ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

INSPECTION REPORT 50-410/85-99

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT, UNIT 2

ASSESSMENT PERIOD: OCTOBER 1, 1983 - JANUARY 31, 1985

BOARD MEETING DATE: MARCH 28, 1985

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TABLE OF CONTENTS

TABLES

I. INTRODUCTION

A. Purpose and Overview

The Systematic Assessment of Licensee Performance (SALP) is an integrated NRC staff effort to collect the available observations and data on a periodic basis and to evaluate licensee performance based upon this information. SALP is supplemental to normal regulatory processes used to ensure compliance to NRC rules and regulations. SALP is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful guidance to the licensee's management to promote quality and safety of plant construction and operation.

A NRC SALP Board, composed of the staff members listed below, met on March 28, 1985 to review the collection of performance observations and data to assess the licensee performance in accordance with the guidance in NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance." A summary of the guidance and evaluation criteria is provided in Section II of this report.

B. SALP Board

Board Chairman

R. W. Starostecki, Director, Division of Reactor Projects (DRP)

Members

S. J. Collins, Chief, Projects Branch No. 2, DRP
J. P. Durr, Chief, Engineering Branch, Division of Reactor Safety (DRS)
R. A. Gramm, Senior Resident Inspector, Nine Mile Point Unit 2
J. Linville, Chief, Projects Section No. 2C, DRP
A. Schwencer, Chief, Licensing Branch 2, Office of Nuclear Reactor Regulation

C. Background

1. Licensee Activitives

The licensee has stated the project is 85% complete. Construction installation activities have included small and large bore piping and supports; raceway installation, cable pulling, and cable terminations; and instrumentation tubing and supports. The installation of concrete and structural steel is essentially complete. Equipment has been released to the Startup and Test organization to support the pre-operational test schedule. The site work force as of January was 7200 manual and non-manual personnel. Approximately 650 of those personnel perform QA or QC functions.

During the course of the assessment period, the Nine Mile Point, Unit 2 project has passed through several distinct phases. The Construction Appraisal Team (CAT) inspection was conducted in November and December, 1983. That inspection effort identified far ranging deficiencies in the application of QA programs on-site and an inadequate level of Niagara Mohawk project involvement. The project then entered into the second phase, CAT problem resolution. The CAT identified deficiencies were analyzed at great length by the licensee in order that suitable corrective action plans could be developed. During this phase, the licensee realized that not only would hardware and software issues need to be rectified, but that additionally, new management practices would have to be implemented to see the project through to successful completion. The NRC then formally communicated the CAT deficiencies to the licensee in the form of a Notice of Violation and simultaneously mandated that the licensee implement additional actions in response to an Order.

By mid 1984, the bulk of the CAT corrective actions had been initiated at the project. The Region I NDE Van inspection began the third phase, being the verification of corrective action implementation. That inspection showed steps initiated to resolve the radiography problems had not fully resolved the CAT concerns. The van inspection prompted further extensive licensee actions in the form of complete reinterpretations of all ITT Grinnell radiography film. Late in the assessment period, a Region I Construction Team Inspection was performed. The inspection covered plant installation/inspection activities involving representative plant hardware. No significant deficiencies were identified regarding the application of site quality programs.

Over the course of the assessment period, the licensee has also implemented corrective actions with the specific goal of increasing the overall plant quality. The licensee is performing increased surveillances/audits of contractor performance particularly as it relates to hardware quality. The licensee QA organization performs an on-going review of inspection procedures to assure adequate accept/reject criteria definition and in-depth assessments have been performed of the contractor QA organizations.

The licensee has instituted a complete management reorganization at both corporate and site levels. The licensee has retained Management Analysis Company (MAC) to provide nuclear experienced personnel to fill both project and quality assurance positions. The licensee has significantly improved their control of site activities by locating project management on-site and by modifying the line organization such that the Stone and Webster Engineering Corporation (SWEC) Project management reports directly to the licensee. New QA management has been brought on-site for SWEC and the sub-contractor organizations.

An INPO construction audit was performed between September and October, 1984. Site programs in the area of design control, material storage, QA program effectiveness, equipment qualification, and test activities were reviewed.

No preoperational tests have been conducted to date. The Reactor Coolant System hydrostatic test is scheduled for April 1985.

2. Inspection Activities

During the 16 month assessment period, a total of 25 onsite NRC inspections involving 5408 inspector hours (or 4055 hours on an annual basis) were conducted with a distribution in the appraisal functional areas shown in Table 2. The site has been staffed with a construction resident inspector during the entire assessment period and a second construction inspector was assigned in October 1984. An additional senior resident inspector was detailed on part-time basis to monitor the pre-operational test program.

A CAT inspection was conducted in November and December 1983. The inspection identified numerous hardware and software deficiencies. The implication of the identified deficiencies was that the site had suffered a QA program breakdown and that inadequate licensee management attention had been focused on the site problems. The inspection resulted in the issuance of an Enforcement Action comprised of a Notice of Violation, an Order and a Civil Penalty. Following the CAT inspection an Augmented Inspection Program was initiated at the site by Region I. As part of this program, other Region I senior construction resident inspectors were detailed to the site for one month tours to gain additional perspectives regarding the project quality status.

As a followup to the CAT, a Nondestructive Examination (NDE) Region I inspection was performed in April - May, 1984. The inspection detected further problems with the site review of radiographic film.

In order to gain additional perspective regarding the effectiveness of licensee corrective actions following implementation of CAT corrective actions, a Region I Construction Team Inspection (CTI) was conducted in December 1984. The inspection examined project management, quality assurance/control programs, and installed hardware. In general, the inspection found the hardware installations to be in accordance with design requirements and detected improved levels of management involvement.

In early 1985, an inspection reviewed the preoperational test staffing and procedural controls. They were found to be adequate to support the forthcoming preoperational test effort.

Tables 3 and 4 provide a synopsis of enforcement data and inspection activities conducted during the appraisal period.

II. CRITERIA

Licensee performance is assessed in selected functional areas, depending on whether the facility is in a construction, preoperational, or operating phase. Each functional area normally represents areas significant to nuclear safety and the environment, and are normal programmatic areas. Special areas may be added to highlight significant observations.

One or more of the following evaluation criteria were used to assess each functional area.

1. Management involvement and control in assuring quality
2. Approach to resolution of technical issues from a safety standpoint
3. Responsiveness to NRC initiatives
4. Enforcement history
5. Reporting and analysis of reportable events
6. Staffing (including management)
7. Training effectiveness and qualification

Based upon the SALP Board assessment each functional area evaluated is classified into one of three performance categories. The definitions of these performance categories are:

Category 1. Reduced NRC attention may be appropriate. Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used so that a high level of performance with respect to operational safety or construction is being achieved.

Category 2. NRC attention should be maintained at normal levels. Licensee management attention and involvement are evident and are concerned with nuclear safety; licensee resources are adequate and reasonably effective so that satisfactory performance with respect to operational safety or construction is being achieved.

Category 3. Both NRC and licensee attention should be increased. Licensee management attention or involvement is acceptable and considers nuclear safety, but weaknesses are evident; licensee resources appear to be strained or not effectively used so that minimally satisfactory performance with respect to operational safety or construction is being achieved.

The SALP Board has also assessed each functional area to compare the licensee's performance during the last quarter of the assessment period to that during the entire period in order to determine the recent trend for each functional area. The trend categories used by the SALP Board are as follows:

Improving: Licensee performance has generally improved over the last quarter of the current SALP assessment period.

Consistent: Licensee performance has remained essentially constant over the last quarter of the current SALP assessment period.

Declining: Licensee performance has generally declined over the last quarter of the current SALP assessment period.

III. SUMMARY OF RESULTS

A. Overall Facility Evaluation

Since SALP serves as an analysis to guide both licensee and NRC application of resources to resolve problem areas, the performance weighting is heavily biased toward facility performance in the later stage of this assessment period.

As a result of licensee initiatives, notable improvements have been observed in project management. Personnel changes have enhanced the capabilities of the licensee staff to cope with the complexities of managing the project. Enhancements have been implemented in Quality Assurance program procedures and Quality Control inspection has improved with additional training, clearer definition of inspection attributes, and increased attention to detail. The project management has attempted to create a philosophy among the craft to fabricate installations correctly rather than relying on QA/QC to detect deficiencies.

Because of difficulties experienced in retaining qualified personnel, it is necessary for the site to implement measures to offset high levels of personnel turnover. Increased supervisory oversight of job performance and augmented training to quality requirements appear to be needed. Project management attention is necessary to ensure that trained, qualified craft and quality inspectors are available to support project schedules without impacting hardware quality.

Hardware reinspection programs have been established to determine the adequacy of in situ installations. The NRC has been presented with the interim findings of those efforts, and the engineering analysis associated with the noted deficiencies. While the licensee analysis shows that most concerns are acceptable-as-is, the impact of the findings on a determination of overall hardware quality remains to be provided.

Deficiencies have been detected which involve primarily electrical equipment supplied by numerous vendors. The problems indicate that the source inspection activity was not properly performed and has allowed sub-standard equipment onsite. Measures are required to assure the acceptability of these components and to address the extent of vendor equipment deficiencies.

In some instances site initiated corrective action programs have not been totally implemented, in that long term actions have not always been effective. This may result from the lack of a comprehensive site commitment tracking system to monitor and assess corrective action effectiveness.

Review of design change documents indicates that greater attention needs to be paid to assuring the clarity and technical acceptability of the design changes. Further attention is required to verify that licensing commitments relative to component QA level classification are accurately translated to the site design documents. Better communication is needed between engineering and quality personnel during the development of inspection plans.

A high level of management attention is now required to resolve the outstanding NRC deficiencies and to assure complete licensee verification and timely closeout. To support the licensee schedule for plant licensing, the pace of deficiency closeout must rapidly accelerate.

B. Facility Performance

	Functional Area	Category Last Period	Category This Period	Recent Trend
		(10-1-82 - 9-30-83)	(10-1-83 - 1-31-85)	
A.	Containment and other Safety Related Structures	2	2	Consistent
B.	Piping Systems and Supports	3	2	Improving
C.	Safety Related Components-Mechanical	2	1	Consistent
D.	Support Systems	Not Assessed	1	Consistent
E.	Electrical Equipment and Cables	2	3	Consistent
F.	Instrumentation and Control Systems	2	2	Consistent
G.	Licensing Activities	2	2	Consistent
H.	Project Management/Quality Assurance	3	2	Improving
I.	Nondestructive Examination	Not Assessed	2	Improving
J.	Engineering	Not Assessed	3	Improving

IV. PERFORMANCE ANALYSIS

A. Containment and Other Safety Related Structures (15%)

1. Analysis

The licensee has essentially completed the installation of structural steel and structural concrete.

Inspection activity has examined structural steel installations; high strength bolting; concrete placement; structural welding and welder qualifications; revetment ditch installation; concrete anchor bolts; and the reactor building enclosure.

During the previous SALP period, AISC high strength bolting criteria were not properly implemented onsite.

Inspections have identified additional examples involving Quality Control (QC) acceptance of structural steel bolted connections that violate AISC acceptance criteria. Overall QC adherence to inspection procedures has not assured the compliance of installed beam connections with AISC criteria. NRC examination of connections accepted by SWEC QC within primary containment indicated the presence of oversized hole geometries for which hardened plate washers were not appropriately provided. Further, NRC examination of the Control Rod Drive Restraint Beam identified that Reactor Controls Inc. (RCI) personnel had not erected and inspected the beam connections consistent with guiding AISC criteria since requested hardened washers were not used. While the specific hardware installations questioned by the NRC have been addressed, further licensee verification measures are necessary to establish the adequacy of structural steel connections. More vigorous final QC turnover inspections are necessary to address the problem.

Vendor QC and SWEC Procurement Quality Assurance (PQA) programs for structural weld inspections have not been appropriately implemented since the NRC identified undersized Cives shop welds. The licensee has instituted a sampling reinspection of Cives weldments to identify the extent of the deficiencies. Engineering has analyzed the identified deficiencies and found them to be acceptable, however, the third party assessment has recommended further re-inspection efforts to resolve this concern. Further examples of inadequate source inspection are discussed in functional areas C and E.

Licensee activities during inspections of concrete pours and structural steel welds made onsite were observed to be acceptable.

2. Conclusion

Category 2, Consistent.

3. Board Recommendation

NRC

- Reduce level of inspection consistent with level of licensee work activities.
- Monitor licensee resolution of AISC bolting deficiencies (85-99-01).
- Monitor licensee resolution of inadequate Cives shop welds (85-99-02).

Licensee

- Investigate necessity to perform more vigorous structural steel final QC turnover inspections.
- Determine acceptability of Cives shop weldments.

B. Piping Systems and Supports (20%)

1. Analysis

During the previous SALP period, concerns were identified regarding inadequate review of ITT-Grinnell (ITT) work planner packages. The licensee has implemented effective measures in response to those concerns as no further problems have been detected with deficient planner packages.

Major activity has proceeded on the installation of large and small bore piping and the associated supports. Safety related flushing and hydrostatic tests have been performed on completed piping.

ITT QC inspectors have not performed pipe support inspections in accordance with their documented procedures. The NRC has identified instances in which attributes like clearances, gaps, hanger hardware and welding have not been properly inspected. The specific deficiencies have been documented and reworked. In addition, ITT has instituted a program to reinspect welding and mechanical attributes on pipe supports that were accepted by QC prior to December 1984. Since inspection plans were not followed, it appears that the inspectors were not familiar with the inspection requirements. Given the high rate of personnel turnover, augmented training and supervisory oversight programs are necessary to ensure proper inspection conduct.

Of greater concern in two instances, was that the pipe support inspection plan was deficient since essential inspection attributes were not explicitly identified. The complexity and length of typical engineering specifications necessitates that all pertinent inspection attributes be extracted such that they are clearly defined for inspection personnel. It is essential that QC and engineering personnel review the installation specification to ensure that all critical attributes are captured within the associated inspection plans. The presence of an excessive gap was identified by NRC examination of an accepted pipe support baseplate. Shims were added behind the baseplate, the inspection plan was modified to incorporate the necessary inspection attribute, and a sampling reinspection was performed to insure compliance with the engineering requirements for gap dimensions. A second instance was identified by the NRC involving the thread engagement of a spring support bar which was not verified by QC. The inspection plan was amended to include the requisite attribute and a number of supports were reinspected to ensure compliance.

Construction personnel have not adhered to quality requirements during installation activities. Such deviations represent the potential for adverse impact upon the quality of installed hardware. Examinations of in-process work activities by the NRC identified an instance where a Tee-quencher base stand was not installed in accordance with engineering directives and a hold point was bypassed during the erection of pipe whip restraints. The lack of process control is attributable to insufficient craft supervision of work activities and inadequate training of craft personnel to ensure that quality requirements are clearly understood.

The Quality Performance Management Program (QPMP) has led to improved acceptance rates of pipe and support welds. However, the acceptance goals have not been achieved, and the reject rate on repair welding remains excessive (approximately 40%). The licensee has dedicated engineering and construction resources to study the problem. Special qualification tests were performed for selected welders. These highly trained craft personnel left the site after they received the additional training. The licensee efforts appear to be comprehensive, but a key ingredient required to achieve the project goals is the retention of highly qualified individuals in both the construction and quality areas.

NRC examinations of SWEC small bore piping and supports have found high quality work. The site machine welding program and welder qualification programs have been performed in accordance with the ASME code.

2. Conclusion

Category 2, Improving.

3. Board Recommendation

NRC

- Continue increased inspection coverage.
- Monitor repair welding effects on piping base material (85-99-03).
- Monitor licensee control of in-process activities (85-99-04).
- Monitor QC inspection training activities (85-99-05).

Licensee

- Review QC inspection plans relative to engineering criteria.
- Increase craft supervision and QC surveillance of in-process work activities.
- Perform enhanced QC inspector training and increase supervisory overview.
- Continue management attention to improve acceptability of large bore welding.

C. Safety Related Components-Mechanical (7%)

1. Analysis

Plant components such as pumps, motors and heat exchangers have been generally installed in accordance with design requirements.

NRC examination of installed plant components indicated satisfactory QC inspection for configuration and anchorage attributes. Major rework of the Main Steam Isolation Valves was monitored and found to be well controlled.

The licensee has implemented a strong internal deficiency identification and reportability system as indicated by the four 10 CFR 50.55(e) reports that have been made regarding inadequate material certifications for valve bodies.

Further deficiencies in source inspection activities were identified by the NRC involving a Service Water Strainer shipped to the site with inadequate top bolt thread engagement. General Electric (GE) had shipped a motor with an incorrect voltage rating to the site. Vendor QC and SWEC PQA did not detect the nonconformances, and the site receipt inspection is only performed to detect equipment damage in transit. Additional site overview of equipment source inspection characteristics is necessary to provide assurance of hardware adequacy.

During the previous SALP, concerns were identified with the Preventive Maintenance (PM) program implementation. During the current assessment, there were continuing concerns involving the transfer of an instrument rack from SWEC to Johnson Controls Inc. (JCI), during which the appropriate PM requirements were not implemented in a timely manner. Ineffective coordination of actions taken by the various groups involved in the equipment transfer was apparent. Sufficient interface controls were not imposed to ensure continuity of PM measures. The NRC also found that the warehouse Level A storage levels were not maintained and that the RPV in place PM requirements were not met. A recent inspection identified standing water within a heat exchanger and particulate contamination of various systems. While the observed deficiencies apparently have not resulted in the damage to any equipment, the PM program has not been effective. Greater management attention is required to assure that plant equipment is properly maintained during the construction phases.

2. Conclusion

Category 1, Consistent.

3. Board Recommendations

NRC

- Monitor Preventive Maintenance Program (85-99-06).

Licensee

- Maintain high level of management attention for Preventive Maintenance Program.
- Increase site verification of vendor inspected equipment characteristics.

D. Support Systems (4%)

1. Analysis

The Support Systems area includes Heating Ventilation and Air Conditioning (HVAC), fire protection, radwaste and fuel storage and handling. No violations were identified during NRC inspections.

The NRC inspection program has found that installed HVAC hardware is in conformance with the design requirements. Satisfactory licensee overview has ensured high quality results from the HVAC Contractor, Schneider Power Corporation (SPC). Inspection further showed that FSAR commitments for fire protection system piping and supports was satisfactorily implemented at the site.

SWEC QC inspectors deviated from their QA program by using hand sketches to conduct some QC inspections. The inspectors had transcribed data from design documents to a hand sketch in order to carry a single piece of paper to the field. That process can result in improper QC acceptance of field hardware. While the practice was immediately halted, the extent to which it was employed remains under licensee investigation.

2. Conclusion

Category 1, Consistent.

3. Board Recommendation

NRC

- Continue Routine Inspection.
- Schedule timely Appendix R plant review (85-99-07).

Licensee

- Determine extent to which hand sketches were relied upon to perform inspections.

E. Electrical Equipment and Cables (11%)

1. Analysis

Construction activity has remained high. Raceway installation of tray and conduit continued. Large amounts of cable were pulled and terminated. Equipment has been energized to support the test program efforts.

Early in the assessment period, deficiencies were identified in electrical QC inspection plans. Functional area B describes other NRC identified concerns relative to inspection plan adequacy. Cable separation criteria were not met and the QC inspection plans did not provide sufficient guidance for items such as equipment bolting and raceway identification. The specific deficiencies were re-inspected and reworked as appropriate and the inspection plans were amended to incorporate the missing attributes.

More recently, an additional electrical separation problem was identified involving conduit runs that violated the one inch separation criteria of Regulatory Guide 1.75.

Fourteen of fifteen 10 CFR 50.55(e) reports in this area were caused by off-site deficiencies. Several pieces of electrical equipment contained deficient vendor internal wiring. The scope of the vendor wiring deficiencies appears to be generic to all site electrical equipment. The SWEC Procurement Quality Assurance function did not effectively ensure proper vendor performance. Additional source inspection deficiencies are discussed in functional areas A and C. All of the equipment has been delivered making it a site problem to resolve. A program has yet to be developed to guide the reinspection of vendor wiring. It should be noted that a large number of these problems arose prior to this assessment period as a result of previous management programs.

Interviews of site QC personnel have indicated that a typical work week is on the order of 70 to 80 hours. Given that the electrical inspection function uses a relatively complex set of inspection criteria, the excessive hours could impair inspector performance. Supervisory overview of inspection conduct is encouraged to assure acceptable inspection.

2. Conclusion

Category 3, Consistent.

3. Board Recommendations

NRC

- Monitor inspection to ensure schedular pressures do not degrade inspection effort (85-99-08).
- Review licensee remedial actions to rectify vendor deficiencies (85-99-09).

Licensee

- Assess quality levels of vendor supplied equipment internal wiring.
- Assure adequate QC staffing to accommodate construction schedules.

F. Instrumentation and Control Systems (5%)

1. Analysis

The pace of construction activity has been high. Instrument tubing and supports installation are complete at many locations. Instrument racks and transducers have been installed in the plant.

Early in the assessment, wiring separation problems were identified throughout the PGCC panels. The entire Power Generation Control Complex (PGCC) was inspected by GE and SWEC personnel to identify all locations of electrical separation problems. The inspection plans have been modified to require clear documentation that the wiring complies with Regulatory Guide 1.75 or that the compliance will be obtained at a later date through the installation of barriers. Additional concerns regarding the acceptability of the PGCC internal wiring with respect to terminations and harness supports, and lack of as-built verification were identified during NRC inspections.

The equipment release for the PGCC was reviewed. The release was allowed to proceed even though it was deficient with respect to attributes which QA had previously documented as problems on an earlier release. The PGCC release involved an extensive number of open work items, for which construction efforts are continuing. It appeared that the PGCC milestone completion date was the motivating force behind the release in lieu of quality and work control considerations.

Conscious licensee management decisions allowed the PGCC installations activities to proceed in a manner that was not compatible with the achievement of quality goals. These decisions were made prior to or early in the assessment period and further evidence of these types of decision making processes have not been observed during the remainder of the assessment period.

Damage to installed and accepted instrument tubing was detected by the NRC at numerous locations. Physical barriers have since been erected to protect the tubing and instrument racks. Site warnings have been transmitted to the craftsmen regarding precautions required to protect the installed tubing. The licensee efforts to address this problem originally were inadequate to fully correct the observed problems until NRC findings prompted more extensive corrective actions. Increased management oversight is required to ensure that adequate corrective actions are implemented in response to NRC identified concerns.

NRC review of licensee performance of instrument tubing installation, support material traceability, review of JCI QA procedures, and mounting of two instrument racks was satisfactory.

2. Conclusion

Category 2, Consistent.

3. Board Recommendation

NRC

- Arrange for management meeting to discuss actions taken to resolve PGCC problems (85-99-10).

Licensee

- Prepare summary of actions implemented to resolve PGCC wiring deficiencies.
- Continue to monitor tubing damage and institute further controls as necessary to preclude additional damage.

G. Licensing Activities

1. Analysis

The applicant's performance was assessed with regards to the responses to staff requests for information during safety and environmental reviews, responses to outstanding and confirmatory issues in the Draft Safety Evaluation Report (DSER), comments to the Draft Environmental Statement (DES), and assessment of the Safeguards licensing area.

During the assessment period, the management of NMPC was involved in many phases of licensing activity. Decision making was usually at a level that insured adequate management review. However, there were some areas, as noted below, where increased management attention was considered necessary during the assessment period.

- The applicant was requested to resolve design differences detected during the review of the Instrumentation and Control (I&C) area where the FSAR did not agree to the plant drawings.

- The applicant was requested to verify the verbatim incorporation of staff reviewed technical responses into the FSAR following NRC detection of an instance in which this had not been done as agreed.

- Based on applicant responses to the DSER and DES it was determined that the FSAR and the Environmental Report (ER) did not adequately reflect the correct situation, requiring resolution.

The applicant's management and staff have demonstrated sound technical understanding of issues involving licensing actions. Technical expertise has been evident. The applicant's commitments have reflected a conservative approach, particularly in the fire protection area, to provide for adequate level of safety.

When the applicant has deviated from staff guidance, sufficient technical justification has generally been provided to support such deviations. Within the area of geology, the applicant's technical approaches were not always complete, and extensive NRC staff effort was required to elicit the licensee's relevant data and analysis needed to reach resolution of problem areas.

The applicant has extended the break exclusion zone for the Reactor Water Cleanup (RWCU) lines to a valve located over 50 feet from the containment boundary. The NRC staff has indicated that the break exclusion extension is not consistent with the intent of the Standard Review Plan (SRP). The NRC staff has requested that the applicant review the effects of a postulated break at the junction of the RWCU line for pipe whip and jet impingement considerations.

The NRC staff has detected discrepancies between the applicant's response to separation criteria concerns resulting from NRR inquiries and to the Construction Appraisal Team (CAT) inspection. NRR is presently coordinating with the Region I inspection personnel to ensure a consistent review of electrical separation commitments and implementation of those commitments at the site.

The applicant has taken the initiative in the correction of a number of technical problems. The Main Steam Isolation Valve (MSIV) body interior surfaces have been clad with a corrosion resistant alloy. The modification was initiated in response to corrosion concerns identified at the Liebstadt, Switzerland plant during preoperational testing.

There has been a high level of licensing activity to support issuance of responses to the NRC staff as a result of FSAR and ER docketing; responses to open and confirmatory issues of the DSER; and comments to the DES.

The major licensing activity has been in the safety area. A number of responses were not received in a timely manner which adversely impacted the licensing schedule. The responses to DSER outstanding issues in the Containment Systems area were particularly late. A number of the formal responses in the areas of Power Systems, Geology, and Procedures were lacking in thoroughness, depth, or were significantly different from the proposed responses discussed during meetings or conference calls. Compared with experience on other cases, these submittals required more than the normally expected number of re-submissions to obtain acceptable resolutions. The applicant was additionally not responsive to NRC requests to perform a review of the DSER, FSAR and the actual plant design for the Instrumentation and Control area. Following management discussions between the NRC and applicant, the responsiveness was improved in the latter stages of the assessment period.

The staff conducted several audits at the plant site, the applicant's corporate offices or the Architect/Engineer's offices. The applicant provided sufficient support for the audits. The information provided by the applicant at the audits was generally complete and thorough.

The NRR evaluation of plant staffing is still in process. The Security Organization positions and responsibilities are well defined. The planned security staff is considered to be more than ample to implement the facility protection program.

The safeguards licensing review indicated consistent evidence of management planning. Responses from the applicant were technically sound. Timely resolution was obtained to staff concerns. The guard qualification and training program, as proposed, was satisfactory.

The NRR evaluation of the description of the applicant's training program discussed in the FSAR indicated no outstanding shortcomings.

2. Conclusion

Category 2, Consistent.

3. Board Recommendation

NRC

- Give particular attention to timely issuance of the Technical Specifications.

Licensee

- Prior to initial licensing, the applicant should assure full consistency and completeness among the as-built plant, the FSAR, the SERs and the Technical Specifications.

H. Project Management/Quality Assurance (16%)

1. Analysis

Extensive changes have been implemented to improve the licensee management control of site activities. Management Analysis Company (MAC) has been retained to provide experienced managerial personnel for NMPC. Site Quality Assurance programs have been upgraded.

The project does not currently have an effective site commitment list to track prior commitments for periodic auditing to ensure that the corrective actions are indeed ongoing. This has resulted in the identification of several problems by the NRC in which quality commitments or corrective actions have had inadequate long term implementation. Examples which indicate this include recurring excessive QC reject rates, inadequate measures to preclude further damage to instrument tubing, and the failure to train the craft to adhere to engineering directives. The third party assessment found further evidence that the project has difficulty implementing effective corrective actions in response to deficiencies identified by external organizations, such as the NRC.

There appears to be a problem controlling craft personnel which is also discussed in functional area B. The particular NRC identified problems involved inadequate control of issued weld filler material; poor primary containment houseclearing and fire prevention measures; and unauthorized construction rework without QC notification. In these cases, prompt steps were implemented by licensee management to correct the problems.

Several unresolved concerns deal with problems that resulted from inadequate communications between site organizations. Poor feedback was identified between SWEC QC supervision and the QC inspectors. The inspectors requested clarification of proper implementation of the QA procedures, and the supervisors did not properly respond to the inspector questions. A lack of control was observed between organizations making attachments to structural steel members. The inspection status of the steel is not always readily available. The licensee organizations, QA and engineering, have not yet reached agreement on the inspection required to comply with Regulatory Guide 1.29. The items in question are non-safety related items suspended over safety related equipment. At this time, only a surveillance inspection which does not appear to fulfill the licensing commitments is performed .

The licensee has instituted a hardware reinspection effort. Due to the problems identified with previously QC accepted installations not in compliance with the engineering design, sample reinspections were performed to ascertain the acceptability of the field hardware. Licensee engineering has reviewed the data and determined the majority of the problems are not detrimental with the exception of mechanical fastener problems. The assurance must be gained by the NRC that sufficient licensee reinspection activity has been performed to detect the worst case deficiencies, that proper analysis has been performed on the resultant data, and that the current first line inspections are properly performed.

Satisfactory licensee performance was observed during review of the implementation of the Quality First program, document control activities in the PGCC area involving GE and SWEC design changes, development of NMPC surveillance program and detailed surveillance checklists, resolution of nonconformance reports by engineering, development of the new construction QA program and infusion of new QA management personnel.

As noted in section I.C, the licensee has instituted a major management reorganization and has implemented numerous actions to assess the quality of previously performed work and to ensure that current installations meet the quality requirements.

The licensee has developed a Quality Performance Management Program (QPMP) which monitors the quality status of the site. Key parameters such as quantity installed, quantity inspected, and QC acceptance rates are monitored for construction hardware commodities. The program monitors outstanding design changes and open QA deficiency documents. Trending is performed on some of the documented nonconforming conditions. Region I is monitoring the utilization of QPMP by the licensee through management meetings in conjunction with review of QPMP data and attendance at the licensee QPMP meetings. The QPMP appears to be functioning well as a management tool to diagnose problems and to assess the adequacy of corrective actions.

Quality Control organizations have experienced a significant problem in attracting and retaining qualified personnel to keep pace with the construction effort. This has resulted in extensive use of inspector overtime which could reduce their effectiveness. A positive benefit of the CAT, INPO and re-inspection programs on the quality staff has been that QC inspectors indicate they currently receive management support. Recent review indicates that the project management team appears to be functioning well, that significant program improvements have been made and better lines of communications have been established. The end result is that the site programs are able to identify and resolve project quality issues.

2. Conclusion

Category 2, Improving.

3. Board Recommendation

NRC

- Continue to monitor implementation of QPMP effort (85-99-11).
- Evaluate licensee reinspection results (85-99-12).
- Monitor adequacy of long term corrective action implementation (85-99-13).

Licensee

- Use QPMP as a dynamic management tool to identify and trend quality problems.
- Establish control over contractor interfaces and develop confidence level of historical hardware in light of QC deficiencies.
- Ensure schedular pressures do not adversely impact quality goals.
- Establish effective site commitment tracking to ensure implementation of long term corrective actions.
- Expedite resolution of NRC open items and provide complete verification of associated corrective actions.
- Resolve Regulatory Guide 1.29 inspection issue.

I. Nondestructive Examination (27%)

1. Analysis

Nondestructive Examination (NDE) is a new functional area. Previously, NDE was assessed in the piping and pipe supports area. During the previous SALP period, there were concerns regarding ITT Grinnell (ITT) radiography operations. Of particular concern was that film had been artificially altered. Given the extensive inspection effort and significant problems identified during the current assessment, NDE was assigned a separate functional category.

In concert with the rapid construction installation pace of piping and supports, NDE has seen substantial activity during the assessment period. The first line NDE is performed by Reactor Controls, Inc. (RCI) on the Recirculation and CRD piping. ITT performs NDE on the remaining safety-related piping systems. In light of the extensive problems that were previously identified, this section covers the progress made to date to correct those deficiencies.

Early in the assessment, major deficiencies were identified in the ITT radiography program. The deficiencies included weld quality, film quality, and inadequate documentation. The overview of NDE activities by Stone and Webster Engineering Corporation (SWEC) and Niagara Mohawk Power Corporation (NMPC) was inadequate as some similar problems had been identified by site QA/QC, yet timely and effective corrective actions were not implemented to correct the deficient NDE programs.

The conclusion was that ITT radiographic interpreters had not adequately evaluated radiographic film and reader sheets for weld quality, film quality and completeness to assure compliance with ASME Section III and V requirements. Further problems were identified with unsatisfactory liquid penetrant examinations of stainless steel piping.

In response to the identified deficiencies, numerous corrective actions were implemented to enhance day to day NDE operations and to assess the adequacy of previously examined hardware:

- ITT replaced their liquid penetrant technicians and reexamined all safety related liquid penetrant inspected stainless pressure boundary weldments.

- Review of ITT shop and field radiographic film by ITT/NMPC NDE personnel to assure adequacy of weldments and documentation.
- Increased training of ITT radiographers
- Repair of deficient weldments
- Retention of all ITT radiographic film
- Assignment of the ITT Level III to the site
- Increased SWEC and NMPC surveillance of NDE activities

A subsequent NRC inspection found that marginal corrective actions had been implemented by the licensee in response to the radiography problems. The adequacy of the ITT and NMPC file re-review was questioned as an unacceptable transverse indication was found by the NRC. A further problem was that Inservice Inspection weld preparation had resulted in minimum wall violations. The extent of the problem remains under licensee review.

The radiographic problems appear to be attributable, in part, to the fact that there is not a site Level III charged with responsibility for all NDE operations.

The licensee subsequently directed SWEC Boston to provide NDE personnel to again re-interpret all ITT film in the vault. During the course of the SWEC film review, two welds were identified for which the wrong weld had been radiographed in lieu of the designated weld. The vault contained two sets of radiographic film marked to indicate two dissimilar weldments when in fact only one joint had been shot twice. The licensee identified a singular radiographer at fault in both cases but has also detected the lack of radiography procedural controls. A sample re-radiography program is underway to assess the scope of this construction deficiency.

More recently, an inspection conducted at the end of 1984 did not identify any further problems in the site NDE programs. The inspection identified satisfactory corrective action implementation for the outstanding deficiencies, with the exception of the duplicate film concern for which licensee actions are underway.

2. Conclusion

Category 2, Improving. The licensee has instituted numerous program enhancements over the assessment period.

3. Board Recommendation

NRC

- Review corrective actions in radiography, particularly the duplicate film concern (85-99-14).
- Evaluate necessity to schedule NRC van inspection prior to OL (85-99-15).

Licensee

- Continue aggressive oversight of NDE activities.
- Resolve outstanding concerns as expeditiously as feasible.
- Evaluate benefits of establishing site NDE Level III position.

J. Engineering (5%)

1. Analysis

Engineering was not previously assessed as a unique functional area. During the course of both team and routine resident inspections, a substantial effort has been expended in the review of the design and design change process.

The SWEC site engineering workforce has greatly expanded to support construction efforts. The rate of design change issuance has remained high. Engineering activities at the project design office are tapering off. Significant areas of work remain in the stress reconciliation of ASME piping and the resolution of equipment qualification testing.

Inadequate control of the design change process was a problem as indicated by design change documents not completely reviewed to assure clarity, many design changes issued to revise or correct previously issued design documents, design changes not incorporated into drawings in a timely manner, and design change documents used to resolve nonconformances. The design review process has subsequently been enhanced. A trending process is in place to track release of deficient design change documents for correction of root causes. Site engineers were retrained on the proper use of nonconformance reports to avoid an inadvertent bypass of the QA program. Greater technical and management overview is required of the design change control process.

The NRC has identified plant components that were not properly designed as evidenced by the identification of the diesel generator cranes and control room partitions that had not been designed to seismic standards. The items were redesigned to seismic criteria and a total plant review has been performed to assure that no further instances of that type can exist in safety related plant areas.

Fifteen out of sixty-five Construction Deficiency Reports (CDRs) were assessed to the Engineering area. The SWEC Engineering Assurance technical audit identified that the construction drawings for the RHR heat exchanger bracing had not been drawn according to the computer analysis bracing details. This is a significant deficiency in which the audit process identified a design control problem which had direct hardware consequences. Several of the deficiencies involved the failure of the design to accommodate either hydrodynamic or seismic loadings.

The NRC has identified two cases in which engineering drawings have not properly classified safety-related structures as such. The engineering misclassification results in the lack of required QA/QC overview of the component during installation. The particular concerns relate to the Reactor Building roof and a refueling crane which was designed by GE and described in the FSAR as a safety-related item. Due to a design interface problem, SWEC had issued direction to erect the crane as a non-safety item onsite.

Concerns were further identified in the following areas: ITT apparently did not backfit more stringent design requirements promulgated in design changes against the acceptance criteria used to previously accept hardware installations; inadequate design control was enforced over design interfaces for attachments to structural steel to ensure adequate beam stiffening; inadequate review of field installations was performed by engineering to assess the total scope of the problem prior to issuance of a design change; the licensee maintained no formal tracking mechanism to ensure that the design changes were in fact implemented by SWEC or GE; design drawings had improperly incorporated design changes; site engineering does not correlate attachment points of small bore support changes issued on ACN's with the associated embedment drawing thus resulting in an inadequate engineering resolution of a nonconforming condition, and some engineering personnel had not received all the required formal training classes.

In summary, the above findings have resulted in a lack of confidence in the design change process. The technical content of some design changes has been lacking. Inconsistencies have been detected between FSAR QA requirements and the site issued design QA categorization. Engineering and QC personnel have not communicated to ensure that inspection plans capture the requisite design verification attributes as discussed within functional areas B and E. To gain confidence in the engineering products, further design reviews in the form of Engineering Assurance audits, Technical FSAR verification, and licensee engineering overview are necessary.

2. Conclusion

Category 3, Improving.

3. Board Recommendation

NRC

- Monitor adequacy of design change documents (85-99-16).

- Region I and IE continue active monitoring of SWEC Engineering Assurance efforts (85-99-17).

- Conduct further inspection of FSAR content versus design documents and monitor FSAR verification process (85-99-18).

Licensee

- Examine implementation of IE Bulletin requirements to assure technical resolution of identified problems.

- Perform enhanced verification of drawing incorporation and exercise greater technical oversight of design change process.

- Investigate design interfaces to ensure proper communication of component QA categorization.

- Conduct sufficient verification of FSAR commitment translation to ensure plant is built in accordance with licensing commitments.

V. SUPPORTING DATA AND SUMMARIES

A. Investigations and Allegations Review

During the assessment period, 14 allegations were received of which 7 were unsubstantiated. The remainder are described below.

Three formal investigations were conducted during the assessment period. The following allegations were investigated:

-- Confrontation between an electrician and electrical QC inspector regarding PGCC electrical termination reviews, remains under investigation.

-- Harassment of NMPC QA auditors for identification of quality concerns, remains under investigation.

-- Harassment of a QC inspector by site engineering, remains under investigation.

Routine inspection followup was performed in response to selected portions of allegations:

-- Deficient JCI tubing installations and other procedural deficiencies. The licensee had corrective actions in place in address the concerns.

-- NMPC QA lead auditors not properly certified. Inspection substantiated the validity of the licensee audit findings. The licensee reviewed all lead auditor certifications and audit reports to address deficient certifications.

-- Concerns that electrical termination bolting hardware could not be verified as silicone bronze. The hardware concerns were not substantiated. However, the lack of communication between QC supervisors and QC inspectors was apparent.

-- Alleged improper electrical terminations and bypassed QC holdpoints. The licensee identified instances in which terminations were performed without the requisite QC inspection and reported under 10 CFR 50.55(e). The licensee performed reinspections of bus bar material to determine the adequacy of the bolting material.

-- Audit findings had been watered down between a draft and final audit report. The audits in question were reviewed and a determination made that the technical concerns had been fully identified within the final report. In addition the licensee surveillance program had been totally restructured to address the noted deficiencies.

-- Alleged that J-bevel weld preparations cannot be inspected by QC. Determined that QC was not provided with radius gauges, which were subsequently purchased by ITT and issued for use. The machining operation resulted in an out of tolerance J-bevel, which was found acceptable by engineering.

-- Alleged that the project director intimidated a group of ITT QC inspectors. The project director was counseled at length by NMPC QA on QA organizational freedom. Site directives were issued with regards to QA independence. The QC inspectors were assured that no retributions were forthcoming, and they subsequently stated their concern was satisfied.

B. Escalated Enforcement Actions

As a result of a Construction Appraisal Team (CAT) inspection conducted in November - December, 1983, which identified extensive site quality problems which are discussed in Section IV of this report, an Enforcement Action (EA) was issued on March 20, 1984. The EA consisted of a Notice of Violation, an Order, and a proposed Civil Penalty.

C. Management Conferences

In addition to the two formal management conferences listed below, there were numerous discussions between NRC management and project management during the assessment period.

a. February 22, 1984 - A Management meeting was held to discuss the management reviews that had been performed prior to the CAT inspection. The planned licensee reorganization was presented. Additional discussions were held with regards to licensee implementation of corrective actions in regards to CAT and SALP concerns.

b. November 14, 1984 - A Management meeting was convened at NRC request to review the corrective actions implemented in response to CAT. The results of the third party MAC audit were reviewed. The development of the site Quality Performance Management Program was reviewed. The licensee discussed QA verification activities of previously installed hardware relative to the design documents. Licensee actions to address the site radiography deficiencies was presented.

D. Construction Deficiency Reports (CDRs)

Sixty-five (65) CDR's were reported by the licensee during the assessment period. One was not reportable according to the licensee. Numerous CDR's were evaluated at length by NMPC and found to not pose adverse consequences to eventual plant operations. However, since extensive efforts were expended to reach those determinations, the reports are still classified as 10 CFR 50.55(e) items. These deficiencies are listed in Table 1 and were selectively evaluated and discussed as part of the appropriate functional area.

Analysis of the CDR's for causal linkage has resulted in the identification of the following linked chains:

CDRs 84-00-02, 84-00-06, 84-00-29, 84-00-39, 84-00-49, 84-00-53. The denoted CDR's apply to the conduct of deficient weld examinations through visual and NDE. The subject welds were found to be not in compliance with either the applicable codes or design criteria. The problems are pervasive in nature and involve both pipe and structural welding. The root cause problem was a failure on the part of the personnel involved in welding and inspection to follow applicable procedures.

CDRs 83-00-22, 84-00-13, 84-00-40. 85-00-03. The listed CDRs involve the failure of engineering to adequately account for the effects of a seismic design basis event.

CDRs 84-00-14, 84-00-18, 84-00-25, 84-00-31, 84-00-32, 85-00-01. Site inspection of electrical equipment has identified the failure of equipment vendors to properly install the internal wiring. Electrical separation violations and workmanship deficiencies were involved.

TABLE 1

CONSTRUCTION DEFICIENCY REPORTS (10/1/83 - 1/31/85)

Type of Deficiencies

A. Personnel Error.....20
B. Design Error.....20
C. External Cause.....7
D. Defective Procedures.....2
E. Component Failure.....14
F. Fabrication Error.....1

CONSTRUCTION DEFICIENCY REPORTS CORRELATED BY FUNCTIONAL AREA

	AREA	CAUSE CODE	NUMBER/ TOTAL
A.	Containment and Other Safety-Related Systems	1/A, 1/F	2
B.	Piping Systems and Supports	5/A, 3/C, 1/E	9
C.	Safety-Related Components-Mechanical	4/A, 2/B, 1/C, 3/E	10
D.	Support Systems	3/E	3
E.	Electrical Equipment and Cables	7/A, 2/B, 2/C, 4/E	15
F.	Instrumentation and Control Systems	2/A, 1/B, 1/C, 3/E	7
G.	Licensing Activities		0
H.	Project Management/Quality Assurance	1/D	1
I.	Nondestructive Examination	1/A, 1/D	2
J.	Engineering	15/B	15
			64

TABLE 2
INSPECTION HOURS SUMMARY
(10/1/83 - 1/31/85)

	Functional Area	Hours	% of Time
A.	Containment and other Safety-Related Structures	788	15
B.	Piping Systems and Supports	1103	20
C.	Safety Related Components-Mechanical	382	7
D.	Support Systems	234	4
E.	Electrical Equipment and Cables	574	11
F.	Instrumentation and Control Systems	255	5
G.	Licensing Activities	---	--
H.	Project Management/Quality Assurance	896	16
I.	Nondestructive Examination	913	27
J.	Engineering	263	5
	Total	5408	100

TABLE 3
ENFORCEMENT DATA (10/1/83 - 1/31/85)

A. Number and Severity Level of Violations

Severity Level I	0
Severity Level II	1
Severity Level III	0
Severity Level IV	16
Severity Level V	5
Deviation	0
	22

B. Violation correlated by Functional Area

	Functional Areas	Severity Levels I	II	III	IV	V
A.	Containment and other safety related systems				4	
B.	Piping systems and supports				4	2
C.	Safety Related Components-Mechanical				1	
D.	Support Systems					
E.	Electrical Equipment and Cables					
F.	Instrumentation and Control Systems				1	1
G.	Licensing Activities					
H.	Project Management/Quality Assurance		1*		4	
I.	Nondestructive Examination				3	1
J.	Engineering				2	
	TOTALS		1*		19**	4

* Violation composed of deficiencies within Areas A-E, H,I and J

** Two Single violations composed of multiple examples within two areas, total of 17 Severity Level IV violations actually issued.

C. Summary

Inspection Report No.	Severity Level	Functional Area	Violation
83-16	IV	B	Nonconforming support welding accepted by quality control
83-18	II	H	Deficiencies with conduct of inspection activities,deficient radiography program, lack of licensee oversight audits, document control problems.
84-01	IV	B	Final inspected supports do not conform to design criteria
	IV	H	Inadequate implementation of site procedures for handling of potential construction deficiency reports
84-02	IV	H	Incorrect nonconformance report form is use
84-05	IV	J	Equipment in Category I plant areas not seismically designed.
84-06	V	F	Weld material not properly controlled
	IV	A	Post inspection rework not controlled for structural steel
	IV	A/B	Inadequate inspection of structural steel connnections and of pipe support attachment thread engagement
	IV	A	Inadequate structural steel inspection status system.
	IV	A	Deficient primary containment housekeeping and fire prevention measures
84-08	V	I	Radiograph reader sheets did not document interpretation of linear indication

Table 3

Inspection Report No.	Severity Level	Functional Area	Violation
	IV	I	Radiograph identified containing rejectable linear indication
	V	I	Weld violated minimum wall thickness requirements
84-09	IV	H	Inadequate application of corrective action to lower trended reject rates
	IV	I	Electrical penetration welds not properly examined
84-11	V	B	Whip restraint installation hold points by-passed
	IV	J	Inadequate control over promulgation of design change information
84-13	IV	C	Inadequate thread engagement of strainer top bolts
	V	B	Failure to maintain control of field issued weld rod material
84-18	IV	B	Excessive internal particulate contamination of piping system and inadequate preventive maintenance measures
	IV	F	Undersized welds on instrument rack
84-19	IV	B	Excessive gap behind pipe support baseplate
		F	Undersized weld on instrument tubing support
	IV	H	Lack of corrective action to preclude further damage to instrument tubing lines

Table 3

Inspection Report No.	Severity Level	Functional Area	Violation
		B	Pipe support installation not performed in accordance with engineering directive

TABLE 4
INSPECTION REPORT ACTIVITIES (10-1-83-1/31/85)
NINE MILE POINT, UNIT 2

INSPECTION REPORT NUMBER	INSPECTION HOURS	AREAS INSPECTED
83-13	14	Regional:Environmental protection program
83-15	28	Regional: Electrical cables, motor control centers and QA records
83-16	184	Resident: Equipment turnover, piping, pipe support, reactor building enclosure, CRD piping, fire protection, instrumentation QA program
83-17	166	Resident: RPV storage, hydraulic control unit installation, piping, pipe supports, welder qualification, HVAC systems
83-18	1920	I&E Hdq CAT inspection: welding, NDE, electrical, structural/civil, QA, mechanical
84-01	176	Resident: pipe supports, diesel generator cranes, reactor vessel internals, QA program
84-02	32	Regional: Cables, switchgear and QA records
84-03	28	Management meeting on licensee corrective actions for CAT findings
84-04	36	Regional: Concrete anchor bolts and structural steel welding
84-05	122	Resident: Electrical terminations, piping, pipe supports, QA surveillances, contractor audits, design control of non-safety related items suspended over safety related equipment

Table 4

INSPECTION REPORT NUMBER	INSPECTION HOURS	AREAS INSPECTED
84-06	237	Resident: Structural steel, weld material control, pipe supports, housekeeping, post inspection rework control
84-07	31	Regional: Large and Small bore pipe supports
84-08	662	Regional: NDE van inspection of ASME and structural weldments by independent examination
84-09	179	Resident: Corrective action programs, electrical penetrations, pipe whip restraints, component supports
84-10	30	Regional: Pre-operational security inspection
84-11	196	Resident: Document control, containment supports, design change installation, equipment preventive maintenance
84-12	Cancelled	
84-13	114	Resident: Design change control, revetment ditch, pre-op personnel qualifications, hydrotests, preventive maintenance, standby liquid control system, weld filler metal control
84-14	34	Regional: Welder qualifications, welding, welding records
84-15	202	Resident: Electrical cable separation, containment penetrations, diesel generator modifications
84-16	6	Regional: Radiological Control staffing

Table 4

INSPECTION REPORT NUMBER	INSPECTION HOURS	AREAS INSPECTED
84-17	30	Regional: Safety related equipment, installation, inspection of equipment, preventive maintenance
84-18	707	Regional: Construction Team Inspection, project management,QA, design control, welding, NDE, electrical,mechanical, structural/ civil
84-19	239	Resident: MSIV cladding operations, instrument tubing and support, small bore pipe supports, ITT pipe supports, concrete expansion anchors
84-20	9	Management meeting on licensee corrective actions to CAT and site radiography program
85-01(draft)	26	Regional: Preoperation Administrative controls

TABLE 5
NRR SUPPORTING DATA
(10/1/83 - 1/31/85)

1. NRR-Licensee Meetings

A large number of meetings were held with the applicant in Bethesda to resolve and/or discuss staff concerns. The meetings are documented within meeting summaries.

2. NRR Visits and Audits

Structural site visit and audit at Stone & Webster design office
Mechanical audit at Stone & Webster design office
Instrumentation and Control visit to General Electric design office
Auxiliary Systems site visit
Reactor Systems site visit
Second environmental site visit

3. Licensing Document Issued

Draft Environmental Statement

Draft Safety Evaluation Report

Safety Evaluation Report

4. Applicant Responses

Responses to request for information in the safety and environmental areas
Letters and FSAR updates to respond to DSER concerns
Comments to the DES