SALP RIII

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

Consumers Power Company

MIDLAND NUCLEAR PLANT, UNITS 1 AND 2
Docket Nos. 50-329; 50-330
Reports No. 50-329/82-14; 50-330/82-14

Assessment Period
July 1, 1980 to June 30, 1981

March 1982

CONTENTS

Docket No. 50-329
Docket No. 50-330

Consumers Power Company
ATTN: Mr. James W. Cook
Vice President
Midland Project
1945 West Parnall Road
Jackson, MI 49201

Gentlemen:

This is to confirm the conversation between Mr. D. J. Vande Walle and Mr. D. C. Boyd of the Region III staff scheduling April 26, 1982 at 1:00 p.m. as the date and time to discuss the Systematic Assessment of Licensee Performance (SALP) for the Midland Nuclear Plant, Units 1 and 2. This meeting is to be held at the Sheraton Hotel, One Jackson Square, in Jackson, Michigan.

Mr. James G. Keppler, the Regional Administrator, and members of the NRC staff will present the observations and findings of the SALP Board. Since this meeting is intended to be a forum for the mutual understanding of the issues and findings, you are encouraged to have appropriate representation at the meeting. As a minimum we would suggest Mr. J. D. Selby, President, Mr. R. J. Reynolds, Executive Vice President, or Mr. J. W. Cook, Vice President Midland Project and managers for the various functional areas where problems have been identified.

The enclosed SALP Report which documents the findings of the SALP Board is for your review prior to the meeting. Subsequent to the meeting the SALP Report will be issued by the Regional Administrator.

Enclosure 1 to this letter summarizes the more significant findings identified in the SALP Board's evaluation of the Midland Nuclear Plant, Units 1 and 2 for the period of July 1, 1980 to June 30, 1981.

If you desire to make comments concerning our evaluation of your facility, they should be submitted to this office within twenty days of the meeting date; otherwise, it will be assumed that you have no comments.

In accordance with Section 2.790 of the NRC's "Rules of Practice" Part 2, Title 10, Code of Federal Regulations, a copy of this letter, the SALP Report, and your comments, if any, will be placed in the NRC's Public Document Room when the SALP Report is issued.

Comments requested by this letter are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-5111.

If you have any questions concerning the SALP Report for the Consumers Power Company we will be happy to discuss them with you.

Sincerely,

J. A. Hind, Director
Division of Emergency Preparedness
and Operational Support

Enclosures:
1. Significant Findings
2. Midland SALP Report
(5 copies)

cc w/encls:
Resident Inspector, RIII

Enclosure 1

Significant SALP Report findings for the Midland Nuclear Generating Station.

General Observations

The Board notes improvements in the overall Quality Assurance program at the Midland site. An indepth team inspection, performed in May of 1981, indicates that Consumers Power Company has established an effective organization for the management of QA/QC activities at the site. The numbers and qualifications of personnel in the QA/QC organization and the overview and audit functions performed were found to be above that normally found at other construction sites.

During the July 1, 1980 to June 30, 1981, evaluation period the Licensee's performance in resolving technical and quality issues in the installation of piping and piping suspension systems (particularly small bore piping), in the pulling of electrical cables and in the handling of soils and foundation problems was less than desired. The licensee's QA/QC capabilities were not fully and effectively utilized as expected in these specific areas to insure adequate preplanning and timely review and control of quality activities.

The licensee's performance in most other area's has been satisfactory and a significant improvement has been achieved in the licensee's resolution of the heating, ventilating, and air conditioning problems identified in the previous evaluation period (SALP 1).

In the less technical, administrative areas, regarding corrective actions and reporting, the licensee has frequently demonstrated an argumentative attitude in their responses to NRC enforcement issues. This has resulted in management meetings with the licensee, subsequent to the SALP evaluation period, for further discussion and clarification of this area. Should the licensee offer strong responsible management conviction to resolving the reporting and corrective action issues, a turn-around in these areas can be expected.

Functional Area

Piping System and Supports

During the evaluation period, weaknesses were identified in the implementation of the quality assurance program. An Immediate Action Letter was issued May 22, 1981, pertaining to the design control and issuances of drawings for the installation of small bore piping and support systems. While in the process of reviewing and resolving these concerns, the licensee was found in noncompliance in another area. This resulted in issuance of a letter of understanding by the licensee for the control of modifications to small bore piping drawings which do not have committed Preliminary Design Calculations.

Electrical Power Supply and Distribution

The licensee had embarked on an ambitious "pulling schedule" commencing half way through the evaluation period. Prior to this, the NRC had verbally advised the licensee to have adequate number and quality of QA and QC personnel available when escalated electrical installation activities commenced. Seven items of noncompliance identified during the evaluation period indicated a lack of rigorous QC coverage. Subsequently, the licensee has increased the rigor and frequency of overview inspections, performed a detailed audit pertaining to material storage and brought upper management's attention to the findings, and is presently inquiring into the adequacy of electrical QC coverage. Both NRC and licensee attention should be increased.

Soils and Foundations

There had been considerable activity in the soils and foundations area during the past three years. The enforcement history indicates a lack of attention to detail by the licensee and a continuing inability on the part of the licensee to successfully implement proposed resolutions of the soils settlement issues. This performance has resulted in several management meetings both in the NRC Headquarters offices and in the regional offices to discuss these matters and to delineate the NRC enforcement posture to the licensee.

These regulatory concerns primarily focusing on the limited QA/QC coverage provided have been expressed in the past during the taking of soil borings and installation of dewatering wells and simular concerns have been expressed during the earlier stages of the remedial soils work. Both NRC and licensee attention should be increased.

I. INTRODUCTION

The NRC has established a program for Systematic Assessment of Licensee Performance (SALP). The SALP is an integrated NRC Staff effort to collect available observations and data on a periodic basis and evaluate licensee performance based upon these observations. SALP is supplemental to normal regulatory processes used to insure compliance to the rules and regulations. SALP is intended from a historical point to be sufficiently diagnostic to provide a rational basis: (1) for allocating future NRC regulatory resources, and (2) to provide meaningful guidance to licensee management to promote quality and safety of plant construction and operation.

A NRC SALP Board composed of managers and inspectors who are knowledgeable of the licensee activities, met on October 23, 1981 and March 23, 1982, to review the collection of performance observations and data to assess the licensee performance in selected functional areas.

This SALP Report is the Board's assessment of the licensee safety performance at Consumers Power Company's Midland Nuclear Power Plant, for the period July 1, 1980 to June 30, 1981.

The results of the SALP Board assessments in the selected functional areas were presented to the licensee at a meeting held April 26, 1982.

II. CRITERIA

The licensee performance is assessed in selected functional areas depending whether the facility is in a construction, pre-operational or operating phase. Each functional area normally represents areas significant to nuclear safety and the environment, and are normal programmatic areas. Some functional areas may not be assessed because of little or no licensee activities or lack of meaningful observations. Special areas may be added to highlight significant observation.

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

1. Management involvement in assuring quality.

2. Approach to resolution of technical issues from 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.

However, the SALP Board is not limited to these criteria and others may have been used where appropriate.

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

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 such 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 are reasonably effective such 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 such that minimally satisfactory performance with respect to operational safety or construction is being achieved.

III. SUMMARY OF RESULTS

Functional Area Assessment	Category 1	Category 2	Category 3
1. Quality Assurance		X	
2. Soils and Foundations			X
3. Containment and other Safety-Related Structures		X	
4. Piping Systems and Supports			X
5. Safety-Related Components		X	
6. Support Systems	X		
7. Electrical Power Supply and Distribution			X
8. Instrumentation and Control Systems		NOT RATED	
9. Licensing Activities		X	
10. Fire Protection	X		
11. Preservice Inspection		X	
12. Design Control and Design Changes			X
13. Reporting Requirements and Corrective Action			X

IV. PERFORMANCE ANALYSES

1. Quality Assurance

a. Analysis

Effective August 15, 1980, Consumers Power Company reorganized the site QA functions by creating the Midland Plant Quality Assurance Department (MPQAD) which was composed of both Consumers Power Company and Bechtel Power Corporation personnel. This reorganization was instituted in the interest of more comprehensive coverage of QA and more timely resolution of noted discrepancies. Consumers Power Company retains the lead responsibility for QA.

Also during the evaluation period, Consumers Power Company assumed responsibility for all onsite QA and QC functions for installation of HVAC systems. These functions and controls were previously handled by The Zack Company. The changes in responsibility were implemented to "establish more effective QA/QC interface; provide increased technical support; and provide a mechanism to improve inspection performance."

An indepth team inspection was performed May 1981, to evaluate the impact of the changes on the overall QA Program implementation and effectiveness.

Although eight items of noncompliance were identified, the scope and depth of the inspections indicated that Consumers Power Company had established an effective organization for management of QA/QC activities at the site. The inspection revealed that the overall number and qualification of personnel in the licensee's QA organization were above that normally found at other construction sites. The QA programs and overview inspections and audit functions were also above the norm. Adverse findings in piping systems and supports and electrical power supply indicated a need for additional licensee attention in these areas. Seven of the eight noncompliances (Severity Levels V and VI) were addressed in these functional areas.

The eighth noncompliance (Severity Level IV) was generic to several functional areas; a failure of appropriate managers to take prompt comprehensive corrective action to correct identified adverse quality trends. This item of noncompliance was indicative of a hesitancy to determine the "root cause" for increasing numbers of reported deficiencies. This same weakness was evident during the previous SALP period.

In another inspection a Severity Level V noncompliance was identified indicating questionable QA managerial control. The licensee failed to fully evaluate the technical capability of the principal supplier of services for soil boring activities. The NRC identified 15 deficiencies in the principal supplier's Quality Assurance Procedure Manual indicating that the licensee had not adequately reviewed and approved the procedures prior to preparation of drilling activities.

b. Conclusion

The licensee is rated Category 2 in his overall quality assurance capability. Notwithstanding weaknesses identified in specific areas, the licensee has been responsive in establishing an overall effective organization for the management of construction and implementation of quality assurance at the site.

c. Board Recommendations

The Board notes the significant improvements in the overall Quality Assurance Program; however, it is recommended that both the NRC and the licensee give additional attention to the specific problem areas.

2. Soils and Foundations

a. Analysis

During the evaluation period, inspections have been performed to examine the licensee's implementation of corrective actions regarding the 10 CFR 50.54(f) request for additional information pertaining to soils settlement; observation of soils work activities and to witness taking of soil borings requested by NRC reviewers and consultants.

Since 1978, the soils settlement issues have been paramount in the amount of attention by the NRC to this licensee. This activity resulted in an order issued December 1979, which is the basis for a ongoing hearing on the soils settlement issues. A multitude of effort by the NRC and licensee has gone into soil testing and major review of the FSAR and design control. In spite of this attention, every inspection involving regional based inspectors and addressing soils settlement issues has resulted in at least one significant item of noncompliance. The enforcement history for this functional area during this SALP period is as follows:

Two Level IV noncompliances were identified in NRC Inspection Reports No. 50-329/80-32; 50-330/80-33.

(1) Failure to initiate audit corrective action concerning the rereview of the FSAR and references to determine if design documents had modified the FSAR and if so that changes had been made to the FSAR.

(2) Three examples of failure to translate applicable regulatory requirements and design criteria into design documents.

(a) Failure to maintain a coordination log of Specification Change Notices (SCN).

(b) Failure to correctly translate Specification Change Notice No. SCN-9004 as a requirement into Revision 20 of Specification C-208.

(c) Failure of Engineering Department Project Instruction No. EDPI 4.25.1, Revision 8 to establish adequate measures for design interface requirements.

One Level V noncompliance and a deviation were identified in NRC Inspection Reports No. 50-329/81-01; 50-330/81-01.

(1) Failure to establish test procedures for soils work activities.

(2) Failure to supply a qualified onsite geotechnical engineer.

One Level V noncompliance was identified in NRC Inspection Reports No. 50-329/81-09; 50-330/81-09 which is discussed under the Quality Assurance Section. However, the finding of lack of QA was a result of attempting to review the QA associated with procuring soil boring samples.

Failure to evaluate the technical capabilities of Woodward-Clyde (principal supplier of services for soil boring activities) prior to procurement of a drilling contractor.

It was noted in NRC Inspection Reports No. 50-329/81-12; 50-330/81-12 that a sufficient number of qualified personnel were not available for the complex nature of the remedial soils work. This had previously been identified in NRC Inspection Reports No. 50-329/81-01; 50-330/81-01, referenced previously as a deviation to a commitment.

b. Conclusion

The licensee is rated Category 3 in this area. The enforcement history indicates that additional licensee attention is warranted.

c. Board Recommendations

The Board recommended continued NRC inspection activity for each major evolution in the resolution of soils settlement issues.

The issues identified during this evaluation period were addressed with the licensee and were thought to be resolved. However, following this evaluation period there was a period when very little physical work in the soils settlement and underpinning area was initiated onsite. When actual physical work was resumed it was found that adequate QA/QC attention was not given to these work activities. These areas have again been addressed and are believed to be resolved. Continued attention is required by both the NRC and the licensee.

3. Containment and Other Safety-Related Structures

a. Analysis

During the evaluation period, containment prestressing system procedures were reviewed; selected work activities associated with tendon insertion and buttonheading for Unit 1 were observed and prestressing system material records for Unit 1 and quality records for Units 1 and 2 were reviewed.

During the previous evaluation period the licensee experienced difficulty in installation of prestressing tendons. However, these difficulties did not exist during this evaluation period.

The Senior Resident Inspector witnessed portions of the atmospheric hydrostatic test placed on the borated water storage tanks (BWST) including an examination by Quality Control and the Authorized Nuclear Inspector. The hydrostatic test was done in an acceptable manner. Although the hydrostatic test was completed without complications, loading of the BWST with water resulted in cracks developing in the valve pit area associated with these tanks.

b. Conclusion

The licensee is rated Category 2 in this area. The licensee's performance appears to be satisfactory, no significant strength nor weaknesses were identified.

c. Board Recommendations

None.

The Board notes that subsequent to the evaluation period it was determined that the cracking in the valve pit support walls was related to soils issues.

4. Piping Systems and Supports

a. Analysis

During the evaluation period, installation of large and small bore piping and pipe hanger systems (including storage of piping components) was examined and noted in seven different inspection reports of regularly scheduled inspection activities. Three of these inspections, including a team inspection, resulted in seven items of noncompliance and an isolated instance of inadequate dunnage in a temporary storage area. The following items of noncompliance indicate weakness in the implementation of the QA program.

(1) Bechtel Purchase Order did not specify applicable codes for purchase of 60,000 pounds of E7018 electrode (Infraction).

(2) Bypass of an inspection hold point for pressurizer surge piping (Infraction, Unit 2 only).

(3) Failure to install large bore pipe restraints, supports, and anchors in accordance with design drawings and specifications (Severity Level V).

(4) Failure of QC inspector to reject large bore restraints, supports and anchors that were not installed in accordance with design drawings and specifications (Severity Level V).

(5) Failure to prepare, review and approve small bore pipe and piping suspension system designs performed onsite in accordance with design control procedures (Severity Level IV).

(6) Failure to adequately control documents used in site small bore piping design activities (Severity Level V).

(7) Failure of audits to include a detailed review of system stress analysis and to follow up on previously identified hanger calculation inconsistencies (Severity Level V).

Based upon the last five items of noncompliance, an Immediate Action Letter (IAL) was issued on May 22, 1981, pertaining to the design control and issuance of drawings for the installation of small bore piping and support systems.

b. Conclusion

The licensee is rated Category 3 in this area. The enforcement history is indicative of weaknesses in the implementation of the quality assurance program.

c. Board Recommendations

The Board notes that subsequent to the evaluation period an inspection on July 16-17 and 23-24, 1981, verified that the licensee had satisfactorily addressed the provisions of the May 22, 1981, IAL. Also on July 27, 1981, the licensee submitted a letter of understanding to the NRC stating the actions to be taken to control modification to small bore piping drawings which do not have Committed Preliminary Design Calculations.

The Board recommends increased licensee and NRC attention.

5. Safety-Related Components

a. Analysis

During the evaluation period, NRC Inspectors observed alignment of reactor coolant pumps; installation of lower core support assembly vent valves and associated portions of quality documentation. The enforcement history consisted of two items of noncompliance and a Confirmatory Action Letter. All were issued as a result of NRC findings during the installation of the core support assembly vent valves.

The following is a summary of the items of noncompliance which culminated in a letter of understanding issued by the licensee on January 22, 1981.

(1) Failure to have an appropriate procedure for installation of vent valves (Severity Level V).

(2) Failure to follow access control procedures and account for items used in the assembly of the Unit 2 core support assembly vent valves on the equipment entry log (Severity Level V).

The licensee's letter of understanding stated that the Stop Work Order on assembly of core support assembly vent valves would remain in effect until procedures, personnel training and QA overview inspection plans are upgraded.

b. Conclusion

The licensee is rated Category 2 in this area. The above enforcement was aimed at an isolated instance and may have

been directly related to changes in NSSS QC personnel changes. The licensee had in the past and since this episode maintained adequate QA control for assembly of NSSS equipment (particularly reactor internals).

c. Board Recommendations

None.

6. Support Systems

a. Analysis

On January 7, 1981, a $38,000 Civil Penalty was levied against the licensee for QA deficiencies in the installation of heating, ventilating, and air conditioning (HVAC) systems which were noted during an investigation during the period of March 6, 1980 to July 31, 1980. Seventeen items of non-compliance were identified during this investigation and one additional item was identified in a later report (NRC Inspection Report No. 50-329/80-22). The later item was not considered in the Civil Penalty.

The above enforcement history was reflected in the previous SALP evaluation. The licensee has made significant improvement in correcting programmatic weaknesses identified in the Civil Penalty. Since the investigation, the licensee has accepted complete responsibility for HVAC System QA/QC functions. This aggressive action of taking over the QA/QC function from the subcontractor has resulted in marked improvement in the control of the HVAC installations.

b. Conclusion

The licensee is rated Category 1 in this area. Management attention and involvement has been aggressive in accepting full QA/QC responsibility and supporting this organization with an adequate number of skilled personnel.

c. Board Recommendations

The licensee should continue his attention in this area to assure a continued high level of performance. The NRC should continue inspection efforts in this area to assure the licensee commitments are being met.

7. Electrical Power Supply and Distribution

a. Analysis

During the evaluation period, two routine inspections and part of a team inspection were performed in the electrical

area. Portion of five other inspections addressed specific electrical items with one of these inspections addressing the in place storage condition of electrical equipments. As a result of the inspection effort dedicated to the electrical area, six items of noncompliance were identified. The inspection effort into the equipment storage conditions resulted in a single item of noncompliance with three examples; two of these examples were for electrical equipment.

There was essentially no electrical installation work performed for more than six months into the evaluation period because of the need to perform re-engineering to permit routing of the cables without thermal and/or physical overload of the raceways. When electrical work was resumed, it was done on a very ambitious schedule. Prior to this resumption of work the NRC had verbally advised the licensee on the need for adequate QA/QC coverage. However, it appears that not enough qualified QC personnel, rigorous QA audits and established procedural controls were invoked to avoid the following list of enforcement items.

(1) Failure to establish procedures for temporary support of cable, cable coils---and for routing cables (Severity Level V)

(2) Electrical contractors failed to verify conformance to Paragraph 3.1 of Project Quality Control Instruction E-5.0, failure to perform adequate inspection (Severity Level V)

(3) Failure to identify and control nonconforming components (Severity Level V)

(4) Failure to translate design criteria into drawings and specifications (Severity Level V)

(5) Failure to identify during inspection that a non-conforming condition with regard to minimum installed cable bend radius existed (Severity Level VI)

(6) Failure to take proper corrective action with regard to the lack of approved procedures for the rework of electrical raceways (Severity Level V)

(7) Failure to provide adequate storage conditions for (Severity Level V)

    (a) Control Rod Drive Primary AC Breakers
    (b) New and spent fuel storage racks
    (c) Emergency battery chargers

b. Conclusion

The licensee is rated Category 3 in this area. The enforcement history indicates a lack of management attention and involvement. This is evident by apparent inadequate pre-planning and assignment of priorities as activities increased, a poor understanding of procedures for control activities and minimal QC staffing for the magnitude of the activities.

c. Board Recommendations

The Board recommends increased attention by both the licensee and NRC. Inspection effort should place particular emphasis on those areas of heaviest activity for the month preceeding the inspection with particular emphasis on the number and qualification of QC personnel.

The Board notes that the licensee performed an internal audit of the area and initiated corrective action subsequent to the evaluation period. This audit was limited and the licensee has indicated that it did not address all NRC concerns. The results of this audit have not been evaluated by the NRC.

8. Instrumentation and Control Systems

a. Analysis

The licensee is not rated in this area because a minimal amount of instrumentation installation and minimal inspection effort during this evaluation period.

b. Conclusion

None.

c. Board Recommendations

Based upon the findings in electrical power supply and distribution, the Board recommends increased licensee and NRC attention commencing with increased installation activities. Particular emphasis should be placed on design control and QC coverage. This increased inspection effort could be done coincident with electrical inspections.

9. Licensing Activities

a. Analysis

Responses and submittals during this review period have principally regarded the soils settlement issue, including seismic input and responses to Post-TMI requirements

(NUREG-0737). During the earlier part of this review period, replies to staff's request were not substantive and tended to argue the staff's need for that information; once a staff position was taken, the replies tended to become responsive. Hence, the quality of the response tends to be acceptable once the need is firmly established. Because of the time expended in establishing a need, more than the normal amount of time and effort are required to obtain acceptable and substantive responses. Recent responses establishing new seismic design criteria for the site have been of high quality once the staff's position letter established the need.

The licensee is considered to be technically competent and is an experienced utility with two operating nuclear plants. Timely close out of long-standing open items is reasonable when considering the many open items on this plant, the early plant design and interrupted staff review following the TMI-2 accident.

b. Conclusion

The licensee is rated Category 2 in this area. Early responses during the evaluation period were lacking in responsiveness. However, the more recent responses tend to be substantive and of acceptable quality.

c. Board Recommendations

None.

10. Fire Protection

a. Analysis

During the evaluation period, the Senior Resident Inspector toured selected areas of the site each month to assess the cleanliness of the site and determine the potential for fire or other hazards which might have a deleterious effect on personnel and equipment. The site has maintained an adequate safety record during this SALP period. A substantial portion of the site safety program is devoted to fire protection. The licensee conducts weekly training and drills for the on site fire brigade. The fire brigade has consistantly passed the quarterly fire drills imposed by the licensee's insurance agency. Volatile chemicals are controlled and issued in small quantities in metal containers. Volatile chemicals, oils, combustibles and trash are not tolerated in an unclean and uncontrolled state. Fire hazards were minimized during the evaluation period and the licensee has accrued a multi-million-hour safety record.

b. Conclusion

The licensee is rated Category 1 in this area. Management attention has resulted in a high level of performance in this area.

c. Board Recommendations

None.

11. Preservice Inspection

a. Analysis

During the evaluation period, three routine inspections were performed to evaluate the Ultrasonic Testing (UT) of the reactor pressure vessels by South West Research Institute (SWRI) and the preservice inspection being performed by Babcock & Wilcox (B&W). The inspection effort revealed that adequate management controls existed for the inservice inspection program, procedures, and material and equipment. The licensee responses to IE Bulletins was determined to be complete in this area. The data reports demonstrated that QA/QC audits and requirements are met. The qualifications and training of SWRI and B&W personnel was in accordance with SNT-TC-1A, 1975.

b. Conclusion

The licensee is rated Category 2 in this area. The licensee's performance appears satisfactory, no specific strengths nor weaknesses were identified.

c. Board Recommendations

None.

12. Design Control and Design Changes

a. Analysis

During the evaluation period, three items of noncompliance were identified against 10 CFR 50, Appendix B, Criterion III, Design Control and one item against Criteria XVI, Corrective Action which was closely related to deficiencies in design control. These items of noncompliance have been addressed in other sections of this SALP Report. However, the common bond between these items of noncompliance is that each addresses inadequate design control.

The following is a reference list of these items of noncompliance:

(1) Section 1, Soils and Foundations

(a) Failure to initiate preventive action to preclude repetition of not identifying design documents.

(b) Three examples of failure to translate applicable regulatory requirements and design criteria into design documents.

(2) Section 3, Piping Systems and Supports

Failure to prepare, review and approve small bore pipe and piping suspension system designs performed onsite in accordance with design control procedures.

(3) Section 6, Electrical Power Supply and Distribution

Failure to translate design criteria into drawings and specifications.

In addition to the enforcement items listed above, an Immediate Action Letter (IAL) was issued by the NRC pertaining to design control and issuance of drawings for the installation of small bore piping. This item was previously iterated in Section 5, Piping Systems and Supports.

Also, the following five 10 CFR 50.55(e) summaries, which were among the twelve Construction Deficiency Reports submitted demonstrates there was lack of QA in design control and these instances should have been licensee controllable.

(a) High Energy Line Break Analysis (HELBA), steady state thrust forces rather than transient peak thrust forces were used in the energy balance techniques for the design of HELBA pipe whip restraints.

(b) Component Cooling Water (CCW) Design, CCW system susceptibility to Loss of Coolant Accident (LOCA) induced failures.

(c) Seismic model of Auxiliary Building has incorrect assumption that control tower and main portion of Auxiliary Building are an integral unit between elevation 614 and 659.

(d) Borated Water Storage Tank Foundation stress cracks.

(e) Shear reinforcement at major containment penetrations.

The fact that the licensee is able to identify design deficiencies through their audit programs and take appropriate action is commendable. However, these design deficiencies would not occur if there were more stringent control at the source of these design errors and deficiencies.

b. Conclusion

The licensee is rated Category 3 in this area. The amount of re-engineering that has transpired in electrical, civil and piping areas and the specific design control weaknesses discussed in Soils and Foundations, Piping Systems and Supports and Electrical Power Supply and Distribution indicate significant weaknesses in overall design control.

c. Board Recommendations

The Board recommends increased licensee and NRC attention to design control in all functional areas. Although design control weaknesses were evident and considered in the ratings of Soils and Foundations, Piping Systems and Supports, and Electrical Power Supply and Distribution, the Board considered it appropriate to provide a separate rating to direct special attention to design control and provide meaningful guidance to licensee management. The use of the separate rating was intended to highlight the fact that design control weaknesses were evident in several areas. This should not be interpreted as using the same observations twice to downgrade several areas. The Board felt that the Soils, Electrical and Piping areas would have been rated the same had design control aspects been found to be adequate.

13. Reporting Requirements and Corrective Action

a. Analysis

During the evaluation period, the licensee submitted twelve Construction Deficiency Reports to the NRC. These reports provided an adequate although sometimes minimal description of the circumstances warranting the issuance of the report.

One item of noncompliance (Infraction) was identified when the licensee failed to make a timely determination for the need to submit a 10 CFR 50.55(e) report to the NRC based on a 10 CFR Part 21 report from Transamerica DeLaval, Inc. The Part 21 report pertained to diesel engine link rod clearances. The licensee has taken positive actions to ensure that any safety-related information received pertinent to the Midland Site is evaluated with respect to the impact on overall safety.

Expeditious resolution of noncompliances is often delayed by inadequate licensee responses. The licensee has a tendency to spend too much time trying to justify why a finding is not a noncompliance rather than devoting the

time correcting the basic problem. Nine of 22 items of noncompliance were contested (excluding HVAC System non-compliances). Two of the contested noncompliances were retracted, but time and effort were lost in timely resolutions. Similar attitudes and responses have been observed regarding company audit findings. This attitude is reflective of the licensee corrective actions system and becomes a detriment to quality.

b. Conclusion

The licensee is rated Category 3 in this area. The licensee responses to enforcement items and internal audit findings are often delayed requiring repeated submittal to obtain acceptable resolutions.

c. Board Recommendations

None.

The Board notes that subsequent to the evaluation period, the licensee management was invited to a meeting in the Regional Offices to discuss what constitutes an adequate response to noncompliances.

V. SUPPORTING DATA AND SUMMARIES

A. Noncompliance Data

Facility Name: Midland, Unit 1 Docket No. 50-329
Inspections No. 80-10, 80-17, 80-20 through No. 80-37
81-01 through No. 81-13

Functional Areas	Noncompliances and Deviations[1] Severity Levels I	II	III	IV	V	VI	Categories Viol.	Infr.	Def.	Dev
1. Quality Assurance				(1)	(1)					
2. Soils and Foundations				(2)	(1)					(1)
3. Containment and other Safety-Related Structures										
4. Piping Systems and Supports				(1)	(4)			(1)		
5. Safety-Related Components										
6. Support Systems[2]								(15)	(3)	
7. Electrical Power Supply and Distribution					1+(5)					
8. Instrumentation and Control Systems										
9. Licensing Activities										
10. Fire Protection										
11. Preservice Inspection										
12. Design Control and Design Changes										
13. Reporting Requirements and Corrective Action								(1)		
TOTALS				4	12			17	3	1

[1] Numbers in parenthesis indicate noncompliances common to both units.

[2] The total includes 17 items of noncompliance associated with HVAC problems addressed in the previous SALP evaluation. They are included here because of an overlap in the two SALP periods.

Facility Name: Midland, Unit 2 Docket No. 50-330
Inspections No. 80-11, 80-18, 80-21 through No. 80-38
81-01 through No. 80-13

Functional Areas	Noncompliances and Deviations[1] Severity Levels I	II	III	IV	V	VI	Categories Viol.	Infr.	Def.	Dev
1. Quality Assurance				(1)	(1)					
2. Soils and Foundations				(2)	(1)					(1)
3. Containment and other Safety-Related Structures										
4. Piping Systems and Supports				(1)	(4)			1+(1)		
5. Safety-Related Components					(2)					
6. Support Systems[2]								(15)	(3)	
7. Electrical Power Supply and Distribution					(5)	1				
8. Instrumentation and Control Systems										
9. Licensing Activities										
10. Fire Protection										
11. Preservice Inspection										
12. Design Control and Design Changes										
13. Reporting Requirements and Corrective Action								(1)		
TOTALS				4	13	1		18	3	1

[1] Numbers in parenthesis indicate noncompliances common to both units.

[2] The total includes 17 items of noncompliance associated with HVAC problems addressed in the previous SALP evaluation. They are included here because of an overlap in the two SALP periods.

B. Licensee Report Data

1. Construction Deficiency Reports (CDR's)

Twelve (12) Construction Deficiency Reports (CDR's) reported pursuant to 10 CFR 50.55(e), were received by the regional office during the period of July 1, 1980 and June 30, 1981. The following list is a summary of each reportable item:

*a. High Energy Line Break Analysis (HELBA), steady state thrust forces rather than transient peak thrust forces were used in the energy balance techniques for the design of HELBA pipe whip restraints

b. Sway Strut Rod Ends Deficiency, ITT Grinnell supplies sway struts, snubbers and shock suppressors have loose or totally disengaged rod end bushings

*c. Component Cooling Water (CCW) Design, CCW system susceptibility to Loss of Coolant Accident (LOCA) induced failures

d. Nuclear Steam Supply System (NSSS) analysis, anomalies identified in the NSSS seismic and Loss of Coolant (LOCA) analysis of the primary system

e. Emergency Core Cooling Actuation System (ECCAS) vendor wiring in the ECCAS cabinets 1C45 and 2C45 was inconsistent with redundant subsystem modules in the cabinets

f. Low alloy quenched and tempered bolting 1 1/2 inches and greater in support of safety-related systems

g. Underrated Terminal Strips on Limitorque Operators

*h. Seismic model of Auxiliary Building has incorrect assumption that control tower and main portion of Auxiliary Building are an integral unit between elevation 614 and 659

*i. Borated Water Storage Tank Foundation stress cracks

j. ITE Gould Class 1E equipment, unqualified cable used to wire equipment and/or controls

*k. Shear reinforcement at major containment penetrations

l. Operation of reactor cavity cooling system

*Indicates may have been licensee controllable and are indicative of lack of QA in design control.

2. Part 21 Reports

No Part 21 reports were initiated by the licensee during the reporting period.

C. Licensee Activities

The licensee continued to construct both units at the same rate and achieved approximately 70% completion during the reporting period. Safety-related electrical installation was recommenced with vigor after a period of reduced activity while additional engineering was performed. Assembly of vessel internals, closure head and reactor coolant pumps aggressively continued during the period. As a portion of the resolution for soils settlement issues, extensive soil samples and borings were taken and work commenced on dewatering wells.

D. Inspection Activities

A major "team" inspection was accomplished on May 18-22, 1981, which resulted in an issue of an Immediate Action Letter (IAL) pertaining to installation of small bore piping.

Heavy inspection effort was expended to follow the resolution of soils settlement issues and taking of soil samples. Inspections in the electrical area have increased to be commensurate with the increase in licensee efforts in this area.

E. Investigations and Allegations Review

None were pursued during the evaluation period.

F. Escalated Enforcement Actions

1. Civil Penalty

On January 7, 1981, a $38,000 civil penalty was issued by the NRC as a result of an investigation pertaining to the installation of heating, ventilating and air conditioning equipment and systems. Nineteen items of noncompliance were identified in 10 of the 18 Appendix B criteria (10 CFR 50, Appendix B). The investigation was completed in July 1980. Two of the noncompliances were later retracted.

2. Orders

None.

3. Immediate Action Letters

On May 22, 1981, an Immediate Action Letter (IAL) was issued by the Region III Office of Inspection and Enforcement concerning the issuance of fabrication and construction drawings

for the installation of the safety-related small bore piping and piping suspension systems.

4. Confirmatory Action Letter

(a) On January 22, 1981, Consumers Power Company issued a letter to the Director of Region III stating that their Stop Work Order of January 16, 1981, to B&W for installation of Core Support Assembly Vent Valves would remain in effect until the procedures were revised, training of personnel was completed, and the overview inspection plan was revised. This action was taken in lieu of Region III, Office of Inspection and Enforcement issuing an Immediate Action Letter.

(b) On July 27, 1981, Consumers Power Company issued a letter to the Director, Region III delineating those actions to be taken to control modification to drawings which do not have the required Committed Preliminary Design Calculations (CPDC) and that the methodology for modifications to be fully documented and submitted to the Regional Office for review. This action was taken in lieu of Region III Office of Inspection and Enforcement issuing an Immediate Action Letter.

G. Management Conferences

Three meetings were held with Consumers Power Corporate Management during the appraisal period.

1. The first meeting was held on November 24, 1980 and continued on December 2 and 17, 1980. The purpose of the meeting was to discuss the Systematic Assessment of Licensee Performance (SALP) and to be present for the licensee's presentation of the recently reorganized QA organization. (Inspection Reports No. 50-329/80-36 and 50-330/80-37).

2. The second meeting was held March 13, 1981, to discuss the Midland Project Organization, Midland QA Program evaluation and the new external quality consultation. (Inspection Reports No. 50-329/81-05 and 50-330/81-05).

3. The third meeting was held on May 22, 1981, to discuss the results of the team inspection of May 18 to 22, 1981. (Inspection Reports No. 50-329/81-12 and 50-330/81-12).