goal of improving the technical specification knowledge levels for all crew members. These training initiatives provided good quality training in response to operators' feedback requests. The influence of improved technical specification (TS) training appeared to carry over into the annual operating examinations; the shift supervisors were observed to provide detailed briefs to their crews upon entry into TS limiting conditions for operation (LCOs).

The training department was receptive and timely in resolving major concerns identified in the feedback process. The feedback documented at the end of each training cycle and throughout the year was collected through informal verbal feedback from the individual crews and operations management but was not formally solicited by training. Student feedback forms were not typically completed and filed. Although the forms were still available for use and were discussed in the program administrative guidelines, these forms were not typically used to document operator feedback. Much of the feedback was provided on an as needed basis and documented in the form of training review request (TRR) forms. TRRs can be generated by any individual involved in the training program. The TRRs were tracked to completion on an in-house training department data base. The inspectors reviewed a sampling of the TRRs generated the past year and found many completed training activities in response to individual requests.

The inspectors determined that the training staff and management had been responsive to the major issues and questions raised by operators, as evidenced by various training initiatives that were subsequently implemented. The inspectors concluded that Niagara Mohawk has effectively revised and improved the operator requalification program based on operator feedback.

### 2.3 Remedial Training

The inspectors reviewed a sample of remediation records for individuals and crews who had failed annual operating and biennial written exams and determined this area to be a program strength.

The performance standards and guidelines for remediation are established in the Licensed Operator Requalification Training Procedure, NTP-TQS-102. The inspectors reviewed the completed training remediation packages for the following: one individual who failed the 1995 biennial written exam; one individual who failed the 1995 annual operating exam; "D" operating crew operating exam failures and finally the proposed remediation package for the Staff Group 3 operating exam failure that occurred the week of the inspection.

The remediation packages reviewed were thorough and appropriate for the weaknesses demonstrated. When an annual or biennial test was failed, the remediation program included a record review of all previously identified weaknesses for that operator or the crew, and the generation of a

comprehensive training and testing remedial program. The remediation packages addressed all weaknesses identified for the entire two-year training cycle not just the weaknesses identified on the failed examination. This was judged to be an excellent training initiative. Operator interviews also indicated that the remedial training received was comprehensive and effective in remediating the identified weaknesses. Based upon these results, the inspectors concluded that the remedial training was considered a program strength. This was also evaluated as an area of strength during the NRC program inspection conducted a year ago.

**2.4 Management Oversight and Controls**

The inspectors reviewed various documentation that indicated management involvement in the LORT program was significant and effective and an area of program strength. Many examples were reviewed that demonstrated management's commitment to continually review and enhance the program in response to operator needs. Management oversight and receptiveness to operator feedback were also confirmed during operator interviews.

The inspectors reviewed 105 training change orders (TCOs) written in 1995 and concluded that many enhancements and changes were implemented as a result of these requests. TCOs are formal training requests submitted by operation department management representatives to the training department. Examples of training implemented in 1995 as a result of these requests included individual plant examination (IPE) training, markup training, specialized training to support refueling 04, simulator training and evaluations using minimum staff manning, and pre-job briefing training.

The inspectors reviewed the records documenting senior operations and training department management evaluations of the licensed operator requalification program conducted throughout the past year and concluded the evaluations were appropriately critical and were instrumental in bringing about necessary improvements to the program. These evaluations covered a wide variety of topics and were conducted in both classroom and simulator environments. The evaluations conducted by management were thorough, objective and provided constructive feedback. It was apparent that the management role in this process was clearly one of identifying problems and weaknesses. The evaluations were found to be appropriately critical and were instrumental in bringing about necessary improvements to the program. Where significant deficiencies were noted, the evaluators asked for a response. These evaluations were reviewed by training supervision with appropriate corrective action and responses were documented on the evaluation.

In addition, all of the end-of-cycle training reports issued for 1995 were reviewed and the inspectors concluded that the reports were comprehensive assessments of the training conducted for that cycle and provided management useful feedback on program effectiveness. These reports were issued at the end of each LORT training cycle by the general supervisor of operations training. The reports listed any training missed by the operators. The reports indicated a high percentage of operators completed their training by the end-of-cycle. The reports also identified areas for individual or crew improvement and corrective actions taken, the status of open and closed items

resulting from training, and NRC or license renewals due in the next 3 months. These end-of-cycle reports provided a good management overview/assessment of the training conducted each training cycle.

Finally, the inspectors reviewed the Annual 1994 NMP 2 Operations Training Report, which summarized performance for the entire year and included such items as LORT program changes initiated during the year, operator performance including strengths and areas for improvements identified, management observations of training, and a summary of 1995 actions to be taken as a result of the 1994 annual report. The inspector concluded that management involvement in the LORT program, as well as the resolution of deficiencies by the training supervision was effective and viewed as a program strength.

## 3.0 EXAMINATION DEVELOPMENT

The inspectors reviewed the exam material and concluded that in general the exams were challenging and met the guidelines established in the Examiner Standards and the inspection procedure.

Based on review of the written exams, the inspectors concluded the exams were written at the appropriate level of difficulty with a minimum number of direct look-up questions. The inspectors noted that the NMP LORT program requirements (i.e., Procedure NTP-TQS-102) were recently revised to make the use of direct look-up style questions to be an unacceptable practice in the annual/biennial exams. The inspectors reviewed the two written biennial examinations (static simulator and classroom portions) prepared by the facility and administered the week of the inspection, as well a randomly-selected examination given to an operating crew on a previous week and concluded the exams were challenging and met the guidelines established in the examiner standards and the inspection procedure. The inspectors placed particular emphasis on determining whether the questions were the appropriate level of difficulty (i.e., not direct look-up questions).

The job performance measures (JPMs) reviewed met the qualitative guidelines of the 10 CFR 55 and the Examiner Standards. The sample of JPMs reviewed included the JPMs being administered during the inspection week as well as a set of JPMs given previously to a randomly-selected crew. A comparison was also made between JPM sets to ensure a consistent level of difficulty. The inspectors concluded that the JPMs sets were relatively consistent in their level of difficulty and that the level of difficulty was appropriate. The JPMs were found to be tied to a valid task in the facility Job Task Analysis. In one case, the JPM to recharge nitrogen to a hydraulic control unit was a task that was not included in the recent requalification training cycle. The inspectors noted that several candidates had difficulty finding the required equipment and completing the task in the expected time frame. This may have been due to the lack of continuing training on this task and was pointed out to the NMP operations training manager, who acknowledged the performance of the operators indicated a need for more training in this area. Although no SRO-specific JPMs were included in the current exam cycle, three SRO JPMs were developed and added to the bank since last year's inspection and NMP2 was planning to add more in the near future. Adding SRO-specific JPMs to the bank enables the use of such JPMs in exams, a potentially desirable objective.

The inspectors concluded that the simulator scenarios were challenging and met the guidelines established in the Examiner Standards. The inspectors reviewed the five simulator scenarios written by the facility and administered during the week of the inspection, as well as the scenario set previously administered to a randomly-selected operating crew. The quantitative and qualitative guidelines described in the Examiner Standards and in Inspection Procedure 71001, Appendix A, for a good scenario were present in the scenarios reviewed. The five scenarios that were observed functioned well. Scenario objectives were clearly defined. Crew critical tasks were well developed and met the criteria described in the Examiner Standards. Various EOPs (emergency operating procedures) and technical specifications were used during the exam scenarios.

The inspectors reviewed the two sample plans developed for the examinations administered during the week of the inspection and concluded the sample plans were appropriately detailed and indicated that the exams administered contained an appropriate sampling of the material taught throughout the two-year cycle. Each sample plan contained a list of all topics covered in the training program for the current two-year cycle, and the corresponding amount of training time spent on each topic. The written exam questions, simulator scenarios, and JPMs administered were also reflected on the sample plans. A percentage of topics not covered during the current cycle was also covered on the examination. The inspector's review of the sample plan indicated that the exam material selected provided an appropriate sampling of the material taught throughout the two-year training cycle and the operating exams required an appropriate use of normal, abnormal, and emergency procedures.

## 4.0 EXAMINATION ADMINISTRATION

### 4.1 Test Implementation

The inspectors observed the administration of the operating and written requalification examinations at Nine Mile Point Unit 2 and determined that, in general, the examinations were effectively administered. However, the NRC inspectors identified one instance where Niagara Mohawk did not adequately document weaknesses identified during the administration of the dynamic simulator portion of the examination.

The week of the inspection, the inspectors observed NMP2 administer unique examinations to one operating crew and one staff crew. Each examination included a group of two or three simulator scenarios, a set of five JPMs and a written examination consisting of a static simulator and a classroom portion.

The evaluations were generally thorough, independent and objective in identifying crew and individual weaknesses. The NMP2 staff used good techniques in administering and evaluating the examinations.

The NRC inspectors generally agreed with the facility evaluators' assessments. However, the NRC inspectors identified one instance where Niagara Mohawk did not adequately document a procedure weakness and an operator deficiency in implementing drywell sprays during a large break LOCA. Apparently, it had been the practice to evaluate each individual on only one scenario in the set

administered to the crew (i.e., in this case one out of three scenarios) and the RO (reactor operator) in question was not given an individual evaluation on this scenario. The evaluators had attempted to capture the weaknesses on the crew evaluation, but the inspectors pointed out that the assessment was a little vague and incomplete and failed to document the weaknesses demonstrated by the individual operator on his individual evaluation. The inspectors were concerned about the potential for missed opportunities to document and remediate individual weaknesses.

The general manager of operations training concluded that this was an opportunity for enhancement in assessing/documenting individual operator performance and stated that he planned to enhance individual operator evaluations on the annual operating exam to provide a comprehensive evaluation of individual operator performance on all scenarios administered during the exam. In addition, the program administrative procedure in this area was addressed by initiating a procedure change request.

### 4.2 Examination Security and Validity

The inspectors reviewed the exam security measures taken by the facility and concluded programmatic controls were satisfactory with no indications of examination compromise. However, one example was identified where program guidelines for usage of annual operating exam scenarios was not followed. Specifically, "E" crew was administered two scenarios, one of which was seen earlier by "B" crew and Staff Crew 2. Thus, "E" crew saw only a 50% vice 60% minimum new exam material as required by the program guidelines established. Exam security measures also included varying the scenarios used and keeping the scenario examination bank out of circulation and not available to operators.

## 5.0 OPERATOR PERFORMANCE

The inspectors observed one operating crew and one staff crew during the week of the inspection. In general, the crews observed performed well.

Performance on the dynamic simulator scenarios was in most cases good. However, one crew failed to promptly execute the EOPs and was judged as unsatisfactory by the facility. Remediation of the crew will be accomplished prior to returning to licensed duties.

Written examination performance was good with no failures observed during the inspection and with only two failures for the entire exam cycle.

One operator failed a single JPM during the week of the inspection, which will require remediation. During JPMs as well as scenarios, extensive self check was used and was in most cases effective. However, JPM performance on one JPM (i.e., recharging nitrogen to a hydraulic control unit) demonstrated some weaknesses in familiarity in locating the tools and procedures to complete the task, indicating a possible need for additional training in this area (this was discussed in more detail in Section 3.0 above). Based on the large number of JPMs observed, operator performance in this area was good.

## 6.0 MAINTENANCE AND ACTIVATION OF OPERATOR LICENSES

### 6.1 Programmatic Controls

The inspectors reviewed Niagara Mohawk's programmatic controls for maintaining an active license and for reactivating an inactive license to active status while meeting the requirements of 10 CFR 55.53. Facility procedures, NTP-TQS-102, "License Operator Requalification Training," Section 3.14, and N2-ODP-TQS-0101 describe the program. These procedures provided clear guidance and good programmatic controls for meeting the requirements of 10 CFR 55.53.

Various training attendance records, operations records, and medical records were reviewed. In addition, records were reviewed for two individuals who reactivated their licenses in the past year; no weaknesses were identified. The inspectors concluded Niagara Mohawk's controls for maintenance and reactivation of operator licenses were good.

### 6.2 Medical Records

The inspectors reviewed a sample of ten licensed operator medical files to ensure that medical examinations were being conducted biennially. The inspectors determined that physical examinations were performed biennially as required by 10 CFR 55.21 with no identified weaknesses.

## 7.0 LICENSEE ACTION ON PREVIOUS INSPECTION FINDINGS

### 7.1 (Closed) (URI 50-220/95-15-01): Weak Objectives and Standards for Unit 1 Requalification Program

This unresolved item concerned weak NMP1 program objectives and standards, combined with examples of practices inconsistent with stated objectives and standards. The inspectors reviewed actions taken to address these inspection report concerns discussed in Niagara Mohawk Deviation/Event (DER) Report 1-95-2013 and concluded that the issuance of NMPC Examination Standard, OTG-01 and the revision to Nuclear Training Procedure, NTP-TQS-102, Revision 4, "Licensed Operator Requalification Training" properly addressed the concerns identified. For example, these procedures provided detailed guidelines for examination development and administration, such as critical task standards, criteria and usage as well as sample plan requirements. Although this was a Unit 1 unresolved item, the inspectors noted consistent application of these new standards and practices in the development and administration of the Unit 2 requalification examination during this inspection. The inspectors concluded all corrective actions are completed. This item is closed.

## 8.0 EXIT MEETING

An exit meeting was conducted on December 15, 1995, during which the NRC inspectors reviewed the scope and findings of the inspection. At the exit meeting, Niagara Mohawk personnel acknowledged the inspectors' conclusions and findings. Key Niagara Mohawk personnel contacted during the inspection and attendees at the exit meeting are listed below:

| | |
|---|---|
| M. McCormick | Vice President Nuclear Safety Assessment and Support |
| D. Bosnic | Acting Operations Manager Unit 2 |
| J. Conway | Acting Plant Manager Unit 2 |
| B. Norris | NRC Senior Resident Inspector |
| D. Pettit | Requalification Coordinator Unit 2 |
| R. Slade | General Supervisor Operations Training |
| R. Tessier | Manager Training Nuclear |
| J. Toothaker | Operations Specialist |

All the above personnel attended the exit meeting.

HANDOUTS FROM THE

NOVEMBER 27, 1995

MEETING BETWEEN

NMPC AND NRC

HANDOUTS FROM THE

NOVEMBER 27, 1995

MEETING BETWEEN

NMPC AND NRC

*NIAGARA MOHAWK POWER CORPORATION*

# NINE MILE POINT NUCLEAR STATION

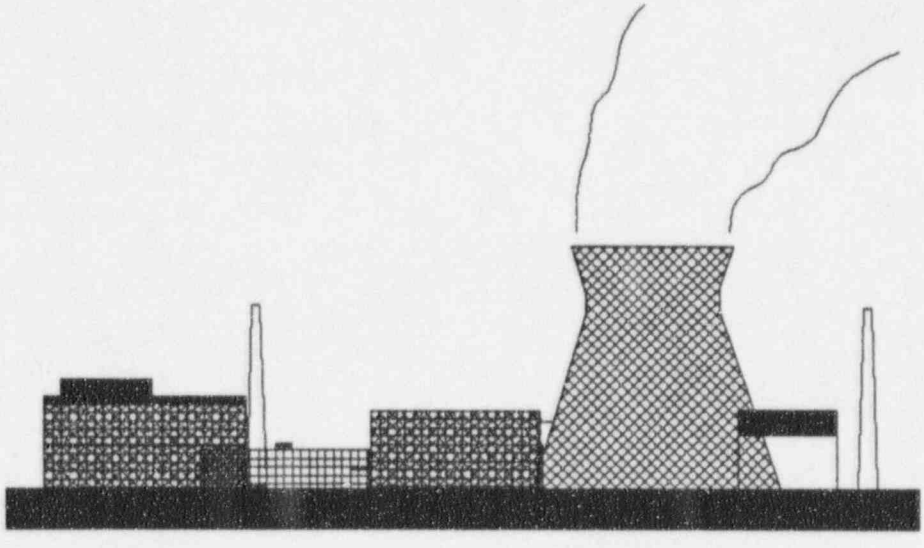
## UNITS 1 AND 2

NIAGARA MOHAWK

## NRC - NMPC

## SENIOR MANAGEMENT MEETING

## NOVEMBER 27, 1995



# NRC - NMPC

# SENIOR MANAGEMENT MEETING

# NOVEMBER 27, 1995

# AGENDA

*Introduction* . . . . . *B. R. Sylvia*

*Niagara Mohawk Restructuring* . . . . . *B. R. Sylvia*

*Nine Mile Point Organization* . . . . . *R. B. Abbott*

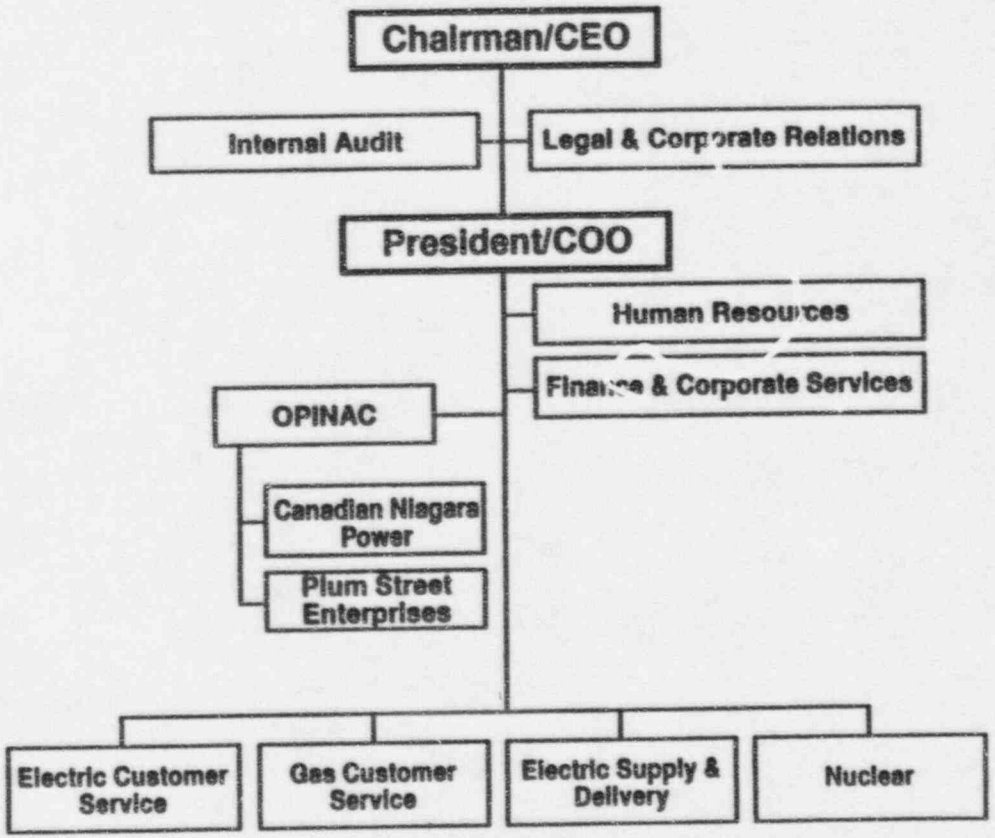
*Business Plans* . . . . . *B. R. Sylvia*

*Human Performance* . . . . . *R. B. Abbott*

*Engineering* . . . . . *C. D. Terry*

*Safety Assessment and Support* . . . . . *M. J. McCormick, Jr.*

# Niagara Mohawk
## Today *



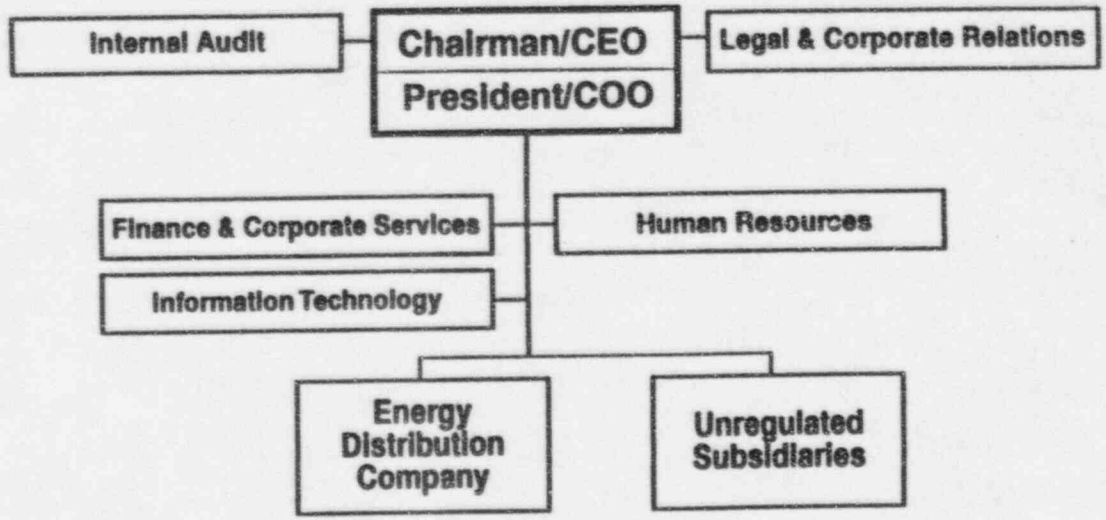

*CORPORATE SUPPORT UNITS*

*STRATEGIC BUSINESS UNITS*

* October 6, 1995

# Holding Company

## End State

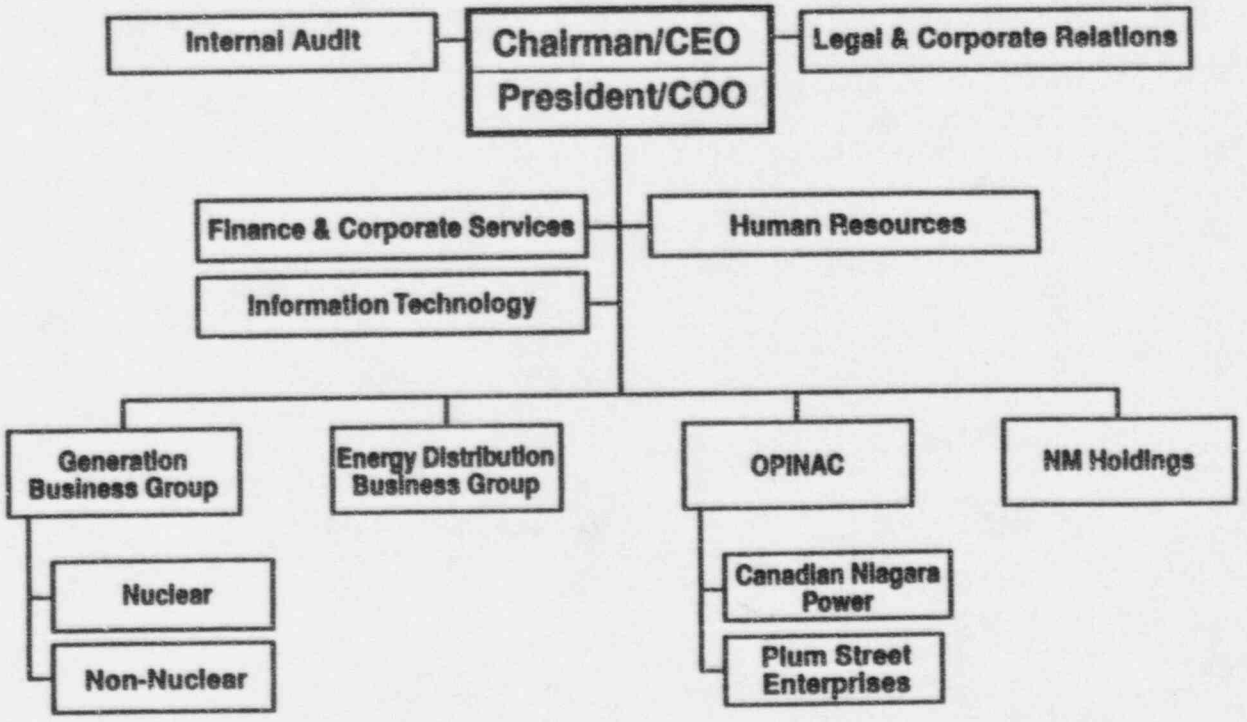



***SEPARATE ENTITIES***

| Generation | Independent System Operator | Power Exchange |
|---|---|---|

# Niagara Mohawk

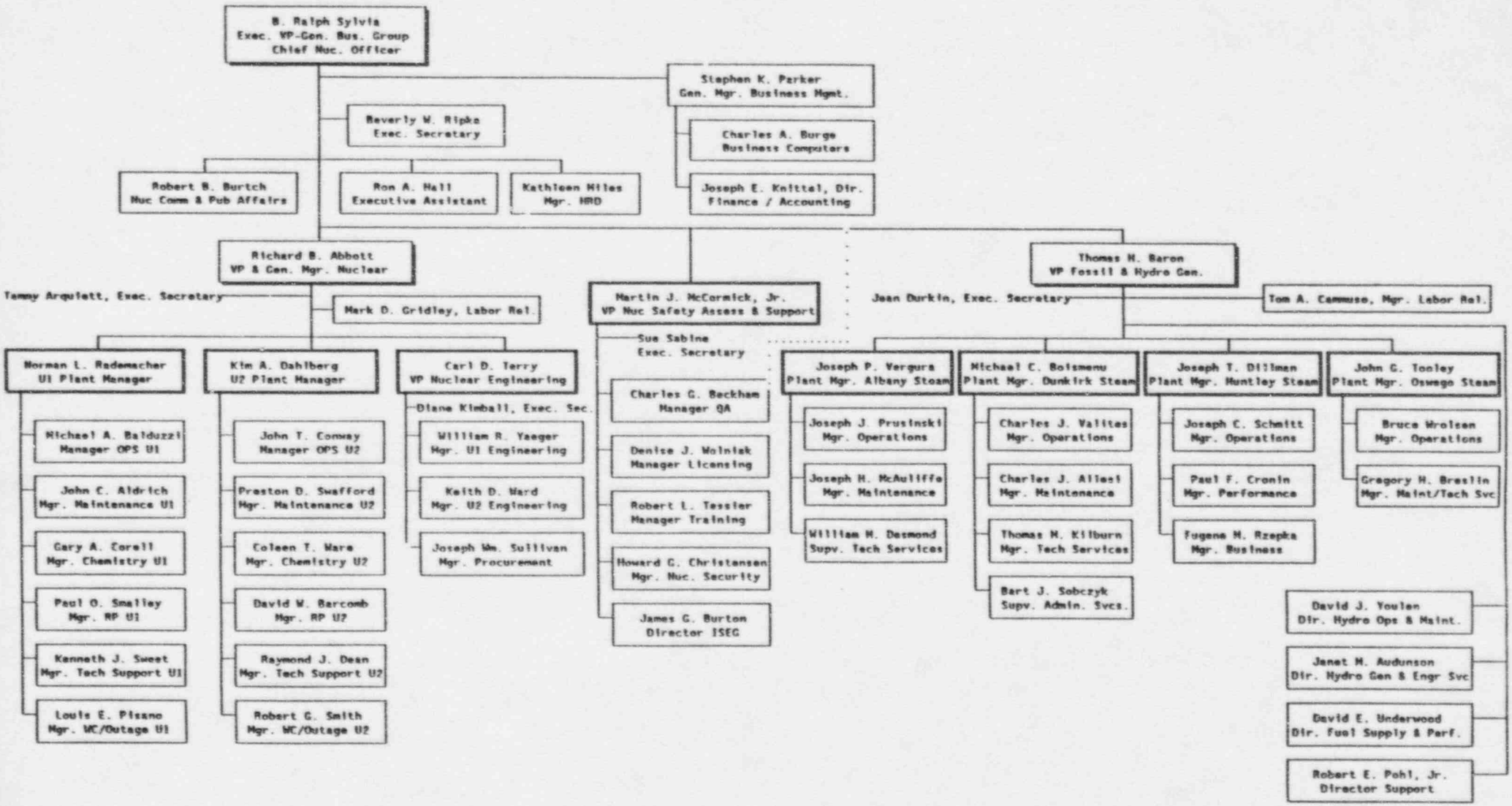
## Interim Structure



NIAGARA MOHAWK

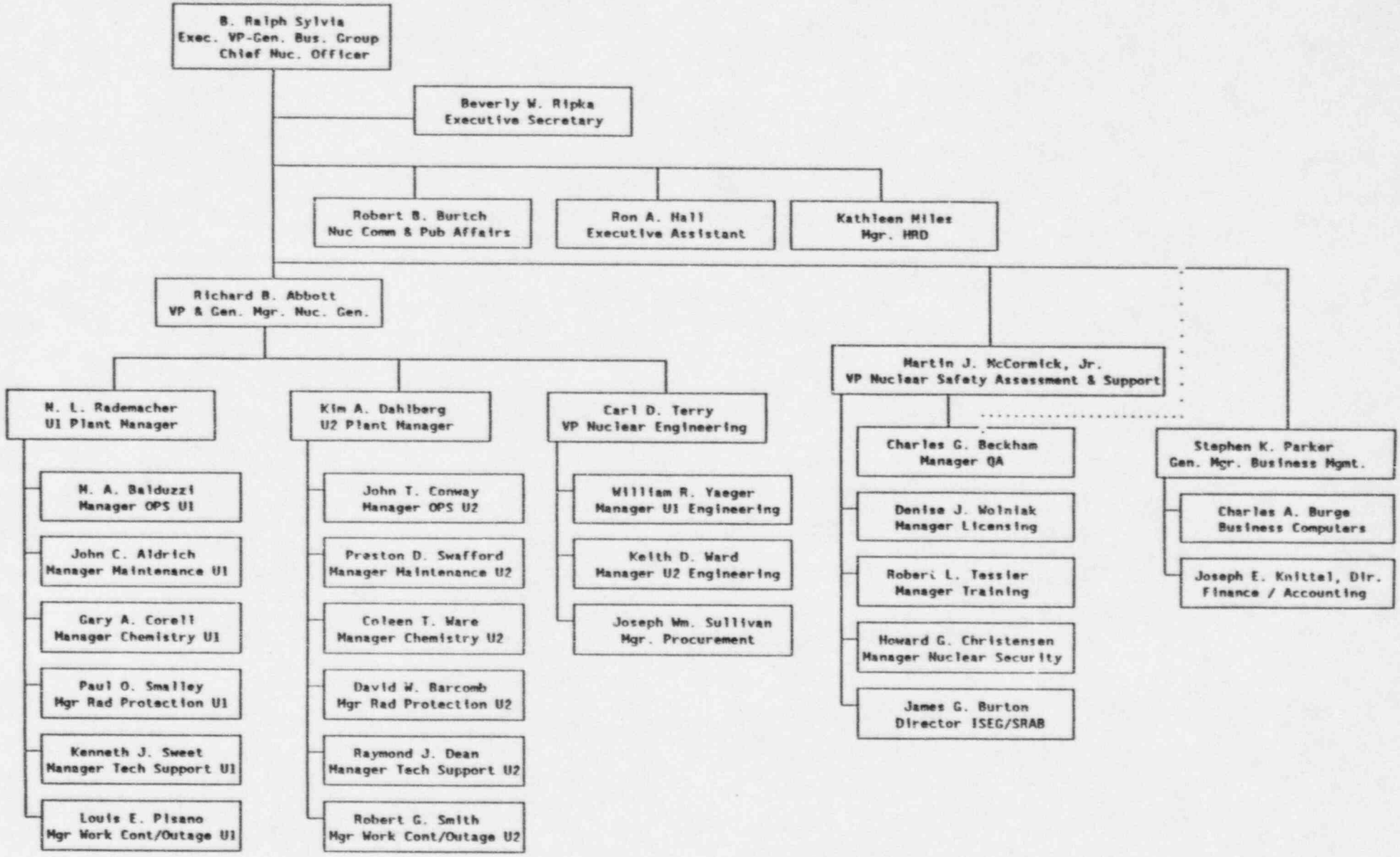
# GENERATION BUSINESS GROUP

[To be implemented]



NIAGARA MOHAWK

# NM-NUCLEAR



*HUMAN PERFORMANCE*

# DAYS OF CONTINUOUS EVENT-FREE GENERATION

## Criteria Categories for Resetting Clock

Events/Deviations Caused or Complicated by Human Error

- *Plant Transients*
- *Improper System Operation*
- *Equipment Damage*
- *Regulatory*
- *Work Plans and Procedures*
- *Environmental*
- *Radiological*
- *Personnel Safety*
- *Knowledge and Training*
- *Other*
  - *Non-Conservative Decision Making*
  - *Inadequate Control of Vendor Personnel*
  - *Branch/Plant Manager Determination*

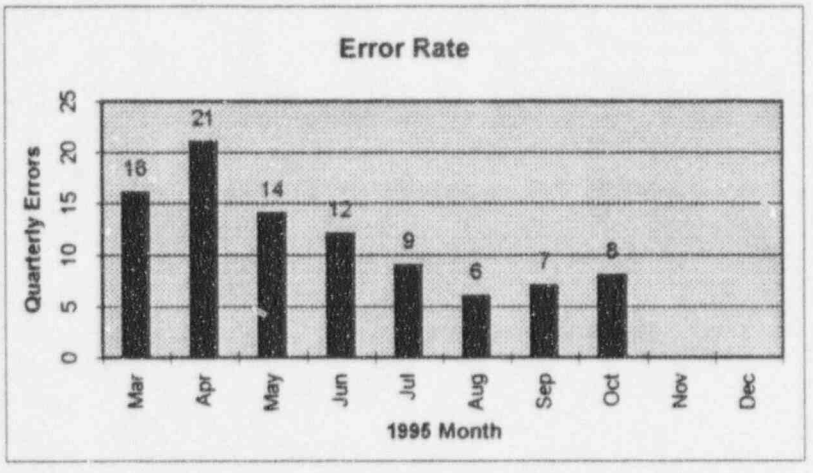
# *HUMAN PERFORMANCE INDEX CHARTS*

## *(UNIT 1)*

# OPERATIONS HUMAN PERFORMANCE INDICATORS

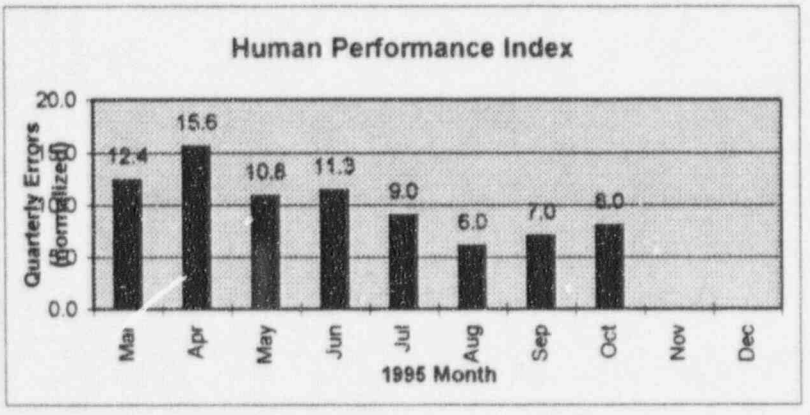
| | MONTH | Errors | OT Rate | # weeks at OT Rate | Hours | Quarterly Totals Errors | Quarterly Totals HP Index |
|---|---|---|---|---|---|---|---|
| 1995 DATA | Jan | 0 | 0 | 0 | 15000 | n/a | n/a |
| | Feb | 10 | 0.7 | 1 | 17625 | n/a | n/a |
| | Mar | 6 | 0.7 | 4 | 25500 | 16 | 12.4 |
| | Apr | 5 | 0.7 | 1 | 17625 | 21 | 15.6 |
| | May | 3 | 0 | 0 | 15000 | 14 | 10.8 |
| | Jun | 4 | 0 | 0 | 15000 | 12 | 11.3 |
| | Jul | 2 | 0 | 0 | 15000 | 9 | 9.0 |
| | Aug | 0 | 0 | 0 | 15000 | 6 | 6.0 |
| | Sep | 5 | 0 | 0 | 15000 | 7 | 7.0 |
| | Oct | 3 | 0 | 0 | 15000 | 8 | 8.0 |
| | Nov | | | | | | |
| | Dec | | | | | | |

NOTE: *OT Rate* addresses incremental hours worked above baseline overtime during periods of high overtime (such as outages).




**Windows:**

Green: <10
Blue: 10-14
Yellow: 15-19
Red: >19



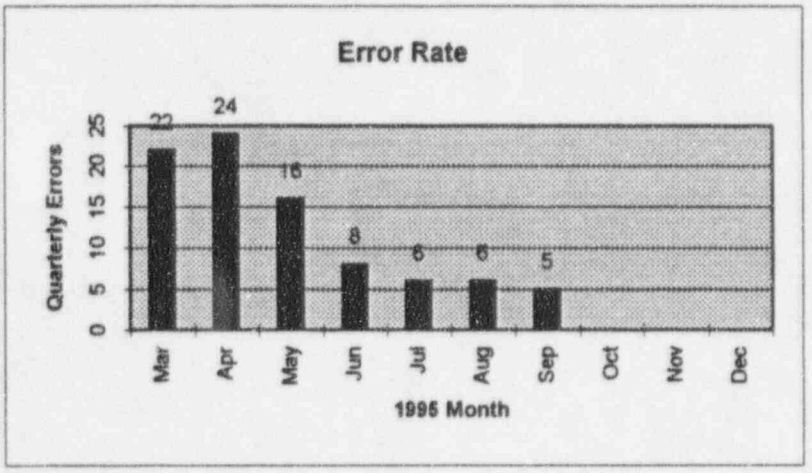

**Windows:**

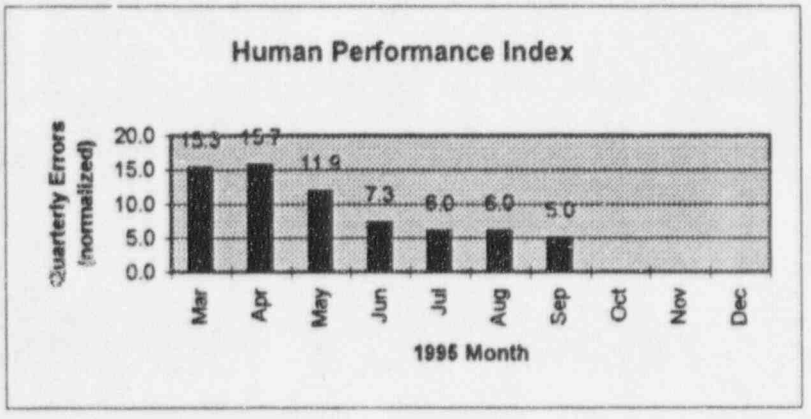
Green: <10.0
Blue: 10.0-14.0
Yellow: 14.0-19.0
Red: >19.0

# MAINTENANCE HUMAN PERFORMANCE INDICATORS

| | MONTH | Errors | OT Rate | # weeks at OT Rate | Hours | Quarterly Totals | |
|---|---|---|---|---|---|---|---|
| | | | | | | Errors | HP Index |
| 1995 DATA | Jan | 4 | 0 | 0 | 13840 | n/a | n/a |
| | Feb | 9 | 0.75 | 3 | 21625 | n/a | n/a |
| | Mar | 9 | 0.75 | 4 | 24220 | 22 | 15.3 |
| | Apr | 6 | 0.75 | 1.5 | 17733 | 24 | 15.7 |
| | May | 1 | 0 | 0 | 13840 | 16 | 11.9 |
| | Jun | 1 | 0 | 0 | 13840 | 8 | 7.3 |
| | Jul | 4 | 0 | 0 | 13840 | 6 | 6.0 |
| | Aug | 1 | 0 | 0 | 13840 | 6 | 6.0 |
| | Sep | 0 | 0 | 0 | 13840 | 5 | 5.0 |
| | Oct | | | | | | |
| | Nov | | | | | | |
| | Dec | | | | | | |

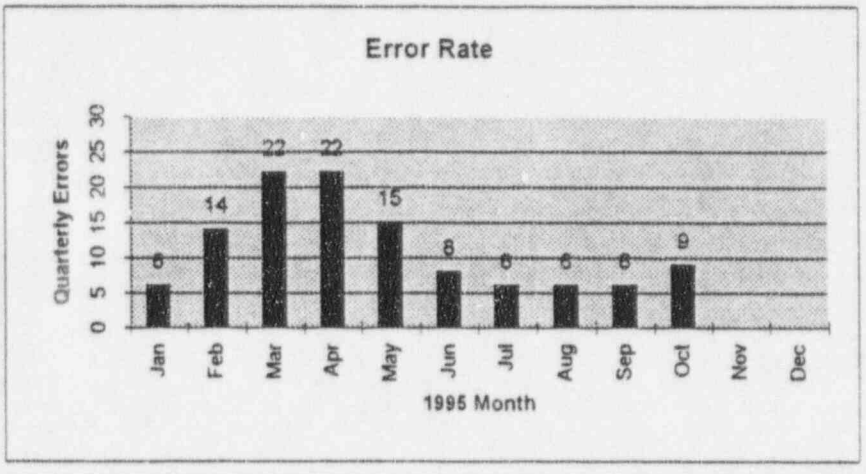
NOTE: *OT Rate* addresses incremental hours worked above baseline overtime during periods of high overtime (such as outages).

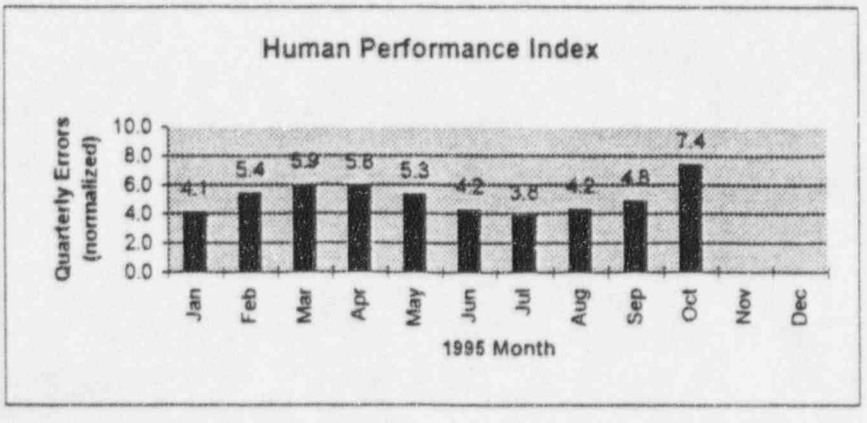


# RADIATION PROTECTION UNIT 1
# HUMAN PERFORMANCE INDICATORS
## 1995 DATA

| MONTH | Errors | Hours | Quarterly Totals | |
|---|---|---|---|---|
| | | | Errors | HP Index |
| Nov '94 | 0 | 7440 | n/a | n/a |
| Dec '94 | 2 | 7680 | n/a | n/a |
| Jan | 4 | 11512 | 6 | 4.1 |
| Feb | 8 | 27809 | 14 | 5.4 |
| Mar | 10 | 27343 | 22 | 5.9 |
| Apr | 4 | 12641 | 22 | 5.8 |
| May | 1 | 11311 | 15 | 5.3 |
| Jun | 3 | 10323 | 8 | 4.2 |
| Jul | 2 | 6931 | 6 | 3.8 |
| Aug | 1 | 8272 | 6 | 4.2 |
| Sep | 3 | 7172 | 6 | 4.8 |
| Oct | 5 | 6538 | 9 | 7.4 |
| Nov | | | | |
| Dec | | | | |



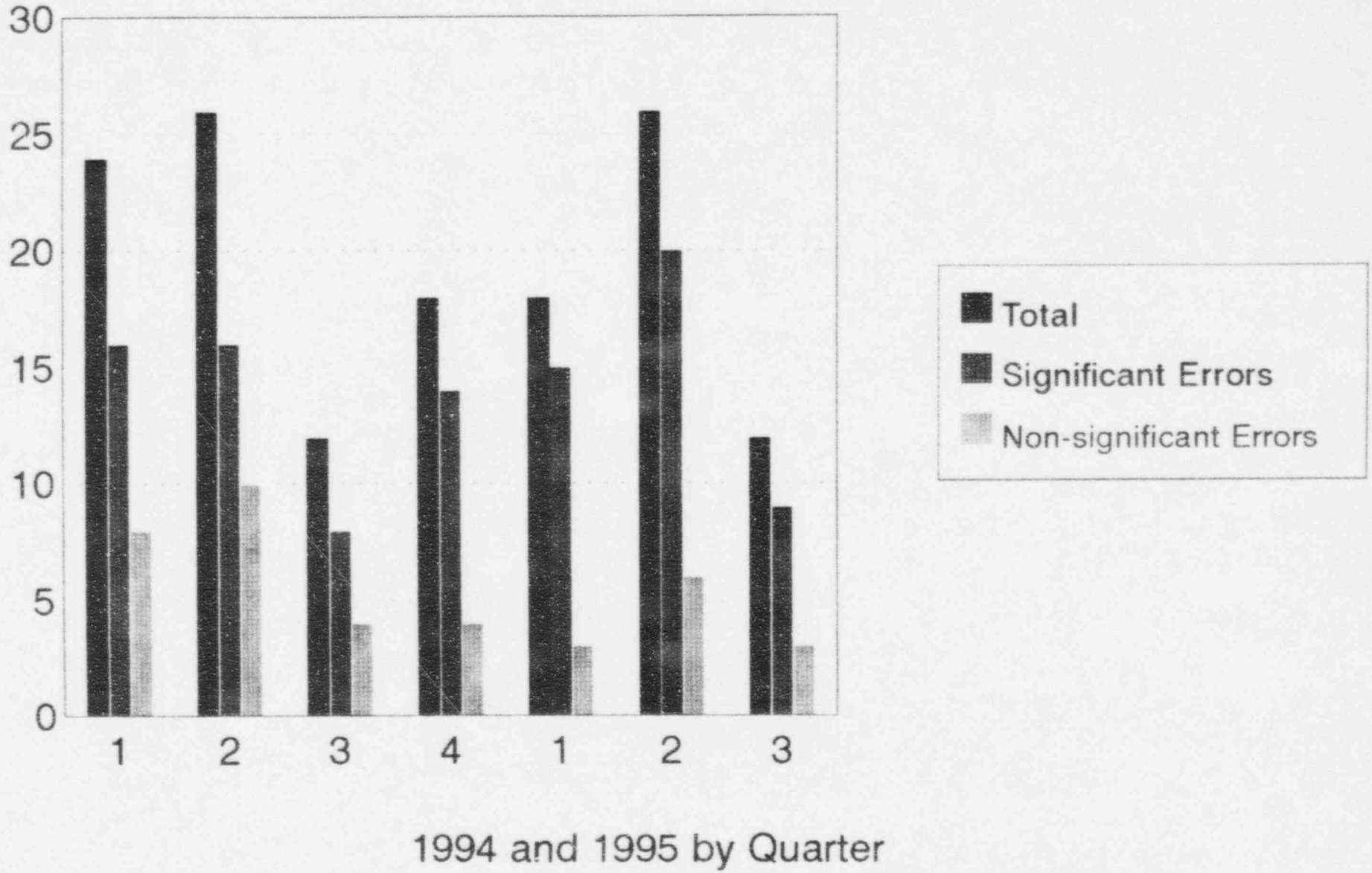
*HUMAN PERFORMANCE*

*DER TRENDING*

*(UNIT 2)*

# UNIT 2 OPERATIONS

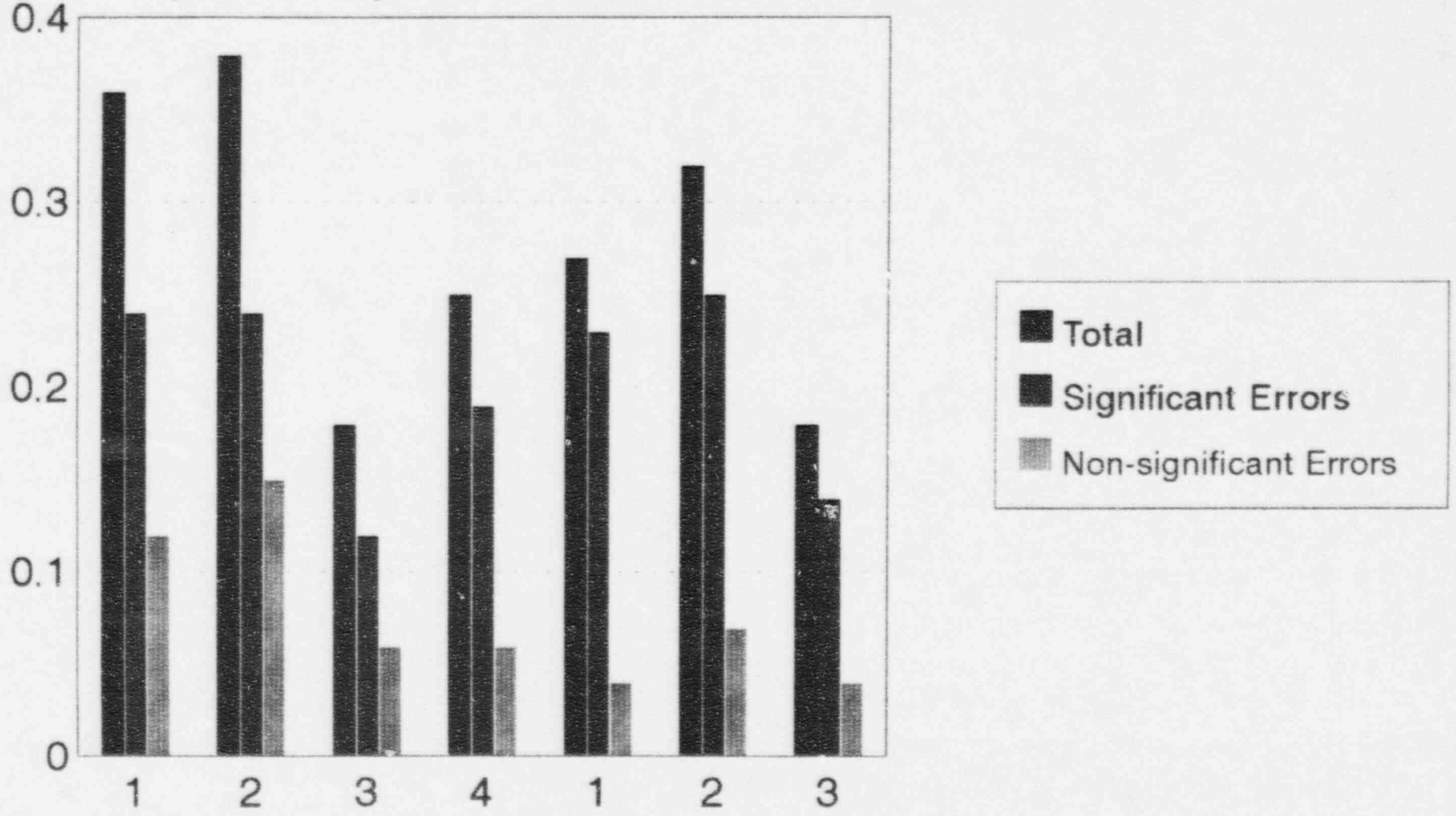
## Human Performance DERs



# UNIT 2 OPERATIONS

## Human Performance Error Rate

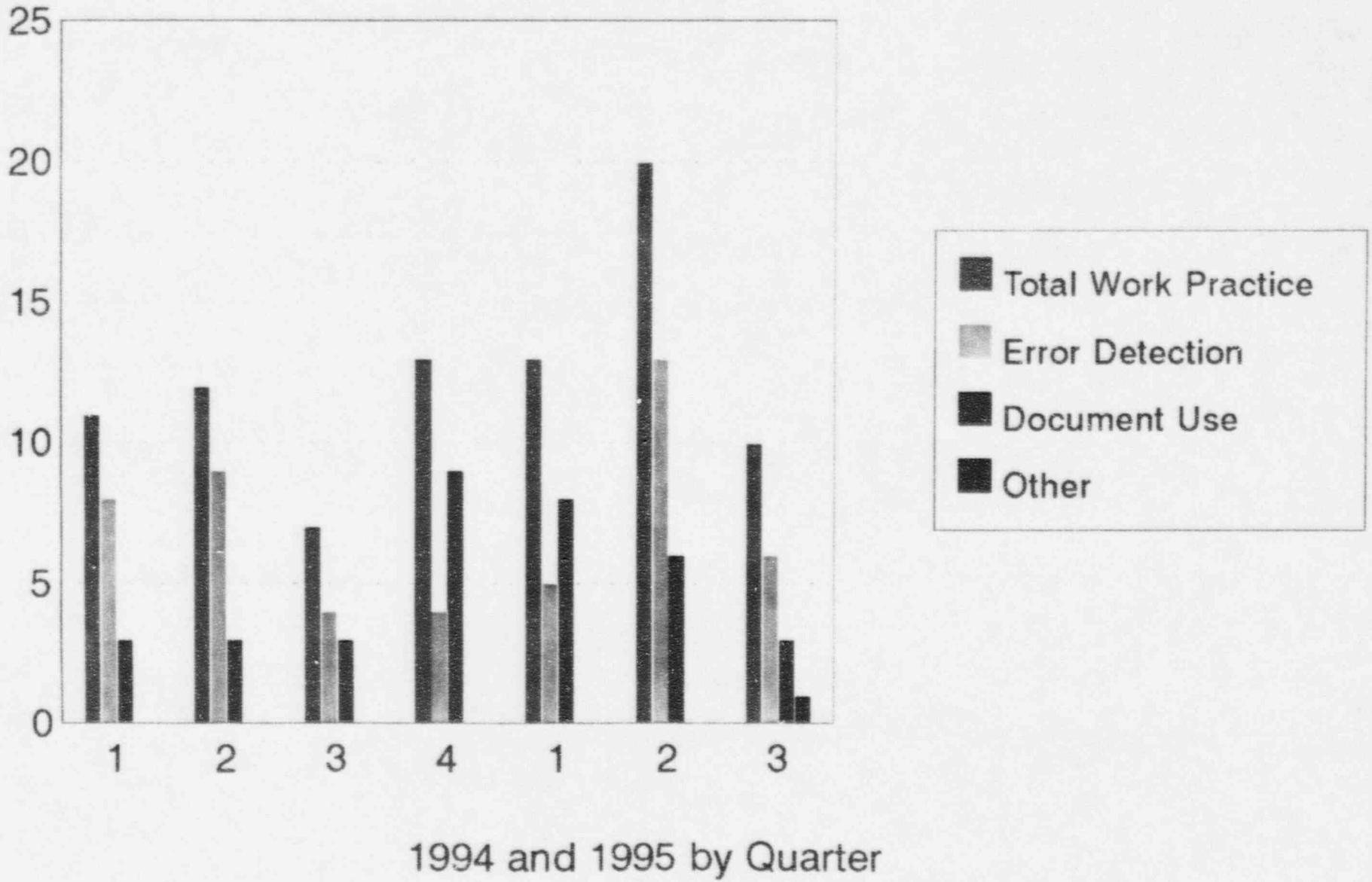
(Errors per 1,000 man-hours worked)




1994 and 1995 by Quarter

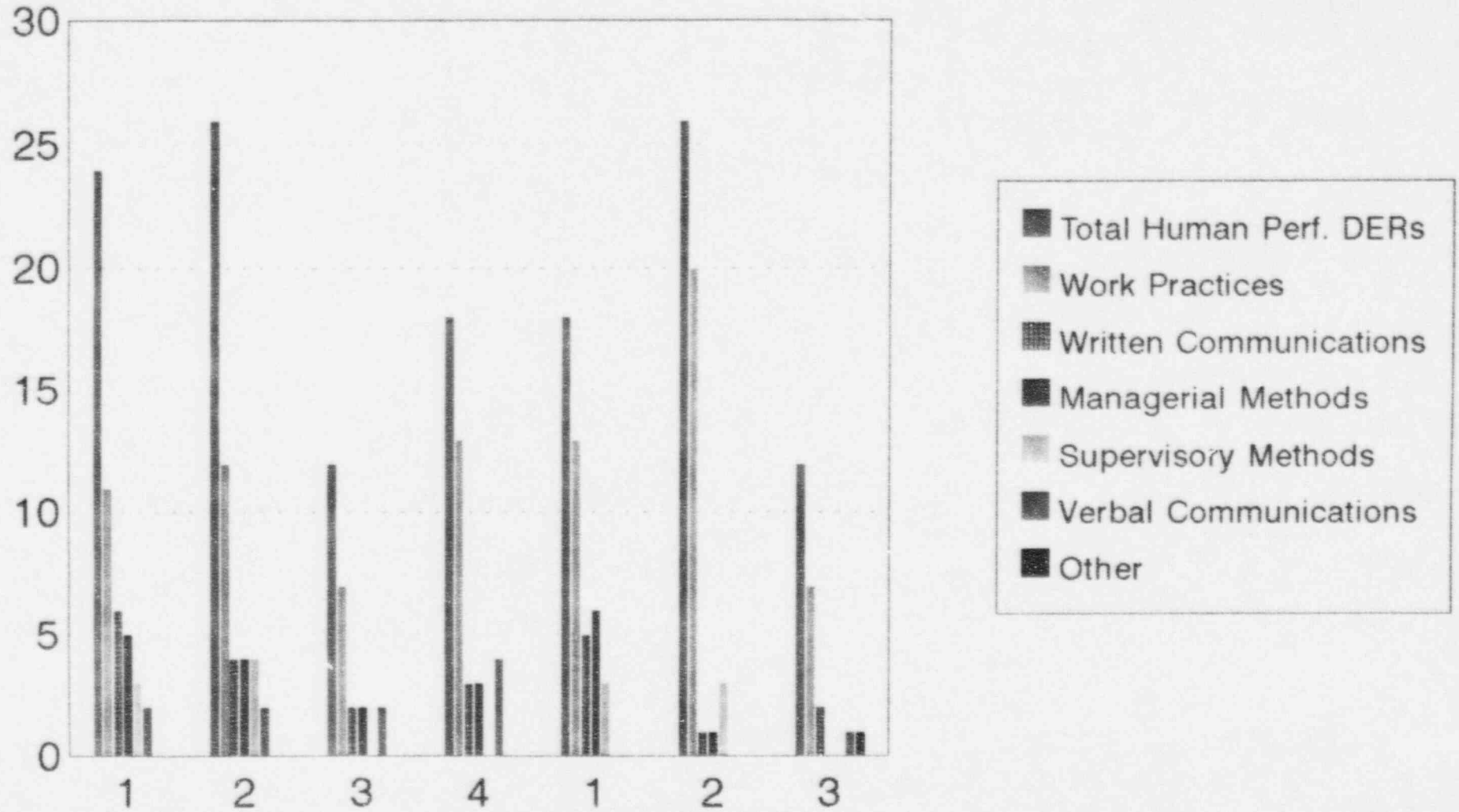
# UNIT 2 OPERATIONS

## Work Practice Causal Factors



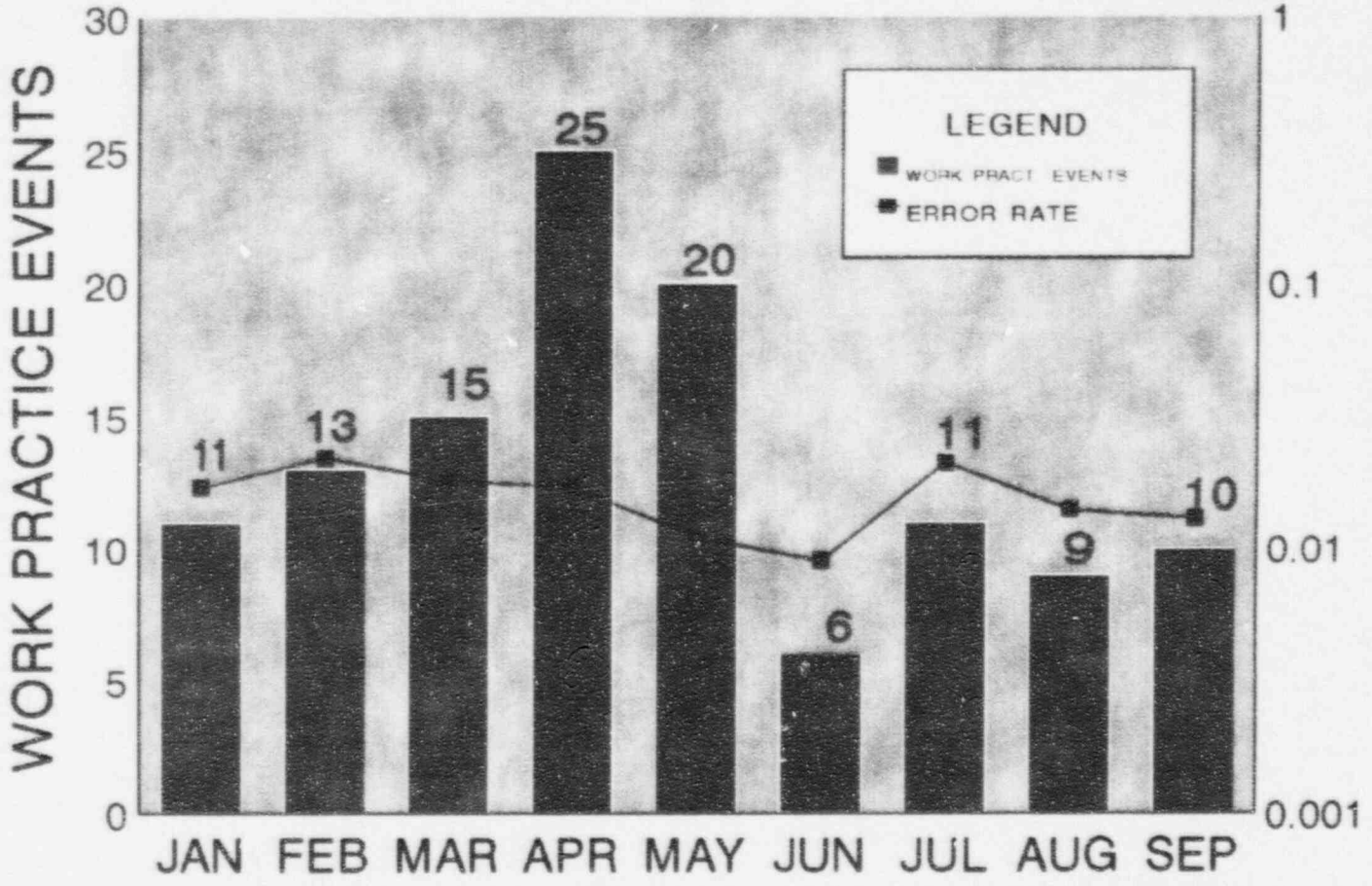
# UNIT 2 OPERATIONS

## Human Performance Trends



# WORK PRACTICE CODE OCCURANCES/WO/MONTH

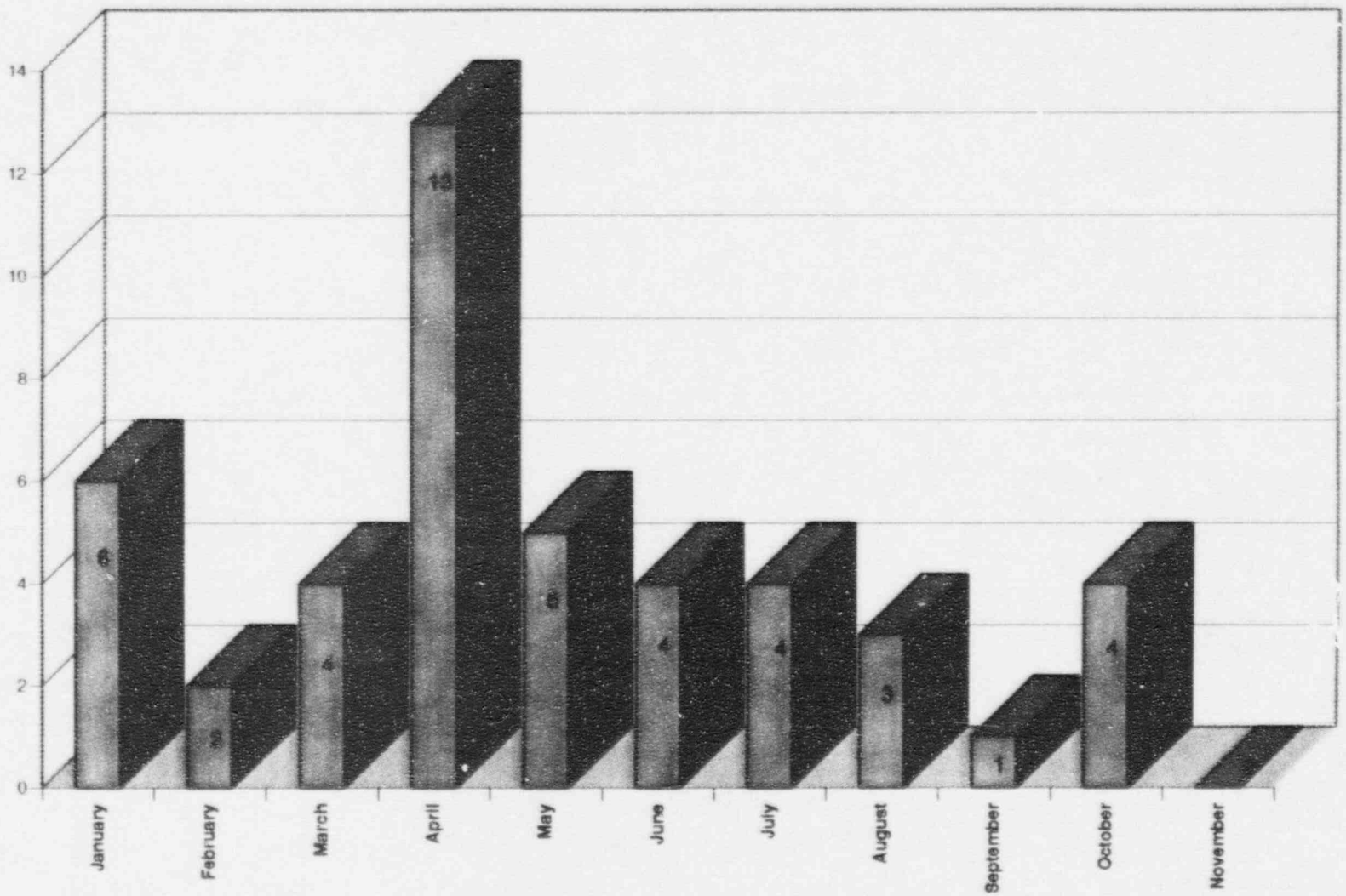
## MAINTENANCE UNIT#2 1995




| WORK PRACT. EVENTS | 11 | 13 | 15 | 25 | 20 | 6 | 11 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| WOs COMPLETED | 654 | 605 | 818 | 1,494 | 1,878 | 661 | 536 | 628 | 754 |
| ERROR RATE | 0.017 | 0.022 | 0.018 | 0.017 | 0.011 | 0.009 | 0.021 | 0.014 | 0.013 |

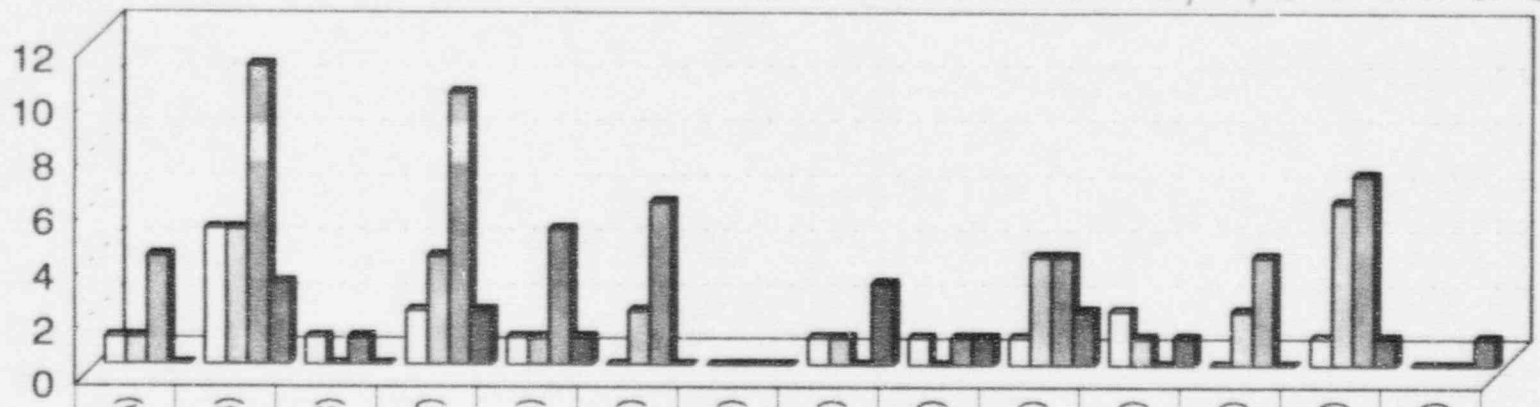
HUMPERF7
PRESENTED ON NOV 22, 1995

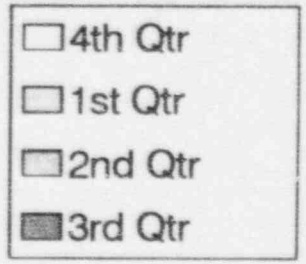
# 1995 RP Human Performance DER's



# Technical Support DERs

## Causal Factor Trend Chart from 10/1/94 thru 9/30/95



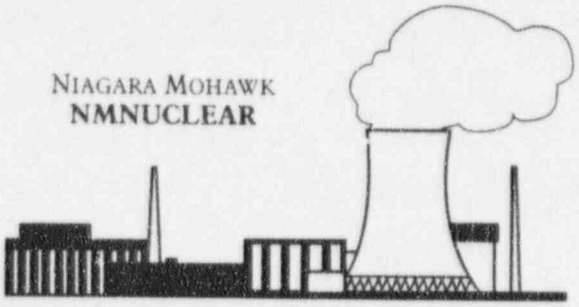




| | Verbal Communication (A) | Written Communication (B) | Interface Design/Equipment Condtion (C) | Work Practice (F) | Work Organization/Planning (G) | Supervisory Method (H) | Training/Qualification (I) | Change Management (J) | Resource Management (K) | Managerial Method (L) | Design Configuration & Analysis (M) | Maintenance/Testing (O) | Plant/System Operation (P) | External (Q) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4th Qtr | 1 | 5 | 1 | 2 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 0 | 1 | 0 |
| 1st Qtr | 1 | 5 | 0 | 4 | 1 | 2 | 0 | 1 | 0 | 4 | 1 | 2 | 6 | 0 |
| 2nd Qtr | 4 | 11 | 1 | 10 | 5 | 6 | 0 | 0 | 1 | 4 | 0 | 4 | 7 | 0 |
| 3rd Qtr | 0 | 3 | 0 | 2 | 1 | 0 | 0 | 3 | 1 | 2 | 1 | 0 | 1 | 1 |

derchart.rd1

# Nuclear SBU

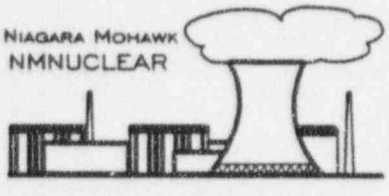
## Performance Monitoring Executive Report




## OCTOBER 1995

# NUCLEAR SBU

# Performance Monitoring - Executive Report




## OCTOBER 1995

# CONTENTS

Commercial Performance (continued)



Professional Performance



REGULATORY ACTIVITIES

# EXECUTIVE SUMMARY
# OCTOBER 1995
# UNIT 1

## GENERATION

Net generation was 452,099 Mwhrs for the month. Net generation for this month is the best ever for October and our 12th best month ever for life of the plant. Average net capacity factor was 99.8% (107.4% using MDC). The plant availability factor was 100%. The average net capacity factor for the fuel cycle is 97.4%. Capacity factor losses were due to the following. On October 14, power was reduced for a control rod sequence change. Other reductions were due to control rod pattern adjustments.

## FINANCIAL

Nuclear Production Operating and Maintenance preliminary expenditures were $3.7 million for non-outage. Non-outage expenditures were $0.7 million under monthly target. The preliminary capital expenditures were $0.2 million.

## TOTAL REVENUE REQUIRED

Total revenue required was 3.69¢/KWhr for the month; 5.55¢ year-to-date.

***Cents per KWh will be revised after an assessment of cost of capital and federal income taxes. The cost of capital for both units will be recalculated to recognize the cost of debt for low cost NYSERDA pollution control bonds. This will especially affect NMP2's ¢/KWhr. Federal income taxes are also being recalculated. The results of this assessment will be reviewed with Senior Management and the plant managers for their approval.***

## PRODUCTION O&M AND FUEL

Cost/KWhr was 1.41¢ for the month.

## REPORTABLE EVENTS (LERs)

There were no reportable events.

## NRC VIOLATIONS

There were no Notices of Violations.

## COLLECTIVE RADIATION EXPOSURE

Collective radiation exposure was 3.14 Manrem while the target was 4.0 Manrem. The cumulative target through October was 348 Manrem while the cumulative actual year-to-date was 351.87 Manrem. The 1995 target is 356 Manrem or less.

## INDUSTRIAL SAFETY

There were no reportable OSHA lost work day cases in October. As of October 31, Unit 1 employees have worked 1,379,211 hours or 679 days without a lost time accident.

# EXECUTIVE SUMMARY
# OCTOBER 1995
# UNIT 2

## GENERATION

Net generation was 845,302 Mwhrs for the month. Average net capacity factor was 99.9% (102% using MDC). The plant availability factor was 100%. Sources of capacity loss included power reductions for scheduled power uprate testing, feedwater flow measurement inaccuracies and increased ambient restrictions.

## FINANCIAL

Nuclear Production Operating and Maintenance preliminary expenditures were $5.2 million for non-outage. Non-outage expenditures were $1.2 million under nonthly target. The preliminary capital expenditures were $0.7 million.

## TOTAL REVENUE REQUIRED

Total revenue required was 6.15¢/KWhr for the month; 9.97¢ year-to-date.

## PRODUCTION O&M AND FUEL

Cost/KWhr was 1.15¢ for the month.

***Cents per KWh will be revised after an assessment of cost of capital and federal income taxes. The cost of capital for both units will be recalculated to recognize the cost of debt for low cost NYSERDA pollution control bonds. This will especially affect NMP2's ¢/KWhr. Federal income taxes are also being recalculated. The results of this assessment will be reviewed with Senior Management and the plant managers for their approval.***

## REPORTABLE EVENTS (LERs)

There were no reportable events.

## NRC VIOLATIONS

There were no Notices of Violation.

## COLLECTIVE RADIATION EXPOSURE

Collective radiation exposure was 3.48 Manrem while the target was 5.7 Manrem. The cumulative target through October was 354 Manrem while the cumulative actual year-to-date was 390 Manrem. The 1995 target is 365 Manrem or less.

## INDUSTRIAL SAFETY

There were no reportable OSHA lost work day cases in October. As of October 31, Unit 2 employees have worked 512,937 hours or 159 days without a lost time accident.

## NUCLEAR SBU EXECUTIVE SUMMARY

| NINE MILE POINT UNIT 1 PERFORMANCE INDICATORS | | 1995 PERFORMANCE INDICATORS | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | MONTH OF OCTOBER | | YEAR-TO-DATE | |
| | GRAPH | 1995 TARGET | ACTUAL | TARGET | ACTUAL | TARGET |
| **SAFETY INDICATORS IN NUCLEAR SBU BUSINESS PLAN** | | | | | | |
| 1A. Collective Radiation Exposure (Manrem) # | page 11 | 356 | 3.14 | 4.0 | 351.87 | 348 |
| 1B. Volume of Low-Level Solid Radioactive Waste ($m^3/ft^3$) | page 11 | 130 / 4500 | 5.7 / 201 | 11 / 375 | 94.8 / 3346 | 108 / 3750 |
| 1C. Contamination Occurrence Reports | page 13 | 120 | 2 | 2 | 93 | 116 |
| 1D. Unplanned Radiological Releases | N/A | 0 | 0 | 0 | 0 | 0 |
| 1E. Fuel Reliability ($\mu$Ci/sec) | N/A | 400[1] | 2.38 | 400 | 6.18 | 400 |
| 1F. Unplanned Scrams Per Year # | N/A | 0 | 0 | 0 | 1 | 0 |
| •Unplanned automatic scrams per 7000 hours critical (3 yr avg) | | ≤1.9 | 2.10 | ≤1.9 | 2.10 | ≤1.9 |
| 1G. Safety System Performance (rate) (3 yr avg) | | | | | | |
| •Feedwater coolant injection | N/A | .020 | .005 | N/A | .007 | .020 |
| •Isolation condenser | | .020 | 0 | | .003 | .020 |
| •BWR residual heat removal | | .020 | .067 | | .016 | .020 |
| •Emergency AC power | | .015 | .001 | | .004 | .015 |
| 1H. No. LER's due to missed Tech Spec Surveillance Tests | N/A | 0 | 0 | 0 | 0 | 0 |
| **COMMERCIAL INDICATORS IN NUCLEAR SBU BUSINESS PLAN** | | | | | | |
| 2A. Total Revenue Required per Kwhr (¢) | page 14 | 5.45 | 3.69 | 4.20 | 5.55 | 5.66 |
| 2B. Cost per Kwhr (O&M and fuel) (¢) | page 16 | 2.44 | 1.41 | 1.64 | 2.44 | 2.51 |
| 2C. Total Non-Outage O&M ($ millions) # | page 17 | 55.2 | 3.7 | 4.4 | 39.6 | 42.8 |
| 2D. Total Planned Outage O&M ($ millions) # | page 17 | 24 | 0 | 0 | 23.3 | 24.0 |
| 2E. Total Capital ($ millions) | page 19 | 18 | 0.2 | 1.1 | 11.7 | 12.6 |

#1995 Management Salary Incentive Performance Indicator
N/A - Not Applicable
[1]Following 1995 refueling outage

## NUCLEAR SBU EXECUTIVE SUMMARY

| NINE MILE POINT UNIT 2 PERFORMANCE INDICATORS | | 1995 PERFORMANCE INDICATORS | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | MONTH OF OCTOBER | | YEAR-TO-DATE | |
| | GRAPH | 1995 TARGET | ACTUAL | TARGET | ACTUAL | TARGET |
| **SAFETY INDICATORS IN NUCLEAR SBU BUSINESS PLAN** | | | | | | |
| 1A. Collective Radiation Exposure (Manrem) # | page 12 | 365 | 3.48 | 5.7 | 390 | 354 |
| 1B. Volume of Low-Level Solid Radioactive Waste ($m^3/ft^3$) | page 12 | 135 / 4800 | 11.37 / 40' | 11.25 / 400 | 99.14 / 3499 | 112 / 4000 |
| 1C. Contamination Occurrence Reports | page 13 | 100 | 0 | 3 | 136 | 94 |
| 1D. Unplanned Radiological Releases | N/A | 0 | 0 | 0 | 0 | 0 |
| 1E. Fuel Reliability ($\mu$Ci/sec) | N/A | 50 | 0 | 50 | 0 | 50 |
| 1F. Unplanned Scrams Per Year # | N/A | 1 | 0 | 0 | 0 | 1 |
| •Unplanned automatic scrams per 7000 hours critical (3 yr avg) | | ≤1 | .92 | ≤1 | .92 | ≤1 |
| 1G. Safety System Performance (rate) (3 yr avg) | | | | | | |
| •BWR high pressure core spray[1] | | .005 | 0 | | 0 | .005 |
| •BWR reactor core isolation cooling | N/A | .020 | 0 | N/A | 0 | .020 |
| •BWR residual heat removal | | .020 | .016 | | .007 | .020 |
| •Emergency AC power | | .015 | .015 | | .006 | .015 |
| 1H. No. LER's due to missed Tech Spec Surveillance Tests | N/A | 0 | 0 | 0 | 0 | 0 |
| **COMMERCIAL INDICATORS IN NUCLEAR SBU BUSINESS PLAN** | | | | | | |
| 2A. Total Revenue Required per Kwhr (¢) | page 15 | 9.10 | 6.15 | 7.08 | 9.97 | 9.54 |
| 2B. Cost per Kwhr (O&M and fuel) (¢) | page 16 | 2.04 | 1.15 | 1.41 | 2.18 | 2.12 |
| 2C. Total Non-Outage O&M ($ millions) # | page 18 | 81.5 | 5.2 | 6.4 | 60.4 | 63.7 |
| 2D. Total Planned Outage O&M ($ millions) # | page 18 | 33.0 | 0 | 0 | 31.8 | 33.0 |
| 2E. Total Capital ($ millions) | page 19 | 33.7 | 0.7 | .9 | 18.9 | 20.4 |

[1]The RCIC 3-year rolling average is high because the indicator has been revised per the INPO performance indicator program. The HPCS/RCIC safety system performance indicator is on track to meet the 1995 industry goals maintained by INPO.

#1995 Management Salary Incentive Performance Indicator

N/A - Not Applicable

| NUCLEAR SBU EXECUTIVE SUMMARY | | | | | | | |
|---|---|---|---|---|---|---|---|
| NINE MILE POINT UNIT 1 PERFORMANCE INDICATORS | | 1995 PERFORMANCE INDICATORS | | | | | |
| | | GRAPH | 1995 TARGET | MONTH OF OCTOBER | | YEAR-TO-DATE | |
| | | | | ACTUAL | TARGET | ACTUAL | TARGET |
| **COMMERCIAL INDICATORS IN NUCLEAR SBU BUSINESS PLAN (continued)** | | | | | | | |
| 2F. | Total Overtime Rate (%) | page 20 | 13 | 3.4 | 6.2 | 16.5 | 15.2 |
| 2G. | Average Net Capacity Factor (%) # | page 21 | 80 | 99.8 | 94 | 76.6 | 78 |
| 2H. | Unit Capacity Factor (MDC net)(%) | N/A | 89 | 107.4 | 101 | 82.6 | 85 |
| 2I. | Thermal Performance (%) | page 23 | 99.5 | 99.9 | 99.5 | 99.8 | 99.5 |
| 2J. | Refuel Outage Duration | N/A | 45 | 55 | 45 | 55 | 45 |
| 2K. | Special Reports Submitted | N/A | 7 | 0 | 2 | 5 | 5 |
| 2L. | Total Non-Outage Corrective Maintenance Backlog | page 24 | 450 | 515 | 450 | 515 | 450 |
| 2M. | Non-Outage Corrective Maintenance Control Room Deficiencies >6 weeks old | N/A | 10 | 5 | 10 | 5 | 10 |
| 2N. | Non-Outage Temporary Modifications >1 year old | N/A | 0 | 0 | 0 | 0 | 0 |
| 2O. | Chemistry Performance<br>•Chemistry Index (reactor water)<br>•Reactor Water Conductivity (μ mho/cm) | N/A | <br>0.23<br>0.10 | <br>0.203<br>0.083 | <br>0.23<br>0.10 | <br>0.204<br>0.087 | <br>0.23<br>0.10 |
| **PROFESSIONAL INDICATORS IN NUCLEAR SBU BUSINESS PLAN** | | | | | | | |
| 4A. | No. of Licensee Event Reports (LER's) and Violations Attributable to Personnel Error # | N/A | 5 | 0 | 1 | 3 | 4 |
| **BUSINESS PLAN PERFORMANCE** | | | | | | | |
| Action Item Status Summary (%) | | N/A | 100 | 100 | 100 | 85 | 100 |

#1995 Management Salary Incentive Performance Indicator
N/A - Not Applicable

## NUCLEAR SBU EXECUTIVE SUMMARY

| NINE MILE POINT UNIT 2 PERFORMANCE INDICATORS | | 1995 PERFORMANCE INDICATORS | | | | | |
|---|---|---|---|---|---|---|---|
| | | GRAPH | 1995 TARGET | MONTH OF OCTOBER | | YEAR-TO-DATE | |
| | | | | ACTUAL | TARGET | ACTUAL | TARGET |
| **COMMERCIAL INDICATORS IN NUCLEAR SBU BUSINESS PLAN (continued)** | | | | | | | |
| 2F. | Total Overtime Rate (%) | page 20 | 15 | 4.4 | 6.1 | 18.9 | 18.0 |
| 2G. | Average Net Capacity Factor (%) # | page 22 | 80 | 99.9 | 94 | 69.9 | 77 |
| 2H. | Unit Capacity Factor (MDC net)(%) | N/A | 85 | 102 | 101 | 72.8 | 84 |
| 2I. | Thermal Performance (%) | page 23 | 99.5 | 100 | 99.5 | 99.7 | 99.5 |
| 2J. | Refuel Outage Duration | N/A | 55 | 55 | 55 | 55 | 55 |
| 2K. | Special Reports Submitted | N/A | 2 | 0 | 0 | 4 | 2 |
| 2L. | Total Non-Outage Corrective Maintenance Backlog | page 24 | 750 | 707 | 750 | 707 | 750 |
| 2M. | Non-Outage Corrective Maintenance Control Room Deficiencies >6 weeks old | N/A | 15 | 10 | 15 | 10 | 15 |
| 2N. | Non-Outage Temporary Modifications >1 year old | N/A | 0 | 4 | 2 | 4 | 2 |
| 2O. | Chemistry Performance<br>•Chemistry Index (reactor water)<br>•Reactor Water Conductivity ($\mu$ mho/cm) | N/A | <br>0.27<br>0.11 | <br>0.27<br>0.104 | <br>0.27<br>0.11 | <br>0.23<br>0.101 | <br>0.27<br>0.11 |
| **PROFESSIONAL INDICATORS IN NUCLEAR SBU BUSINESS PLAN** | | | | | | | |
| 4A. | No. of Licensee Event Reports (LER's) and Violations Attributable to Personnel Error # | N/A | 5 | 0 | 1 | 6 | 4 |
| **BUSINESS PLAN PERFORMANCE** | | | | | | | |
| Action Item Status Summary (%) | | N/A | 100 | 100 | 100 | 85 | 100 |

# 1995 Management Salary Incentive Performance Indicator
N/A - Not Applicable

## NUCLEAR SBU EXECUTIVE SUMMARY

| NINE MILE POINT COMMON PERFORMANCE INDICATORS | | 1995 PERFORMANCE INDICATORS | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | MONTH OF OCT. | | YEAR-TO-DATE | |
| | GRAPH | 1995 TARGET | ACTUAL | TARGET | ACTUAL | TARGET |
| **SAFETY INDICATORS IN NUCLEAR SBU BUSINESS PLAN** | | | | | | |
| 1I. Maximum No. of OSHA Recordable Lost Work Day Cases # •NMPC Employees | N/A | 5 | 0 | 1 | 2 | 4 |
| 1J. Maximum No. of OSHA Recordable Incidents # •NMPC Employees | N/A | 50 | 2 | 4 | 18 | 42 |
| 1K. Industrial Safety Accident Rate | N/A | 0.50 | 1.62 | 0.50 | 1.30 | 0.50 |
| **COMMERCIAL INDICATORS IN NUCLEAR SBU BUSINESS PLAN** | | | | | | |
| 2P. Material and Supply Inventory Value ($ millions) # | page 25 | 85 | 79.5 | 85 | 79.5 | 85 |
| 2Q. % of Power Block Work Orders on Hold for Parts or Materials | N/A | 2.5 | 2.99 | 2.5 | 2.99 | 2.5 |
| **REGULATORY INDICATORS IN NUCLEAR SBU BUSINESS PLAN** | | | | | | |
| 3A. Maximum No. of NRC Violations by Date of Discovery: •Levels I, II, III •Levels IV, V | N/A | 0<br>6 | 0<br>0 | 0<br>2 | 0<br>4 | 0<br>4 |
| 3B. Repeat NRC Violations | N/A | 0 | 0 | 0 | 0 | 0 |
| 3C. % of NRC Commitments Met on Time # | N/A | 100 | 100 | 100 | 99 | 100 |
| 3D. % of INPO Commitments Met on Time # | N/A | 100 | 100 | 100 | 100 | 100 |
| 3G. Environmental Event Notifications | N/A | 14 | 1 | 14 | 6 | 14 |
| **PROFESSIONAL INDICATORS IN NUCLEAR SBU BUSINESS PLAN** | | | | | | |
| 4B. % Required Training Attended as Planned (quarterly) | N/A | 95 | N/A | 95 | N/A | 95 |
| 4C. No. Of OJT/OJE Observations by Line Management | N/A | 60 | 8 | 5 | 42 | 50 |
| 4D. No. of Management Observations of Training by Branch Managers | N/A | 88 | 11 | 7 | 86 | 73 |
| 4E. No. of Management Observations of Training by Senior Management | N/A | 20 | 3 | 2 | 19 | 17 |
| 4F. Year-End Staffing •NMPC Employees •Long-Term Contractors | page 26 | ≤1400<br>25 | 1365<br>16 | ≤1400<br>25 | 1365<br>16 | ≤1400<br>25 |
| 4G. Absenteeism Rate (%) # | page 25 | 3.0 | 2.45 | 3.0 | 2.3 | 3.0 |

#1995 Management Salary Incentive Performance Indicator

# ACTION ITEM STATUS REPORT/SUMMARY

| OBJECTIVE | OCTOBER ACTION ITEMS # COMPLETED ON TIME/# DUE | CUMULATIVE TOTAL # COMPLETED ON TIME/# DUE | YEAR-TO-DATE # COMPLETED/ # DUE |
|---|---|---|---|
| SAFETY | 1/1 | 9/13 | 12/13 |
| % MET | 100% | 69% | 92% |
| COMMERCIAL | 3/3 | 13/26 | 18/26 |
| % MET | 100% | 50% | 69% |
| REGULATORY | 2/2 | 11/11 | 11/11 |
| % MET | 100% | 100% | 100% |
| PROFESSIONAL | 1/1 | 10/12 | 12/12 |
| % MET | 100% | 83% | 100% |
| TOTAL ACTIONS | 7/7 | 43/62 | 53/62 |
| % MET | 100% | 69% | 85% |

N/A = Not Applicable

# UNIT 1

## LER/VIOLATION SUMMARY

**LERs**

During October, there were no reportable events to the NRC.

**NOTICES OF VIOLATIONS**

During October, NMP Unit 1 received no Notices of Violation.

#95-18 Non-cited violation - core thermal power limit exceeded.

**SIGNIFICANT EVENTS**

- ✓ October 1995 was the best October net generation in NMP1 history. It was also the 12th best month ever.
- ✓ The Spent Fuel Pool Clean-up project was completed. This included disposal of 55 spent underwater vacuum filters, SRMs/IRMS, and various other radioactive components. Total dose received on this project was .148 Manrem, which was below the exposure goal of .5 Manrem.
- ✓ Completed the quarterly testing of recirculation flow without incident (16 hours in a half-scram condition).
- ✓ Performed annual PM of 345kv breaker R915 instrumentation.
- ✓ Replaced shaft couplings on #121, #112, and #111 containment spray raw water pumps.
- ✓ Plant workers successfully implemented the ALARA Committee action plan for maintaining monthly exposure below 4.1 Manrem. Actual exposure for the month was 3.14 Manrem.
  - ✗ This goal was achieved even with the emergency repairs of valves 33-04 and 33-08 in the reactor water clean-up heat exchanger room. Approximately .900 Manrem was expended during these repairs.
- ✓ Supported a QA Audit of the RP program at FitzPatrick.
- ✓ Supported the Emergency Preparedness Exercise.
- ✓ SPDES plant process computer modification completed
- ✓ Outstanding NRC Exit on Securi[illegible] (OSRE) Inspection
- ✓ Lou Pisano on joint team benchmark trip to leading European utilities.
- ✓ REFOUT97: 22 workout teams established to support "35 day" goal.

# UNIT 2

## LER/VIOLATION SUMMARY

**LERs**

During October, there were no reportable events to the NRC.

**NOTICES OF VIOLATIONS**

During October, NMP Unit 2 received no Notices of Violation.

**SIGNIFICANT EVENTS**

✓ On October 11 at 1424 hours, the Reactor Water Cleanup System (WCS) was placed in a one pump/3 filter demineralizer operating configuration. The previous mode of WCS system operation had been two pumps/4 filter demineralizers. This new operating mode allows for increased flexibility for performing WCS system maintenance and improved plant efficiency. WCS system performance will continue to be monitored to ensure the desired reactor water quality standards can be maintained while operating in this mode.

✓ Feedwater flow transmitters 2FWS-FT1A and 2FWS-FT1B were flushed resolving a concern with flow indication that had existed since the Labor Day outage. This concern prevented full implementation of the Leading Edge Flow Meter (LEFM) correction factor and hence limited reactor power level slightly. With the flow indication concern resolved, the LEFM correction factor was implemented allowing increased station output.

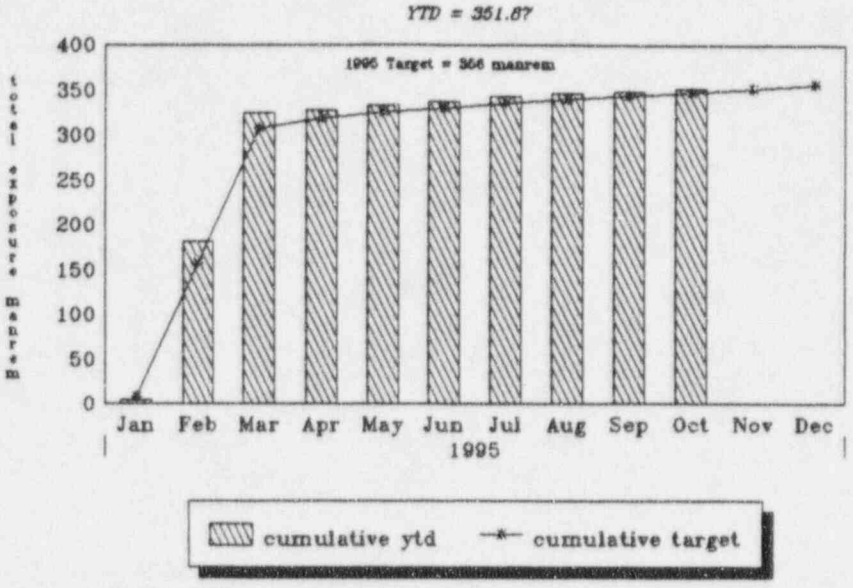
✓ The Division I Standby Gas Treatment System (2GTS*FN1A) failed to start as required at 0341 hours on October 16 when its discharge valve (2GTS*MOV3A) failed to open. This caused an unexpected entry into a seven day LCO per Technical Specification Section 3.6.5.3. During troubleshooting, it was discovered that valves were lined up in a way such that both GTS trans were inoperable placing the unit in a one hour shutdown LCO. The lineup was altered and GTS "B" was restored operable within the one hour LCO time frame. The problem was traced to a failed solenoid in the close circuitry which was replaced, tested and the system restored to operable at 1910 on October 20.

✓ On October 24, site personnel participated in the annual NRC observed Emergency Exercise for Unit 2. The exercise performance was rated as a failure by Niagara Mohawk evaluators because of problems with emergency condition recognition and classification. Actions will be taken to correct these deficiencies.

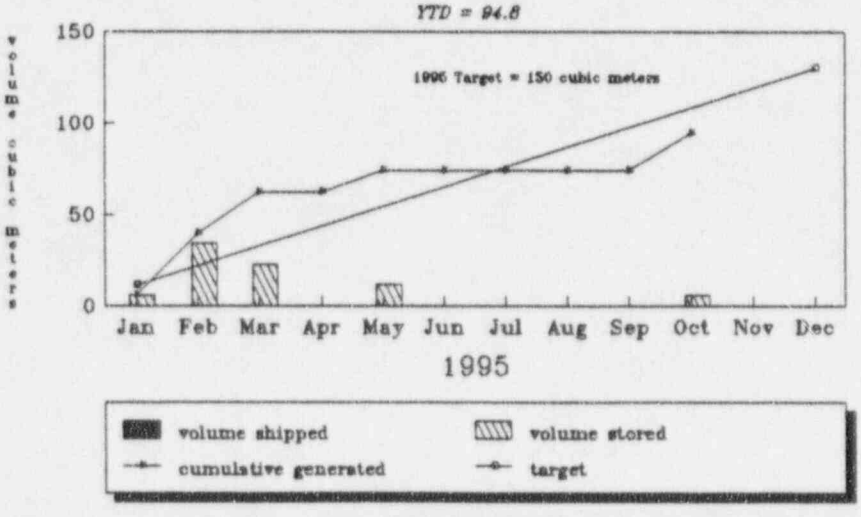
# BUSINESS PLAN

# PERFORMANCE INDICATOR GRAPHS

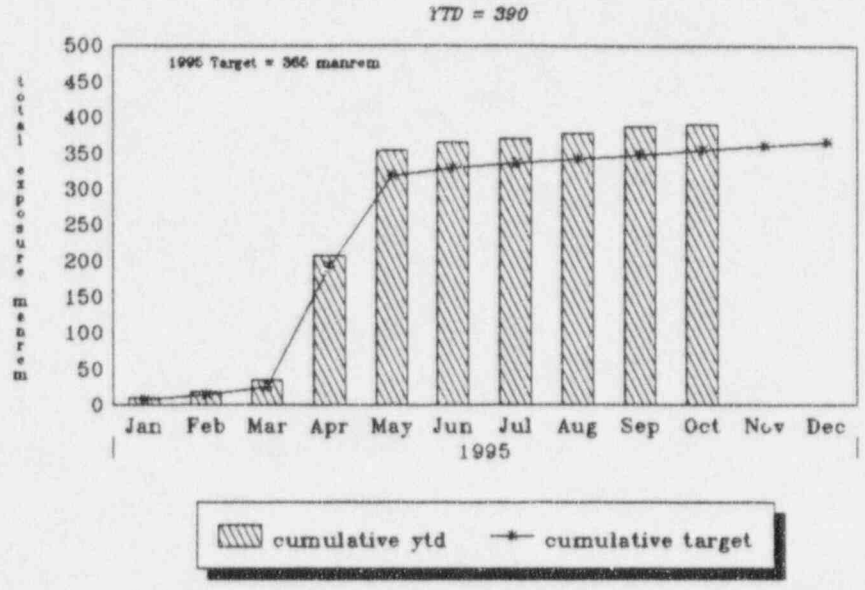
# PI 1A. NINE MILE POINT UNIT 1
# COLLECTIVE RADIATION EXPOSURE



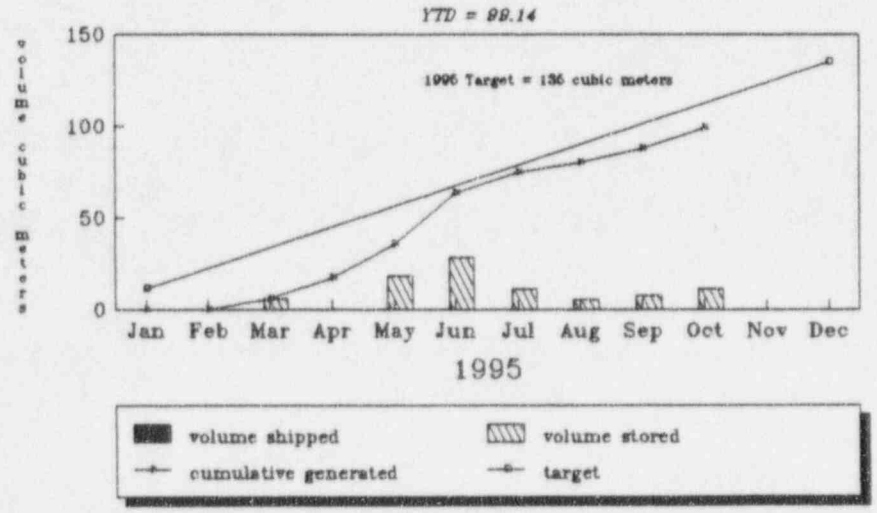

# PI 1B. NINE MILE POINT UNIT 1
# TOTAL SOLID RADWASTE
## (Volume of Low-Level Solid Radwaste)



# PI 1A. NINE MILE POINT UNIT 2
# COLLECTIVE RADIATION EXPOSURE

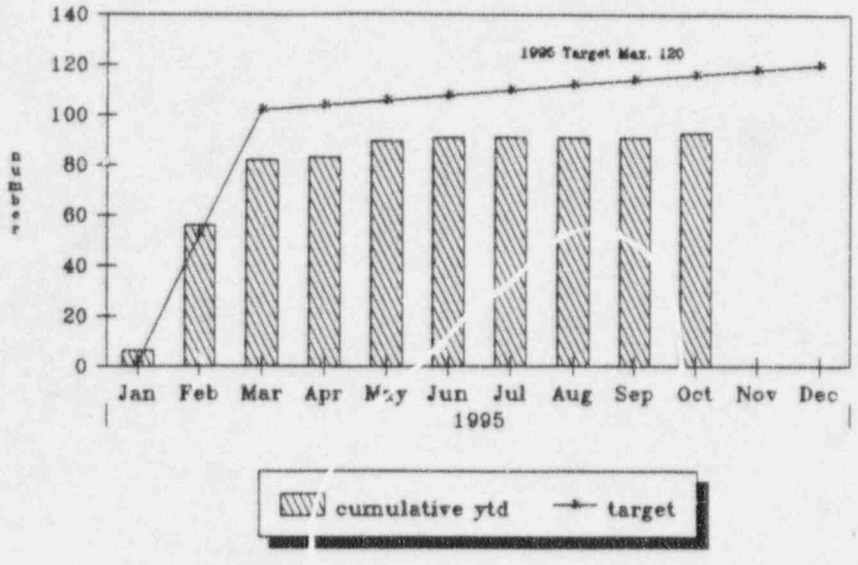



# PI 1B. NINE MILE POINT UNIT 2
# TOTAL SOLID RADWASTE
## (Volume of Low-Level Solid Radwaste)



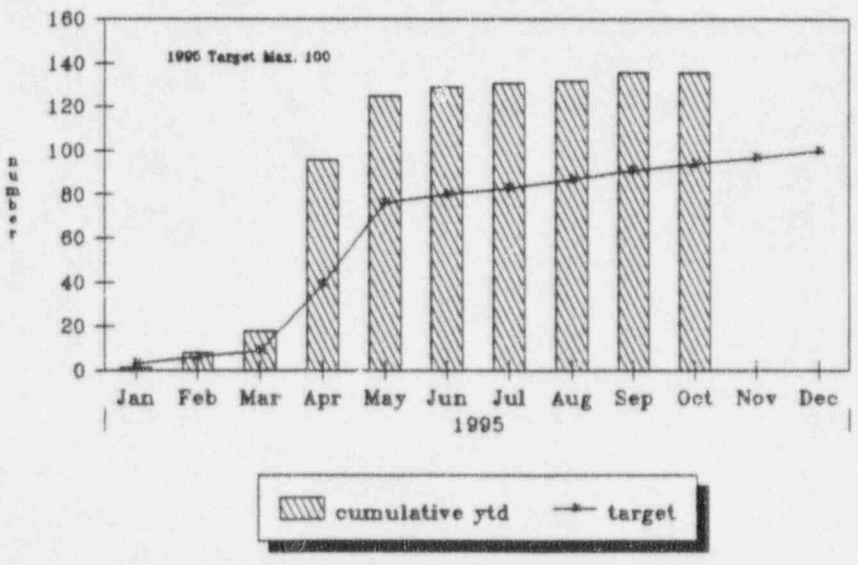
# PI 1C. NINE MILE POINT UNIT 1
# CONTAMINATION OCCURRENCE REPORTS

*YTD = 93*

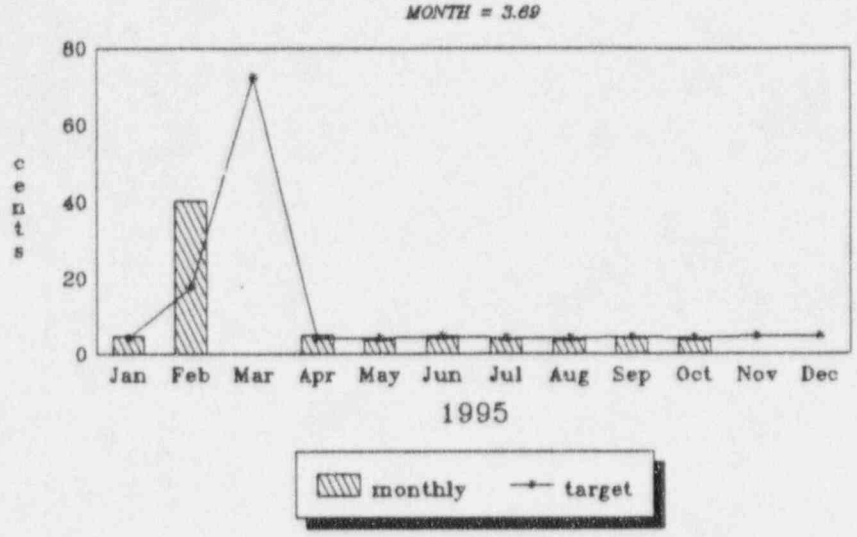



# PI 1C. NINE MILE POINT UNIT 2
# CONTAMINATION OCCURRENCE REPORTS

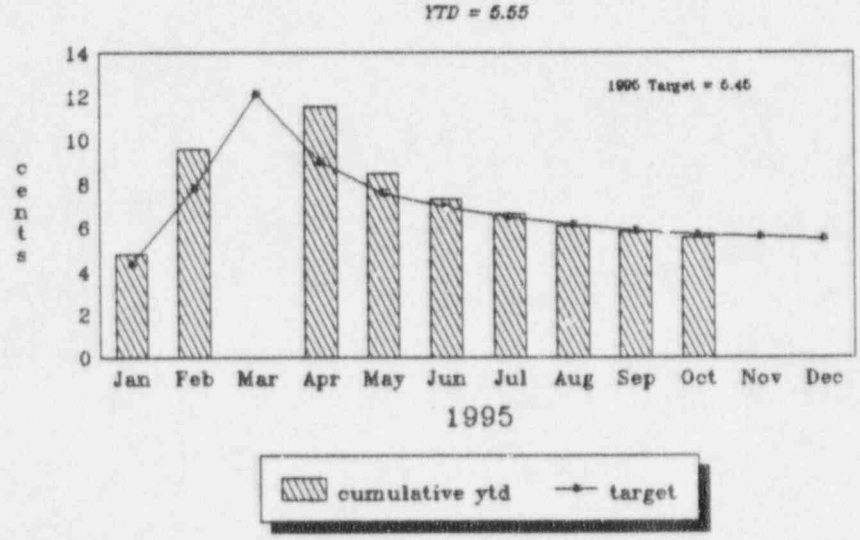
*YTD = 136*



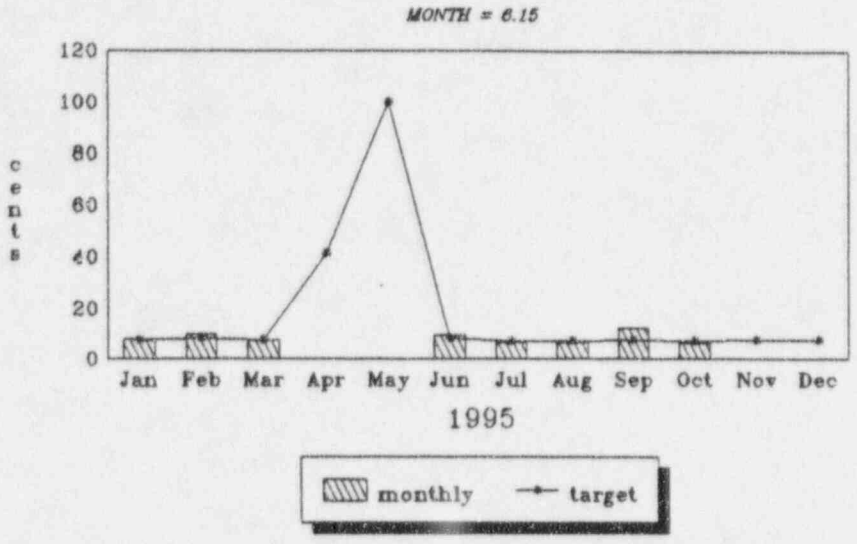
# PI 2A. NINE MILE POINT UNIT 1
# TOTAL REVENUE REQUIRED PER Kwhr
# (Monthly)



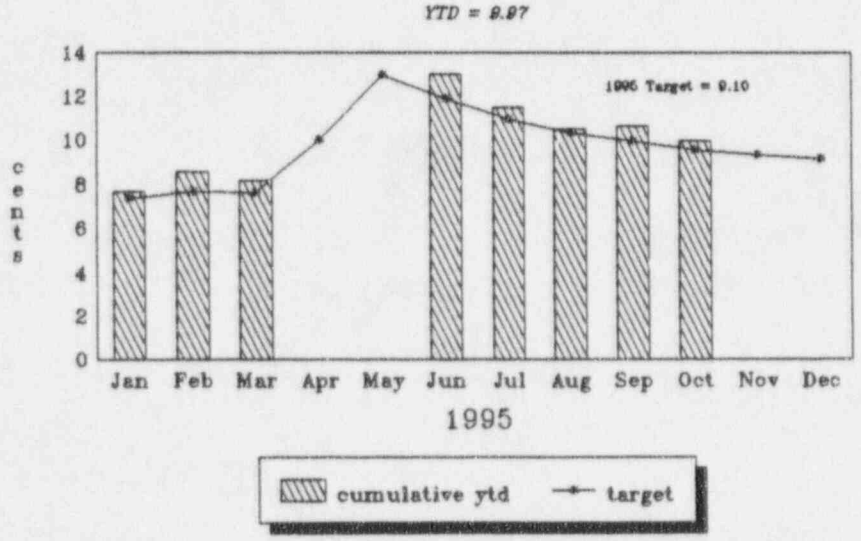

# PI 2A. NINE MILE POINT UNIT 1
# TOTAL REVENUE REQUIRED PER Kwhr
# (Average YTD)



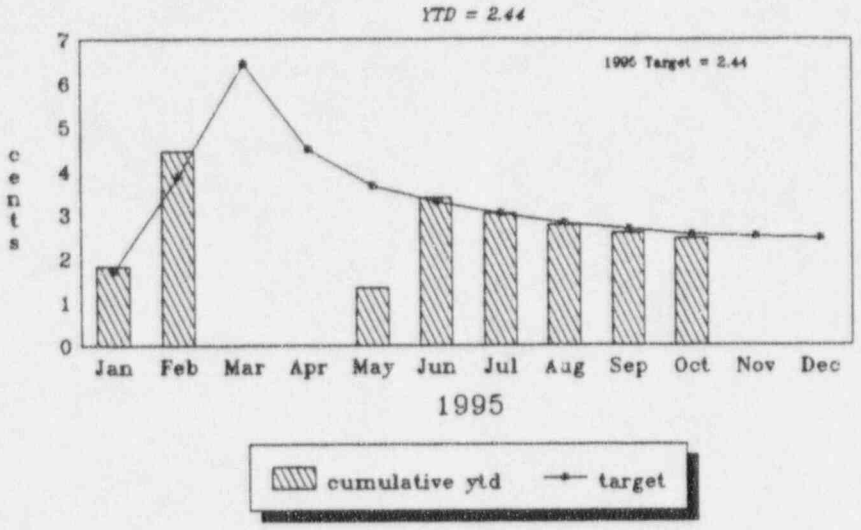
# PI 2A. NINE MILE POINT UNIT 2
# TOTAL REVENUE REQUIRED PER Kwhr
# (Monthly)



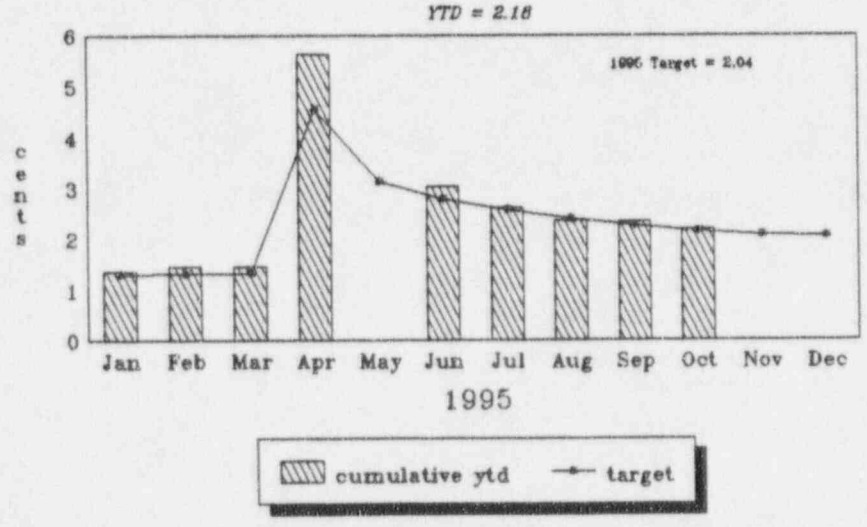

# PI 2A. NINE MILE POINT UNIT 2
# TOTAL REVENUE REQUIRED PER Kwhr
# (Average YTD)



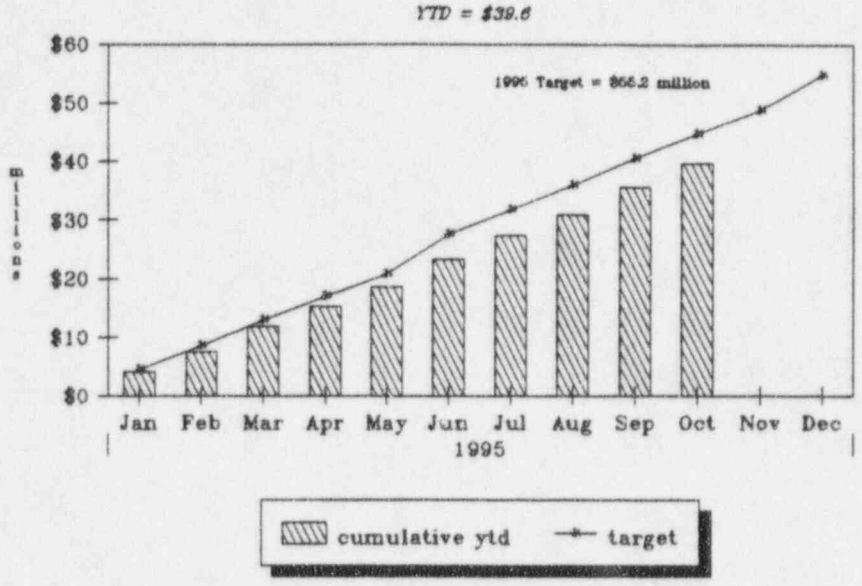
## PI 2B. NINE MILE POINT UNIT 1
## PRODUCTION O&M AND FUEL COST PER Kwhr
## (Average YTD)



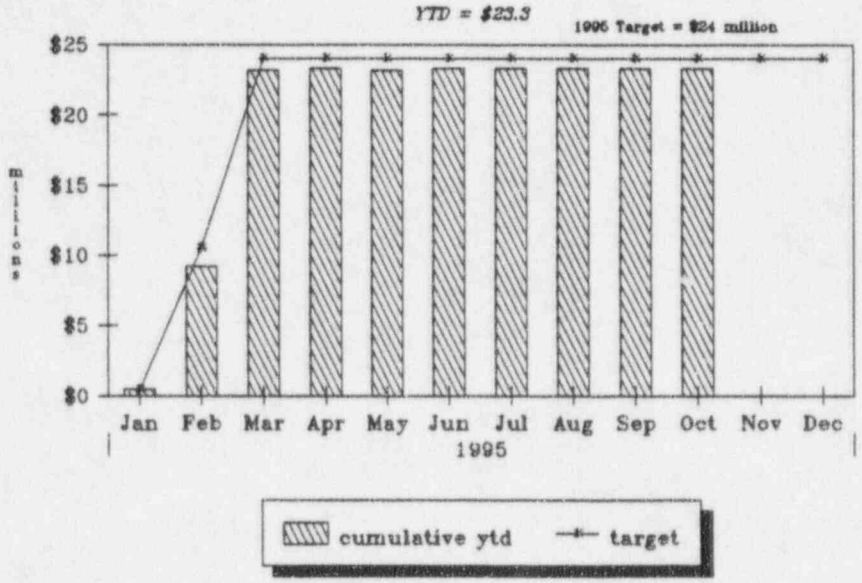

## PI 2B. NINE MILE POINT UNIT 2
## PRODUCTION O&M AND FUEL COST PER Kwhr
## (Average YTD)



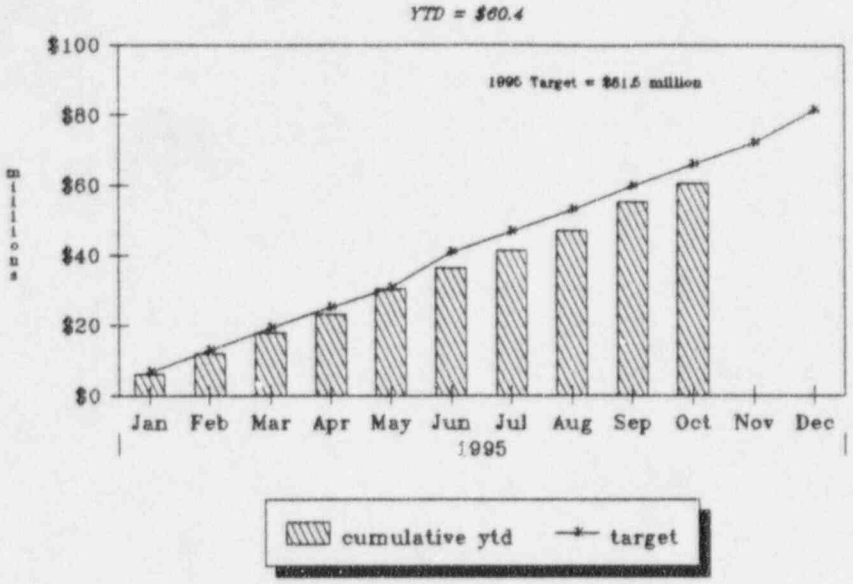
# PI 2C. NINE MILE POINT UNIT 1
# TOTAL NON-OUTAGE O&M



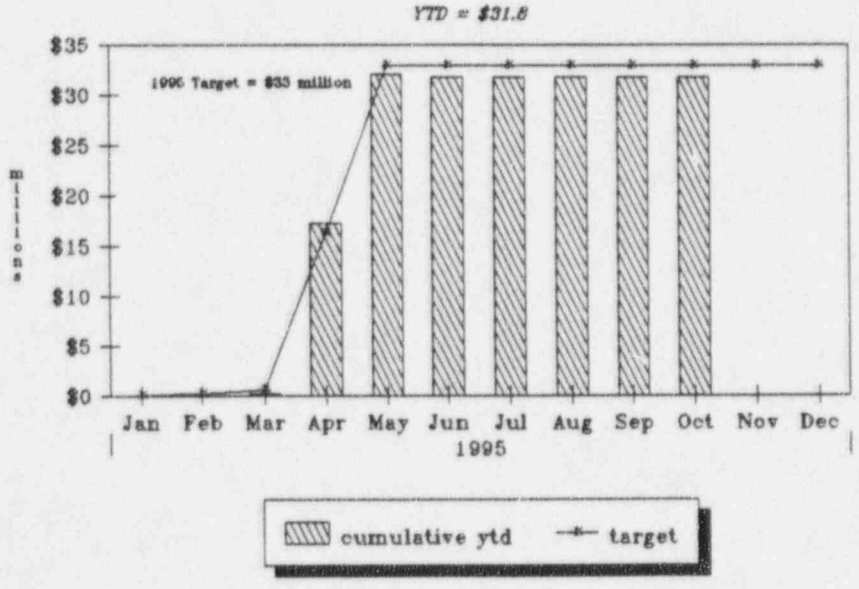

# PI 2D. NINE MILE POINT UNIT 1
# TOTAL PLANNED OUTAGE O&M



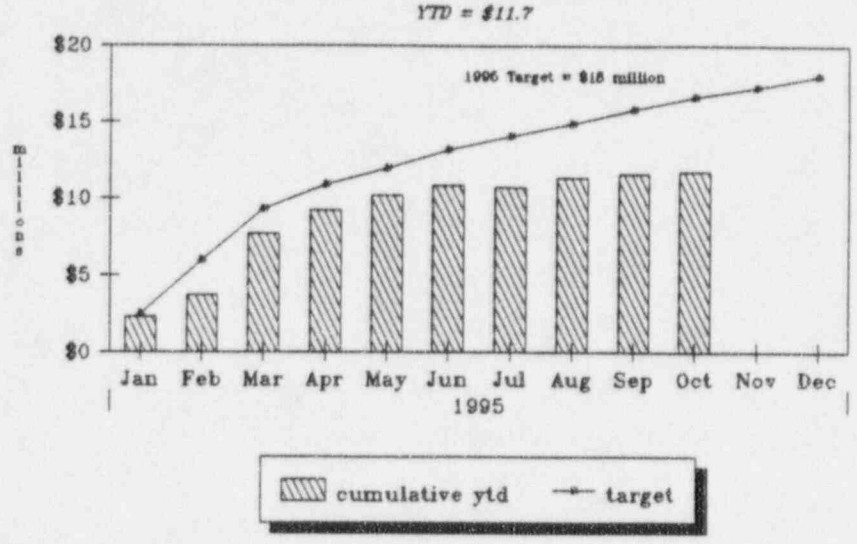
# PI 2C. NINE MILE POINT UNIT 2
# TOTAL NON-OUTAGE O&M



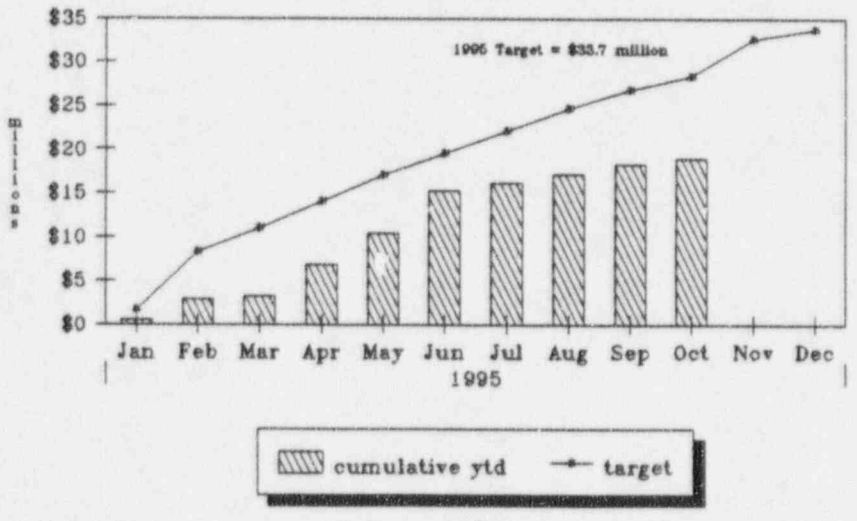

# PI 2D. NINE MILE POINT UNIT 2
# TOTAL PLANNED OUTAGE O&M



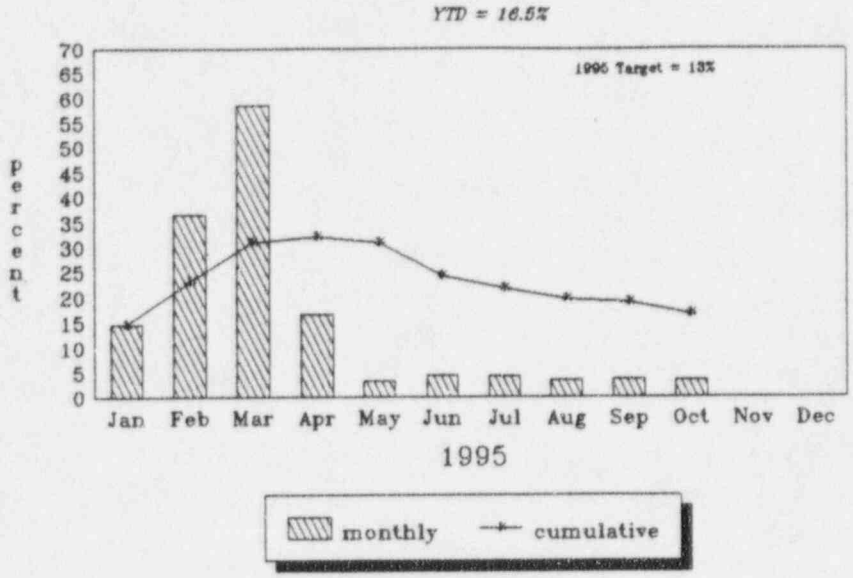
# PI 2E. NINE MILE POINT UNIT 1
# TOTAL CAPITAL
# (Including Common & Indirects)



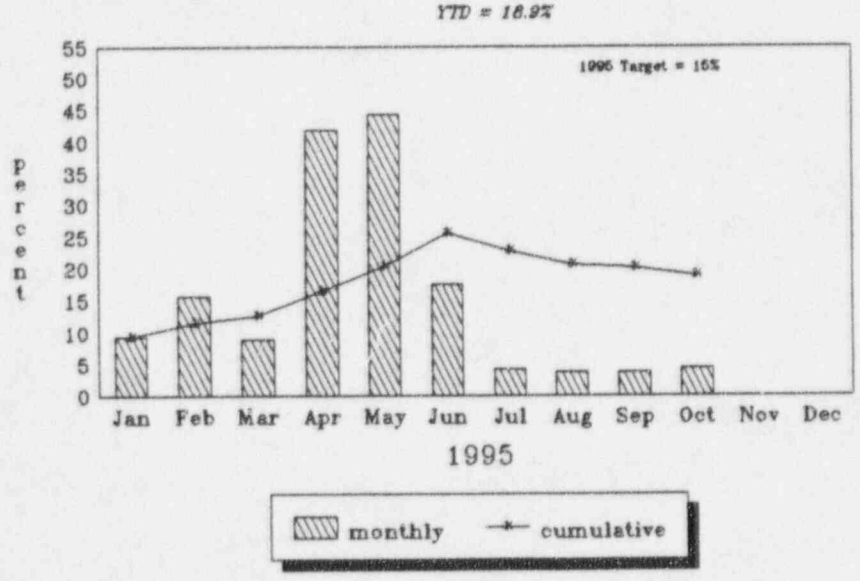

# PI 2E. NINE MILE POINT UNIT 2
# TOTAL CAPITAL
# (Including Common & Indirects)



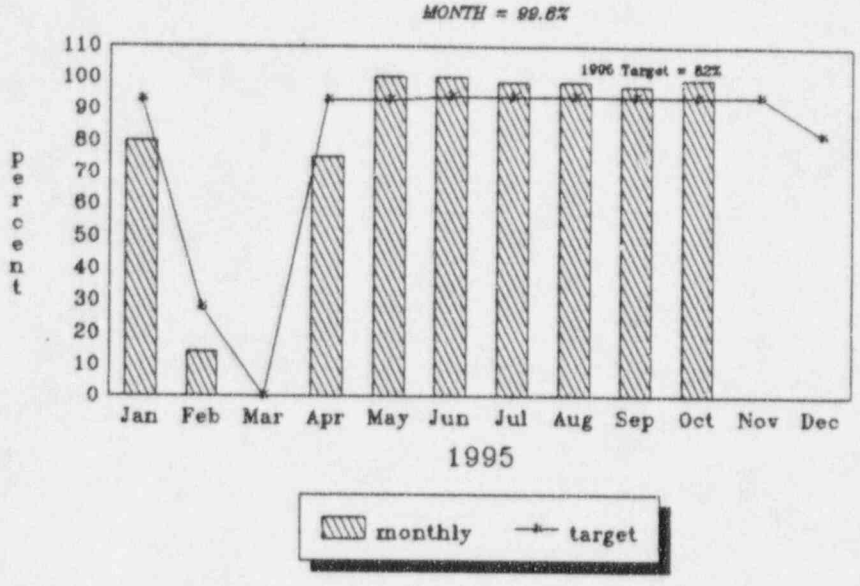
# PI 2F. NINE MILE POINT UNIT 1
# TOTAL OVERTIME RATE



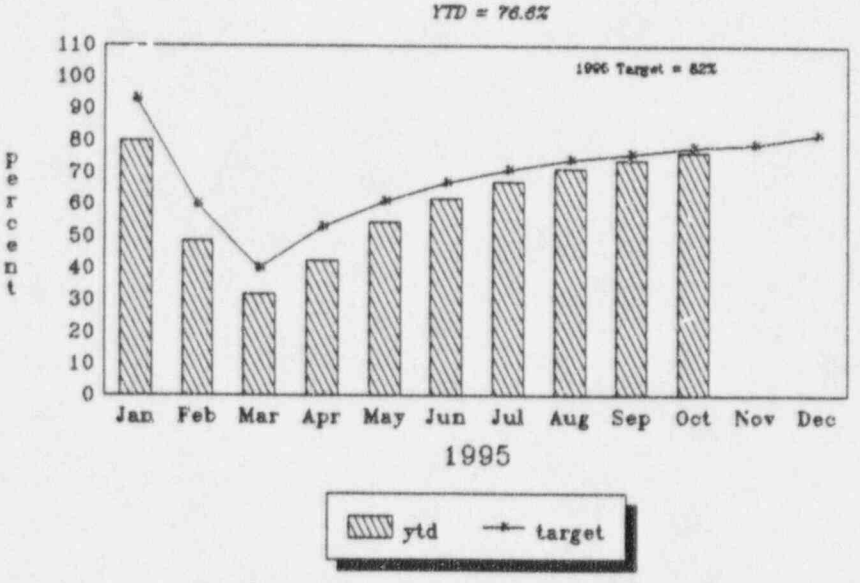

# PI 2F. NINE MILE POINT UNIT 2
# TOTAL OVERTIME RATE



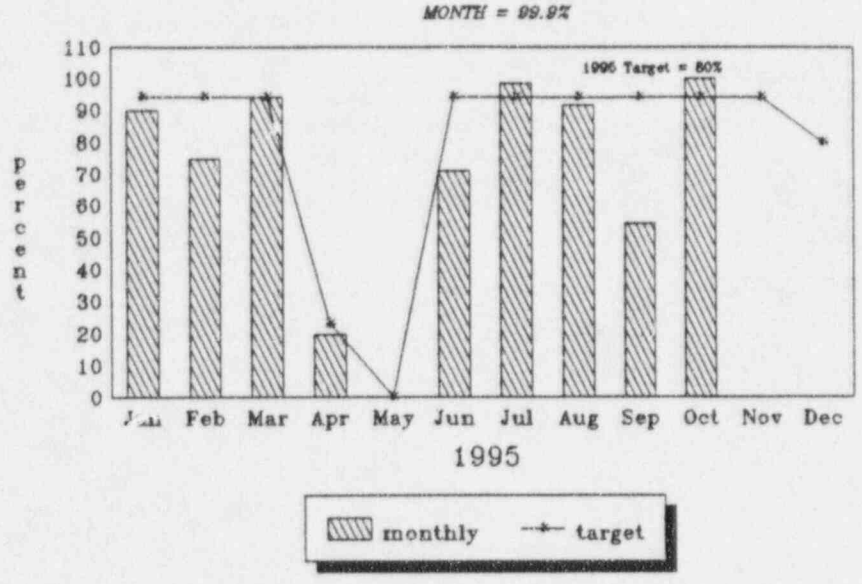
# PI 2G. NINE MILE POINT UNIT 1
# MONTHLY AVG. NET CAPACITY FACTOR



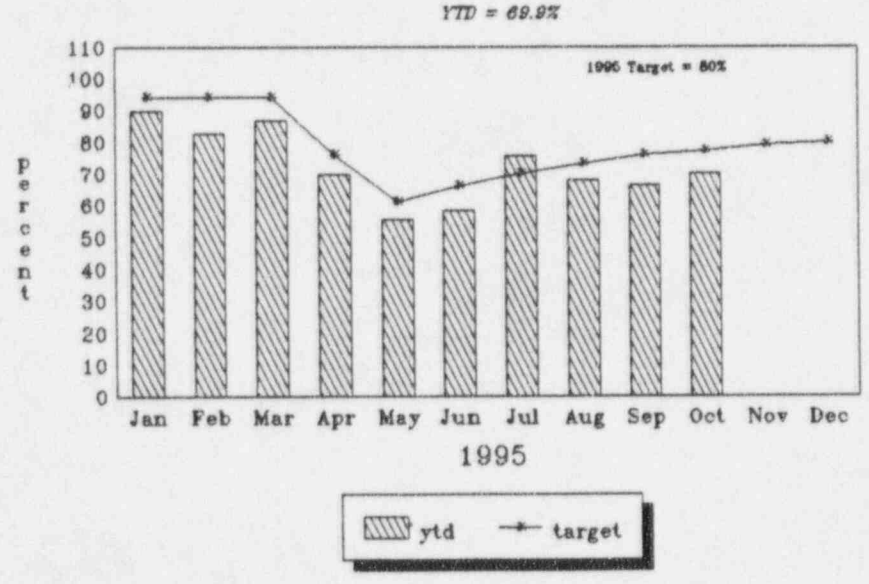

# PI 2G. NINE MILE POINT UNIT 1
# CUMULATIVE AVG. NET CAPACITY FACTOR



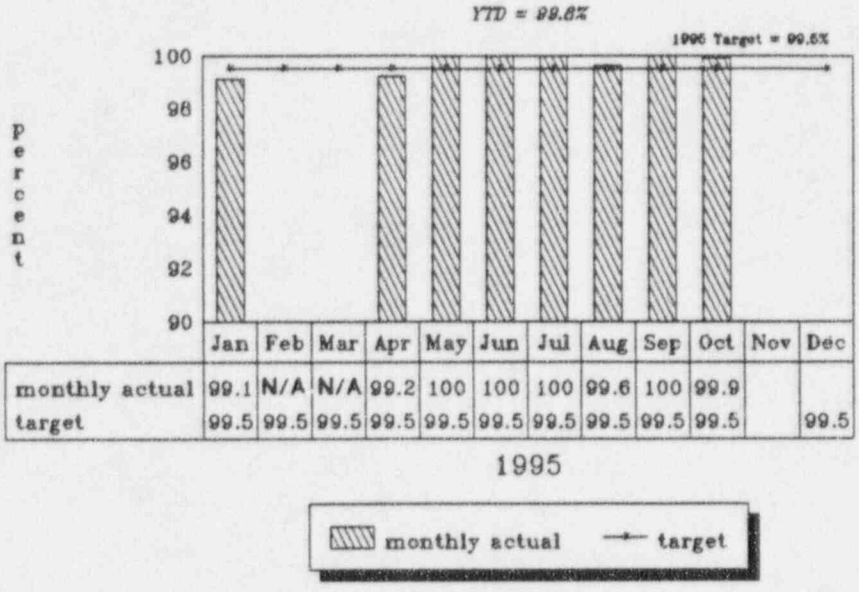
# PI 2G. NINE MILE POINT UNIT 2
# MONTHLY AVG. NET CAPACITY FACTOR



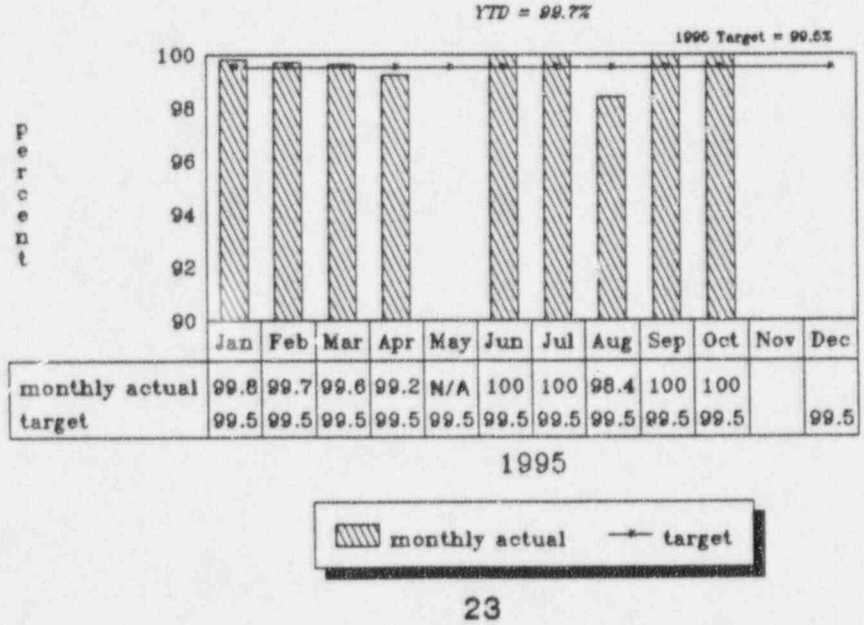

# PI 2G. NINE MILE POINT UNIT 2
# CUMULATIVE AVG. NET CAPACITY FACTOR



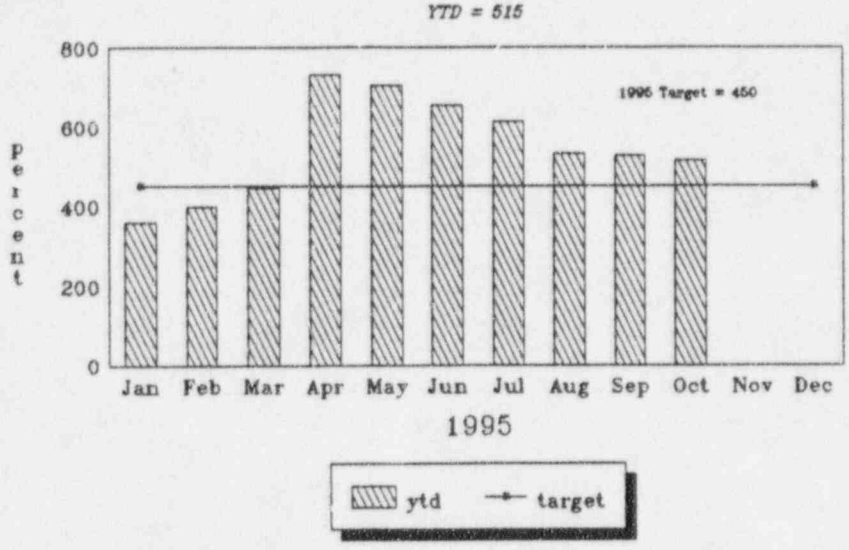
# PI 21. NINE MILE POINT UNIT 1
# THERMAL PERFORMANCE



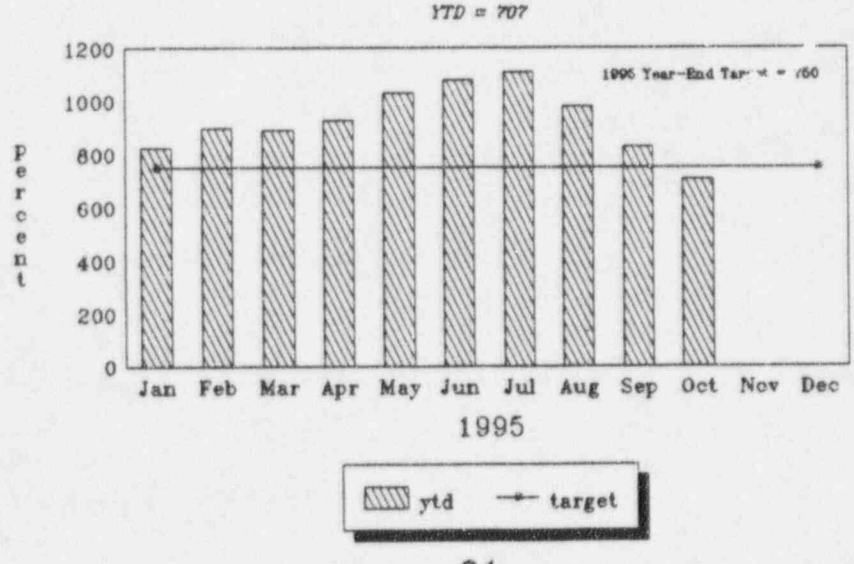

# PI 21. NINE MILE POINT UNIT 2
# THERMAL PERFORMANCE



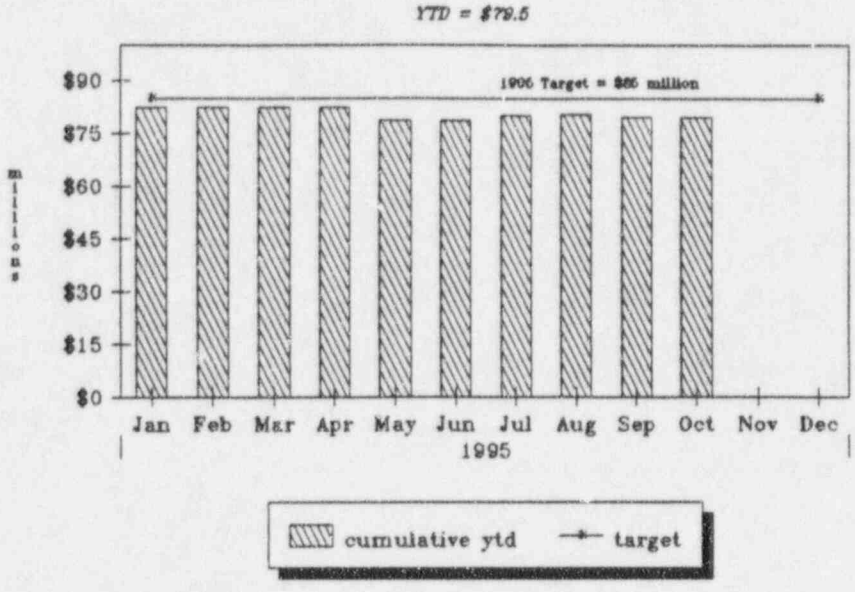
## PI 2L. NINE MILE POINT UNIT 1
## TOTAL NON-OUTAGE CORRECTIVE MAINTENANCE BACKLOG



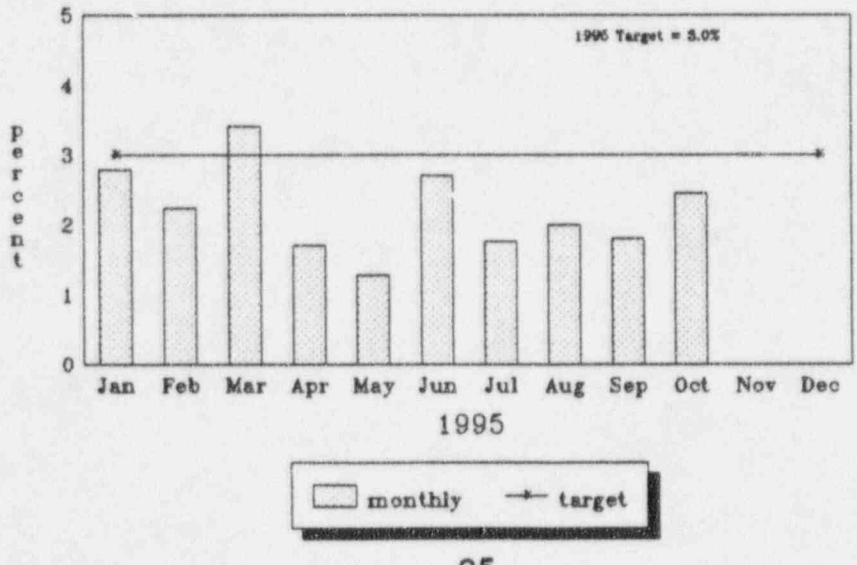

## PI 2L. NINE MILE POINT UNIT 2
## TOTAL NON-OUTAGE CORRECTIVE MAINTENANCE BACKLOG



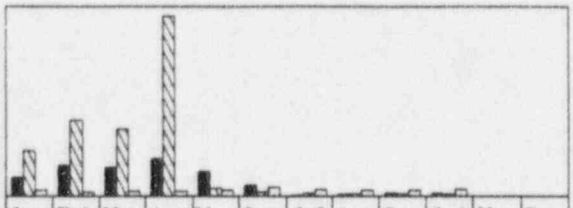
# PI 2P. NUCLEAR SBU
# MATERIAL AND SUPPLY INVENTORY VALUE




# PI 4G. NUCLEAR SBU
# ASENTEEISM RATE



# PI 4F. NUCLEAR SBU
# LONG-TERM, SHORT-TERM, CAPITAL MODIFICATION/PROGRAM CONTRACTORS



| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAP MOD/PROGRAM | 25 | 41 | 39 | 50 | 33 | 14 | 1 | 2 | 3 | 3 | | |
| SHORT TERM | 119 | 199 | 174 | 474 | 20 | 9 | 7 | 5 | 3 | 5 | | |
| LONG TERM | 13 | 8 | 11 | 11 | 14 | 22 | 18 | 13 | 14 | 16 | | |

1995

CAP MOD/PROGRAM  SHORT TERM  LONG TERM

# PI 4F. CONTRACTORS BY DEPARTMENT

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GENERATION-UN1 | 69 | 147 | 90 | 1 | 0 | 0 | 0 | 0 | 0 | 0.5 | | |
| GENERATION-UN2 | 12 | 12 | 63 | 470 | 10 | 10 | 2 | 0 | 0 | 3.5 | | |
| EXECUTIVE VP-UN1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| EXECUTIVE VP-UN2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| ENGINEERING-UN1 | 37 | 28 | 19 | 12 | 5 | 2 | 2 | 2 | 3 | 3 | | |
| ENGINEERING-UN2 | 39 | 41 | 35 | 35 | 35 | 23 | 15 | 16 | 15 | 14 | | |
| SafAsses,Lic,Trng-U1 | 6 | 11 | 9 | 9 | 9 | 5 | 3 | 1 | 1 | 1.5 | | |
| SafAsses,Lic,Trng-U2 | 4 | 9 | 8 | 8 | 8 | 5 | 4 | 1 | 1 | 1.5 | | |

1995

# NRC ACTIVITIES

## VIOLATIONS

### UNIT 1

**#95-18** Non-cited violation - core thermal power limit exceeded.

### UNIT 2 - none

## INSPECTIONS

- ✓ Operational Safeguards Response Evaluation (U1/U2)
- ✓ Engineering Inspection (U1/U2)
- ✓ Routine Residents' Inspection (U1/U2)

## SCHEDULED INSPECTIONS

Scheduled inspections for November:

- ✓ Engineering Inspection (U1/U2)

# INPO STATUS

## STATUS OF INPO COMMITMENTS/MISCELLANEOUS

- NMPC has committed to 53 action items in response to the 1994 Site Evaluation. To date, 51 action items have been completed.

- Year-to-date, 100% of INPO commitments were completed on time.

## SOER's

### Unit 2

- DER 2-95-2099 was initiated for SOER 95-01 and is scheduled for disposition in November.

## SCHEDULE

- R. Tessier participated as a peer evaluator on the McGuire training management assist visit October 2 - 6.

- R. Dean participated in an INPO peer evaluation Quad Cities October 2 - 13.

- J. Jones participated in the orientation session for new emergency preparedness manager October 11 - 12.

- B. Weaver attended a shift supervisor professional development seminar October 15 - 27.

- G. Gresock attended a maintenance supervisor professional development seminar October 15 - 27.

- Messrs. Abbott, Rademacher and Conway hosted a technical exchange visit with Shimane Nuclear Power Station, Chugoku Electric Power Company October 16 - 19.

## LOOK AHEAD - NOVEMBER

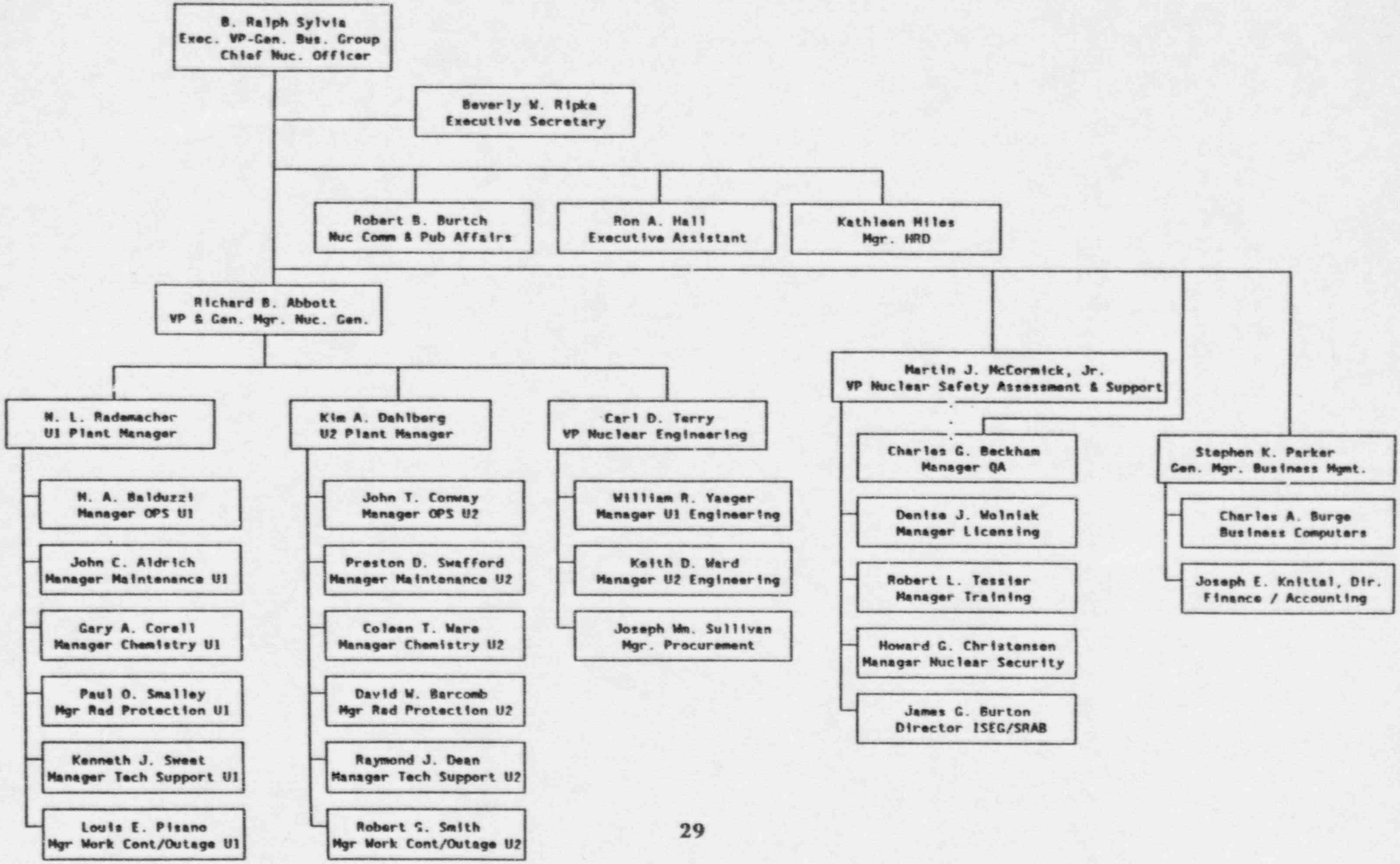
- M. Eron will attend the shift supervisor professional development seminar November 5 - 17.

- Messrs. Sylvia and Abbott will attend the CEO conference November 2 - 3.

- J. Lupa will participate in the NPRDS reporters' course November 13 - 17.

- D. Bosnic will participate in the LaSalle County Station plant evaluation visit November 2 - 10.

- J. Stewart will participate as a peer evaluator for the Dresden Station simulator observation October 1 - November 3.


B. Ralph Sylvia
Exec. VP-Gen. Bus. Group
Chief Nuc. Officer
Beverly W. Ripka
Executive Secretary
Robert B. Burtch
Nuc Comm & Pub Affairs
Ron A. Hall
Executive Assistant
Kathleen Miles
Mgr. HRD
Richard B. Abbott
VP & Gen. Mgr. Nuc. Gen.
Martin J. McCormick, Jr.
VP Nuclear Safety Assessment & Support
N. L. Radamacher
U1 Plant Manager
Kim A. Dahlberg
U2 Plant Manager
Carl D. Terry
VP Nuclear Engineering
Charles G. Beckham
Manager QA
Stephen K. Parker
Gen. Mgr. Business Mgmt.
M. A. Balduzzi
Manager OPS U1
John C. Aldrich
Manager Maintenance U1
Gary A. Corell
Manager Chemistry U1
Paul O. Smalley
Mgr Rad Protection U1
Kenneth J. Sweat
Manager Tech Support U1
Louis E. Pisano
Mgr Work Cont/Outage U1
John T. Conway
Manager OPS U2
Preston D. Swafford
Manager Maintenance U2
Coleen T. Ware
Manager Chemistry U2
David W. Barcomb
Mgr Rad Protection U2
Raymond J. Dean
Manager Tech Support U2
Robert G. Smith
Mgr Work Cont/Outage U2
William R. Yaeger
Manager U1 Engineering
Keith D. Ward
Manager U2 Engineering
Joseph Wm. Sullivan
Mgr. Procurement
Denise J. Wolniak
Manager Licensing
Robert L. Tessier
Manager Training
Howard G. Christensen
Manager Nuclear Security
James G. Burton
Director ISEG/SRAB
Charles A. Burge
Business Computers
Joseph E. Knittal, Dir.
Finance / Accounting

# OBJECTIVE 1 - SAFETY

## COLLECTIVE RADIATION EXPOSURE

The total amount of whole-body radiation exposure received by all personnel (including contractors and visitors) at the plants during each calendar year.

## VOLUME OF LOW-LEVEL SOLID RADWASTE

Per unit annual volume of low-level radioactive waste generated after processing for storage or for burial. Low-level radioactive waste includes dry, contaminated materials (e.g. trash, wood, tools), waste solidification system output, and dewatered resins, filters, and sludge. Spent nuclear fuel is not included.

## CONTAMINATION OCCURRENCE REPORTS

The number of skin and clothing contaminations reported on Contamination Occurrence Reports (CORs).

Skin and clothing contaminations are those which, before washing or cleaning, exceed a radioactivity level from beta and gamma emitting isotopes of 100 cpm above background as measured by a Geiger-Mueller instrument with a pancake probe (frisker).

## UNPLANNED RADIOLOGICAL RELEASES

Any release of licensed radioactive material from Nine Mile Point to the environment which is not permitted by the Technical Specifications or NRC regulations.

## FUEL RELIABILITY

The indicator is defined as the combined steady-state off-gas activity rate (microcuries/second) measured at the steam jet air ejector outlet (Recombiner Discharge) for the six primary noble gas fission products, corrected for the tramp uranium (recoil release) contribution. Tramp uranium is fuel which has been deposited on reactor core internals from previous defective fuel or is present on the surface of fuel elements from the manufacturing process.

Steady state is defined as continuous operation for at least three days at a power level that does not vary more than ± five percent. Plants should collect data for this indicator at a power level above 85 percent when possible. Plants that did not operate at steady-state power above 85 percent should collect data for this indicator at the highest steady-state power level attained during the month. The data required to determine each unit's value for this indicator is the monthly activity rate (microcuries/second) of the krypton-85m, krypton-87, krypton-88, xenon-133, xenon-135 and xenon-138 isotopes.

UNPLANNED AUTOMATIC SCRAMS PER YEAR (3-year rolling average)

An actuation of the reactor protection system that results in a scram signal at any time when the unit is critical. Scrams that are planned as part of special evolutions or tests are not included in this definition. A yearly and 3-year rolling average indicator is provided.

SAFETY SYSTEM PERFORMANCE (3-year rolling average)

The performance indicator is calculated separately for each of the BWR systems. The safety system performance indicator is defined for each safety system as the sum of the unavailabilities, due to all causes, of the components (or emergency generator trains) in the system during a time period divided by the number of trains in the system. This definition is further explained as follows:

Component Unavailability: the fraction of time that a component is unable to perform its intended function when it is required to be available for service--The component unavailability is the ratio of the hours the component was unavailable (unavailable hours) to the hours the system was required to be available for service. The safety systems included for Unit 1 are emergency AC power, feedwater injection, emergency condensers, and Residual Heat Removal; and the Safety Systems for Unit 2 are emergency AC power, Reactor Core Isolation Cooling, Residual Heat Removal, and High Pressure Core Spray.

LER'S DUE TO MISSED TECHNICAL SPECIFICATION SURVEILLANCE TESTS

A missed Technical Specification surveillance test occurs when the Technical Specification required surveillance test is not completed within its required time frame including its allowable extension. LER's recorded under this category are the result of missed Technical Specification surveillances for the current year and do not include discovered missed Technical Specification surveillances from the past year(s).

## OSHA LOST WORKDAY CASES

Cases which involve a day away from work because of an occupational injury or illness.

For each case, a lost workday does not include the day of injury or onset of illness or any days on which the employee would not have worked even though able to work. Contractor personnel are not included in this indicator.

## OSHA RECORDABLE INCIDENTS

All work-related deaths and illnesses, and those work-related injuries which result in loss of consciousness, restriction of work or motion, transfer to another job, or require medical treatment beyond first aid.

## INDUSTRIAL SAFETY RATE

This indicator is defined as the number of accidents per 200,000 manhours worked for all utility personnel permanently assigned to the station that result in any one of the following:

- one or more days of restricted work (excluding the day of the accident)
- one or more days away from work (excluding the day of the accident)
- fatalities

$$\text{Safety Rate} = \frac{(\#\text{restricted time accidents}) + (\#\text{lost time accidents}) + (\text{fatalities}) \times 200{,}000 \text{ manhours}}{(\#\text{station manhours worked})}$$

# OBJECTIVE 2 - COMMERCIAL

## TOTAL REVENUE REQUIRED PER KWHR (¢)

Revenue required to recover the unit's total estimated costs at the unit's business plan capacity factor including return on investment.

## AVERAGE NET CAPACITY FACTOR (ANCF)

The Average Net Capacity Factor is determined by dividing the net electrical energy generated, expressed in megawatt hours, by the product of the expected plant output net and the total hours during the month that the unit operated with breakers closed. The expected plant output is established by a monthly average circulating water inlet temperature and using the net generation output curve for the applicable unit.

$$ANCF = \frac{\text{Actual MWHe (Net)}}{\text{Expected MWNet x (hours in month)}} \text{ x100\%}$$

## THERMAL PERFORMANCE

The ratio of the design gross heat rate (corrected) to the adjusted actual gross heat rate. Design gross heat rate (corrected) is determined by correcting the initial plant gross heat rate to include the demonstrated effects of plant modifications or operating deviations. The adjusted gross heat rate is adjusted to account for circulating water inlet temperature deviations from design values.

Thermal Performance is determined as follows:

$$\frac{\text{design gross heat rate (corrected)}}{\text{adjusted actual gross heat rate}} \text{ x 100\%}$$

## REFUEL OUTAGE DURATION

The period of time between the shutdown of the reactor before a refueling and the startup of the unit after that refueling (breaker to breaker).

## SPECIAL REPORTS SUBMITTED

Reports submitted to the NRC as required by Technical Specifications' Limiting Condition for operation action statements and in accordance with 10CFR50.4.

## TOTAL OVERTIME RATE

Ratio of the total management and represented overtime hours worked by the straight time hours.

## TOTAL NON-OUTAGE CORRECTIVE MAINTENANCE BACKLOG

The total number of power block and non-power block corrective maintenance Problem Identification (PIDs)/Work Orders (WOs) which do not require an outage to be worked.

## NON-OUTAGE CORRECTIVE MAINTENANCE CONTROL ROOM DEFICIENCIES >6 WEEKS

A control room deficiency is any meter, chart recorder, indicating light, annunciator or other component within the control room that does not accurately represent the parameter or state it is intended to monitor. The actual fault may be in the hardware or software providing the input signal. Control room devices such as switches, controllers, or pushbuttons which do not operate as intended are also considered control room deficiencies.

This performance indicator reviews control room deficiencies that do not require an outage and are greater than six weeks old.

## NON-OUTAGE TEMPORARY MODIFICATIONS >1 YEAR

Long-standing temporary modifications implemented greater than one (1) year which do not require an outage to be cleared.

## CHEMISTRY PERFORMANCE INDEX (CPI) - Reactor Water

The reactor water chemistry index compares the concentration of selected parameters (chloride, sulfates and conductivity) to industry-accepted values for those impurities. The monthly average of the daily time-weighted measurements for each impurity is divided by the accepted value for the impurity, and the sum of these ratios is normalized to 1.0. The "accepted values" are the "achievable values" defined in the BWR Owners Group Guidelines. This indicator applies only during power operation, (i.e., greater than 10 percent power).

$$CPI = \frac{[(Cl)/15\ ppb + (SO4)/15\ ppb + Conductivity/0.2\mu S/cm]}{3}$$

## CONDUCTIVITY

The average daily value ($\mu$Siemens/cm), for the period, for conductivity; includes only values taken at reactor power greater than 10 percent.

## MATERIAL AND SUPPLY INVENTORY VALUE

Total value of the material and supplies stock inventory for the Nine Mile Point Unit 1 and Unit 2 nuclear stations.

## PERCENT OF POWER BLOCK WOs ON HOLD

This indicator reflects the site's ability to effectively plan work. The percentage reflects the number of Work Orders (WOs) that are identified in W.C.Mosse as Power Block and are on hold for parts or materials.

# OBJECTIVE 3 - REGULATORY

## NRC VIOLATIONS BY DATE OF DISCOVERY

The number of violations known to have occurred or were identified, including pending violations not yet issued by the NRC, by month of occurrence/identification.

## REPEAT NRC VIOLATION

Repetitive violation as determined by the NRC; may be followed by greater enforcement action by the NRC.

## PERCENT OF COMMITMENTS TO INTERFACING AGENCIES MET ON TIME

A measure of responsiveness to interfacing agencies (e.g. NRC, INPO). The percentage of instances in the reporting period where a commitment noted in meeting minutes or formal written communications between the Nuclear SBU and an interfacing agency were completed within the stated schedule. INPO Commitments are tracked on the DER tracking system.

## ENVIRONMENTAL EVENT NOTIFICATIONS

Occurrences requiring notifications to environmental agencies which result in excedence of regulatory requirements.

# OBJECTIVE 4 - PROFESSIONAL

## PERSONNEL ERRORS RESULTING IN A LICENSEE EVENT REPORT (LER)/VIOLATION

Number of personnel errors made during the reporting period that result in an LER/Violation. A count of one is made for a personnel error that results in either an LER and/or a violation.

## PERSONNEL ERROR

Human action (behavior), either observable or non-observable, that transforms normal performance into an abnormal situation.

## LICENSEE EVENT REPORTS

Reports which identify events which meet the criteria of 10CFR50.73. These do not include reports written against safety/relief valve problems as required by NUREG-1047, Section 15.9.3.

## % REQUIRED TRAINING ATTENDED AS PLANNED

Ratio of the actual number of trainees attending a required training segment to the total number of trainees required to attend the training.

## ON-THE-JOB TRAINING (OJT)/EVALUATION (OJE) OBSERVATION

Number of times supervision/management from the line organization observes OJT/OJE in the plant.

## MANAGEMENT OBSERVATIONS OF TRAINING

Number of times branch managers/senior management team members observe training in the classroom, laboratory or simulator.

## LONG-TERM CONTRACTOR POSITIONS

Long-term contractors who augment the Nuclear SBU staff (longer than six months). These contractors are usually appointed because of a lack of in-house expertise, special assignments, or other reasons which preclude NMPC from filling the position with an employee.

## ABSENTEEISM RATE

This indicator tracks all absences from work with the exception of vacation days and holidays.