SALP BOARD REPORT

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

50-255/85-01
Inspection Report No.

Consumers Power Company
Name of Licensee

Palisades
Name of Facility

July 1, 1983 - October 31, 1984
Assessment Period

I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) program is an integrated NRC staff effort to collect 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.

An NRC SALP Board, composed of staff members listed below, met on January 8, 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.

This report is the SALP Board's assessment of the licensee's safety performance at Palisades for the period July 1, 1983 through October 31, 1984.

SALP Board for Palisades:

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II. CRITERIA

The licensee performance is assessed in selected functional areas depending 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. 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 observations.

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 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.

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 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 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 so that minimally satisfactory performance with respect to operational safety or construction is being achieved.

Trend: The SALP Board has categorized the performance trend in each functional area rated over the course of the SALP assessment period. The categorization describes the general or prevailing tendency (the performance gradient) during the SALP period. The performance trends are defined as follows:

Improved: Licensee performance has generally improved over the course of the SALP assessment period.

Same: Licensee performance has remained essentially constant over the course of the SALP assessment period.

Declined: Licensee performance has generally declined over the course of the SALP assessment period.

III. SUMMARY OF RESULTS

The licensee's overall performance for this SALP period, which included a very long refueling/maintenance outage, was acceptable. However, performance declined from the last SALP period, and also declined during the period. The licensee received fewer Category 1 ratings than they did in the previous SALP period, and four functional areas received lower ratings than in the previous SALP period. The performance trend within the period declined in three areas, was mixed (but generally lower than last period) in one area, stayed the same in four areas, and improved in two areas. Considering the total changes and the areas in which these changes occurred, overall performance appeared to decline substantially and is a matter of substantial concern to the U.S. NRC.

	Functional Area	Rating Last Period	Rating This Period	Trend Within This Period
A.	Plant Operations	1	2	Declined
B.	Radiological Controls	2	2	Mixed**
C.	Maintenance	2	2	Declined
D.	Surveillance	1	2	Same
E.	Fire Protection and Housekeeping	2	2	Same
F.	Emergency Preparedness	1	2	Same
G.	Security	2	2	Same
H.	Refueling	NR*	1	Improved
I.	Quality Programs and Administrative Controls	1	2	Declined
J.	Licensing Activities	2	2	Improved

* NR - Not Rated (no basis for evaluation)

** Mixed - (Due to the inspections in this area focusing on special events and the licensee's variable performance, no prevailing trend could be assessed. However, the overall performance was lower than the previous Category 2 performance.)

IV. PERFORMANCE ANALYSIS

A. Plant Operations

1. Analysis

Evaluation of this functional area is based on parts of thirteen inspections conducted by the resident inspectors encompassing direct observation of activities, review of logs and records, verification of selected equipment lineups for operability, and follow-up on significant operating events to verify conformance to Technical Specifications and administrative controls.

Plant power operations were curtailed during this appraisal period, and were limited to about six weeks at the beginning of the period and two or three weeks (cumulative) rather late in the period. The extended outage appeared to negatively affect operator familiarity with a plant in the power operations mode. A few instances were noted late in the period including: engineered safeguards room cooler fan in "pull-to-lock"; PCS temperature nearly permitted to drop below 525° F before boration to cold shutdown conditions; and high steam generator tube differential pressure, where the licensee was unaware of the condition until it was brought to their attention by the inspector. These items were indicative of a lack of operator familiarity and attentiveness in performing various evolutions with the plant returning to power operations.

Five items of noncompliance were identified as follows:

a. Severity Level V - NRC not notified concerning SRO recertification per 10 CFR 55.31 (Inspection Report No. 255/83-18).

b. Severity Level IV - Administrative Procedure violation involving Shift Supervisor failure to notify and consult with Duty and Call Superintendent when deviating from approved procedures (Inspection Report No. 255/84-05).

c. Severity Level IV - System Operating Procedure violation involving "R" bus removal from service with only one emergency diesel generator available for plant power (Inspection Report No. 255/84-05).

d. Severity Level V - Unusual conditions in performance of system checklists not documented as required (Inspection Report No. 255/84-10).

e. Severity Level IV - Startup procedure violation involving primary coolant boron dilution contrary to the sequence stipulated (Inspection Report No. 255/84-14).

While the above noncompliances did not have particular safety significance nor were they generic in nature, they are of concern when considering the relatively short period of actual power operation. With the plant shutdown, the risk of violating Technical Specification requirements in the operations area is substantially reduced. Furthermore, Items b. and c. both evolved from the loss of power and communications event of January 8, 1984. Additional violations relating to this matter are discussed in Paragraphs IV.F (Emergency Preparedness) and IV.G (Security) below. Collectively, these matters indicate Operations Department response to unusual conditions, which is critical to initiation of proper and complete licensee response, was an area of weakness. It should also be noted that the number and nature of identified noncompliances reflects a downward trend from the previous SALP period when only three items of noncompliance (all Severity Level V) were identified.

Three Licensee Event Reports (LERs) relating to this area were caused by personnel error (Reports 84-001, 84-002, and 84-014) and one event (Report No. 83-70) occurred as a result of a deficient procedure. This is compared to two personnel-error and no deficient-procedure events noted during SALP 4. Two of the three personnel-error events involved licensed operators; the same as in the previous appraisal. Two of the events (83-70 and 84-002) appeared to involve some compromise of safety-related components. This is the same as each of the previous two SALP appraisals. Licensee Event Report 84-001 involved the loss of power and communications event which resulted in a total of seven items of noncompliance as noted above and elsewhere in this report.

On the positive side, no staffing problems in the area of Plant Operations were experienced and senior management overview, both onsite and from the corporate office, was evident throughout the period. Also, few technical issues or NRC initiatives required licensee response or resolution during this SALP period. The licensee typically responded thoroughly and timely, and exhibited a conservative approach to safety-significant issues. An example of this conservatism related to self-imposed implementation of proposed Technical Specifications which were more limiting than (and not contrary to) existing approved Technical Specifications.

During the report period, Operator Licensing Examinations were administered to 11 reactor operators, 6 senior reactor operators, and 12 instructors. Four reactor operators and one senior operator were being examined for the second time. The overall pass rate for these examinations was 62%, which is below the national average of approximately 80%. The high failure rate was due, in part, to the instructor examinations, which had a passing rate of only 50%.

2. Conclusion

The licensee is rated Category 2 in this area. The rating represents a measurable decline in the performance from the previous SALP (Category 1), due primarily to poorer regulatory performance and to the negative effect the extended outage appeared to have on operator performance in returning the plant to power operating conditions during the appraisal period. While the minimal operating history makes it difficult to judge the trend, it is the view of the staff that the regulatory performance declined during the appraisal period and that a need for timely management action is indicated to assure performance does not fall to the Category 3 level.

3. Board Recommendations

Recognizing the declined performance in this area and the general managerial changes that have recently occurred at this site, the Board believes that augmented NRC inspections are warranted and should focus on personnel performance and equipment conditions.

B. Radiological Controls

1. Analysis

Four inspections were performed during this assessment period by region based specialists. These inspections included review of open items, overexposure of a diver, and independent inspection effort as directed by the Regional Review Committee for the Trial Inspection Program. Eight violations were identified as follows:

a. Severity Level V - Chemistry and Health Physics Superintendent's reporting chain through the Operations and Maintenance Superintendent was not in accordance with the plant organization specified in the Technical Specifications (Inspection Report No. 255/84-01).

b. Severity Level IV - Failure to adhere to an NRC Order confirming a licensee commitment for installation of a noble gas effluent monitor which reads out in microcuries per cubic centimeter or as equivalent Xe-133 concentrations per NUREG-0737 (Inspection Report No. 255/84-01).

c. Severity Level III - Failure to package radioactive waste in a strong, tight package, which resulted in leakage of radioactive material during shipment (Inspection Report No. 255/84-01).

d. Severity Level * - Whole body exposure of a diver to greater than 10 CFR 20.101(b) limits (4.5 rems) (Inspection Report No. 255/84-06).

e. Severity Level * - Failure to provide a diver with the proper monitoring and controls for high radiation area access as required by Technical Specifications (Inspection Report No. 255/84-06).

f. Severity Level * - Failure to conduct an ALARA review of the cavity tilt machine repair job, failure to stop work on the cavity tilt machine after higher than expected radiation levels were identified, and failure to include survey requirements on the tilt machine repair radiation work permit as required by procedures (Inspection Report No. 255/84-06).

g. Severity Level * - Failure to maintain records of radiation surveys as required by 10 CFR 20.401 (Inspection Report No. 255/84-06).

h. Severity Level IV - Failure to collect air samples during primary coolant pump repairs, failure to perform qualitative field fit tests of respirators and interference of protective headgear with respirator sealing surface, failure to wear TLD on the frontal portion of the body above the waist, and failure to count air samples for alpha activity as required by procedures (Inspection Report No. 255/84-22).

* Violations d., e., f., and g. were categorized collectively as a Severity Level III problem.

These items, which include repetitive violations for procedural adherence and a violation for an overexposure, are indicative of a minor programmatic breakdown in this functional area. Although specific corrective actions were taken regarding the identified violations, the licensee has not effectively corrected the procedural adherence problem in this functional area. No civil penalty was assessed for the overexposure due to the licensee's prompt identification and reporting of the event and good prior performance in this area, and because this appeared to be an isolated event. Although cited during this assessment period, the violation for the leaking radioactive waste package actually occurred at the end of the previous assessment period. Licensee enforcement history during this SALP period declined from the previous SALP period.

Management involvement in this functional area is generally adequate. The licensee's pre-job planning and well defined procedures for control of work associated with the primary coolant pump repair activities, near the end of this assessment period, were very good. However, a general lack of procedures, poor procedural adherence, and poor pre-job planning all contributed to the diver overexposure incident. Some weaknesses with the licensee's corrective actions systems for nonreportable events were identified. Records of surveys and incident reports were identified as needing improvement during this assessment period.

Responsibility for counting room activities has been transferred from the chemistry group to the radiation protection group. Although effort is still needed, this move appears to have resulted in improved quality control of counting activities and a general improvement in counting room performance. Procedure revisions have resulted in a general improvement in laboratory and counting room performance, but new procedures needed to fully implement the Nuclear Operations Department Standards, especially in the area of chemistry quality control, are still lacking. A program requiring chemistry technicians to show their proficiency by analyzing blind samples is being developed.

Staffing in this functional area appears good. Key positions within the radiation protection and chemistry groups are identified, authorities and responsibilities are defined, and positions are usually filled in a reasonable time. Some vacancies have been filled with experienced personnel from the licensee's Midland Plant. Radiation protection and chemistry staff stability has improved over previous assessment periods. Morale problems exist due to recent pay cuts and concerns over the licensee's general fiscal condition. To date, this situation has not had any discernible effect on the operation of the radiation protection and chemistry programs.

A radiation protection and chemistry training and qualification program has been implemented for a large portion of the staff. The licensee has a good 12 to 18 week training program established for radiation protection and chemistry technicians. About 90 percent of the technicians currently on staff have completed this training.

Radiological controls reportable events are promptly and completely reported. The diver overexposure incident was thoroughly analyzed in a timely manner. The diving work was quickly halted, needed information collected, statements of involved persons obtained, and analysis of the event completed within a very short time.

A conservative approach to radiological safety and controls was generally exhibited. Personal radiation exposures during 1983 were 60 percent higher than the average for U.S. pressurized water reactors and 50 percent higher than the plant's average over the previous five years, due primarily to extensive repair activities involving high exposure work such as steam generator and primary coolant pump repairs. Personal radiation exposures during 1984 were about average for U.S. pressurized water reactors. The ALARA program, established during the previous assessment period, continues to function. Overall efforts to reduce exposures during the primary coolant pump repair activities were very good. Liquid releases were much lower than average for U.S. pressurized water reactors. No unplanned releases or transportation problems were reported during this assessment period.

The radiological environmental monitoring program was generally satisfactory during this assessment period. The licensee appears to have resolved past problems with the collection of milk samples required by Technical Specifications. Improvement in this area is partly due to increased management attention and more clearly defined responsibilities.

The licensee achieved generally satisfactory performance on analysis of samples split with the NRC with 33 agreements in 36 comparisons. Only one of the three disagreements appeared significant, although the error was conservative in this instance. The disagreement was caused by use of an improper efficiency for Xe-133. The problems associated with the three disagreements have been corrected.

2. Conclusion

The licensee is rated Category 2 in this area. While this is the same rating as given in the last SALP period, the improved trend noted during the previous SALP period did not continue during this SALP period and overall regulatory performance in this functional area was lower. Performance during the period was mixed.

3. Board Recommendations

None.

C. Maintenance/Modifications

1. Analysis

Examination of this functional area consisted of nine inspections by Region III inspectors. Areas examined included (1) conversion of the HPSI pump to an auxiliary feedwater pump, (2) evaluation of the SIRW support structure repair activities, (3) modifications to the Auxiliary Building as addressed by TMI update requirements, (4) followup on actions related to IE Bulletins 79-02 and 79-14 and Generic Letter 83-28, (5) followup on the licensee report that the steam generator snubbers were determined to be inoperable, (6) evaluation of calculations performed concerning the adequacy of fan coolers for the engineered safeguards room (reference LER 83-007), (7) followup on modifications made on the auxiliary feedwater nozzle and sparger piping, (8) followup of valve shaft inspection and replacement on the main steam line isolation valves, (9) review of the cause for the failure and the repair of reactor coolant pump P-50C, (10) review of corrective actions for damaged cable insulation caused by excessively high temperatures inside one containment cable tray due to installation of a fire stop, and (11) maintenance program review.

As a result of licensee identified cable damage, a Confirmatory Action Letter (CAL) was issued on July 13, 1984 outlining corrective action to be taken by the licensee. As of the end of the appraisal period, the licensee had implemented all but one of the corrective actions; the remaining action could not be accomplished until the licensee had accumulated a sufficient operating history. The requirements had not yet been met to complete the action.

NRC examination of this functional area also consisted of parts of twelve inspections by the resident inspectors to ascertain compliance to Technical Specifications and plant procedures.

No items of noncompliance were identified in review of the area. Only one item was identified in the previous SALP. Good non-compliance history has been a continuing strong point for this functional area.

One LER was issued in the maintenance/modifications area as a result of personnel errors (Report 84-017), and three appeared to result from deficient procedures (Reports 83-70, 84-007, and 84-009). No LERs involving either cause were noted during the previous (SALP 4) appraisal. Further, one item (Report 83-60) involved construction personnel adversely affecting plant equipment as a consequence of a deficient controlling procedure. No items involving construction personnel were noted during the previous SALP. Furthermore, of interest is the fact that three of the events (Reports 84-007, 84-009, and 84-011 [discussed in Paragraph IV.D.1]) involved unintended engineered safety features actuations during testing or trouble-shooting by the Instrument and Control Department, all over a relatively short period. Events of this type have been historically quite rare at the Palisades plant and are indicative of declining performance in this area.

Management controls in this area continued to encompass adequate prior planning and approval, proper understanding and implementation of approved procedures (with some exceptions as identified and corrected by the licensee), and appropriate post-work reviews and tests. Personnel and equipment certifications were current and complete. Records were found to be complete, well maintained, and available. Observations indicate personnel have an adequate understanding of work practices and that procedures were adhered to. On the negative side, however, is the fact that the overall backlog of maintenance items has more than doubled in the last year. This is particularly puzzling considering the plant was in a maintenance mode for most of the appraisal period. In addition, tours of the plant subsequent to the SALP period revealed numerous pieces of equipment in need of maintenance.

2. Conclusion

The licensee is rated a Category 2 in this area. While this is the same rating as was given in this area during the last SALP period, the overall performance is lower and the trend in performance declined during this period, as evidenced by the increased backlog of maintenance items and the observed condition of equipment. The failure to correct equipment problems in a timely manner is a matter of major concern.

3. Board Recommendations

The Board recommends that increased licensee and NRC attention be directed toward determining the status of equipment and reducing the backlog of outstanding maintenance requests.

D. Surveillance and Inservice Testing

1. Analysis

Evaluation of this functional area is based on parts of eleven inspections by the resident inspectors, three inspections by Region III specialists, and a Region II support inspection. Three items of noncompliance were identified as follows:

a. Severity Level IV - Failure to adequately implement valve exercise testing in that (1) valves were not locally observed as required, and (2) limiting stroke times were assigned that would not assure valve operational readiness (Inspection Report No. 255/84-20).

b. Severity Level V - Failure to specify calibrated stopwatches for testing (Inspection Report No. 255/84-20).

c. Severity Level V - Failure to have or follow appropriate procedures (Inspection Report No. 255/84-09).

The noncompliances indicate a need for test program improvements, but are not repetitive of previously identified items, nor do they appear symptomatic of more significant underlying causes. These noncompliance findings represent a continuation of the performance level demonstrated during the two preceding appraisal periods.

Five Licensee Event Reports (LERs) caused by personnel errors (Reports 83-78, 84-008, 84-011, 84-018, and 84-020) were identified during this appraisal, compared to one in the SALP 4 period. Two reports (83-74 and 83-79) appeared due to deficient procedures, compared to three during SALP 4. One event (84-011) resulted in approximately 2000 gallons of water being sprayed into the containment, while the other events had a lesser impact on plant operation and safety. Four of the events (83-78, 83-79,

84-018, and 84-020) had in common an involvement with scheduling, i.e., missed or late test performance. Problems of this nature have been very infrequent at Palisades in the past. These events do not appear to have a common cause, but additional licensee attention to the test scheduling area appears warranted. Computer-based scheduling systems are currently under licensee evaluation. It is noted the licensee uniformly (though not required by existing Technical Specifications) classified equipment overdue for surveillance as "inoperable" and took appropriate corrective actions pursuant to Technical Specifications for the "inoperable" conditions.

The licensee continued routine monthly surveillance of safety-related equipment status outside the control room (required by a 1979 order) with negative findings, during those periods when the plant was in operation.

Surveillance procedure quality remained good and improving as the licensee continued the procedure review program for clarification and standardization to facilitate accuracy and ease of use. The review activities probably contributed in some cases to the identification and reporting of surveillance requirements which had been previously overlooked, as discussed above. One negative aspect in this area involved the failure to include acceptance criteria in a surveillance procedure for mechanical snubbers (noncompliance c.). While of minor safety significance, it did indicate the lack of licensee followup on the need for an acceptable procedure for mechanical snubber surveillance which had been brought to the licensee's attention during the previous SALP period.

The licensee made a particular effort to ensure the unanticipated extension of the outage did not adversely affect their ability to meet future test frequency requirements. This effort was considered sufficiently responsive to a concern in this area discussed in the previous SALP.

An in-depth inspection of the licensee's program for inservice testing of pumps and valves indicated that the program, in general, met regulatory requirements, was well defined, and was controlled by a knowledgeable staff. Procedures were generally adequate, including acceptance criteria, and results were reviewed in a timely manner. However, areas were identified where improvements were needed such as in valve test results trending and evaluation, the selection of valve stroke time criteria, and the local verification of valve stroking.

Inspection of steam generator eddy current testing activities, programs, and procedures indicated the management control systems were effective. Records were found to be complete, well maintained and available. Discussions with licensee and contractor personnel indicated that they were knowledgeable in their job and the records indicated they were properly trained and certified.

The surveillance activities observed and reviewed by the resident inspector, which generally encompassed operations surveillance and instrument and control surveillance, reflected strong and effective management controls.

Responsiveness to technical issues was good, and routinely showed a conservative approach to potentially safety significant concerns. Program performance, documentation, and review made a strong positive contribution to overall facility safety-related equipment reliability.

2. Conclusion

The licensee is rated Category 2 in this area, which is a lower rating than that received in the last SALP period. The licensee's performance trend over the appraisal period has not changed.

3. Board Recommendations

None.

E. Fire Protection and Housekeeping

1. Analysis

Evaluation of compliance to fire protection requirements and good housekeeping practices was part of twelve routine inspections by the resident inspectors. No items of noncompliance were identified during review of this area, compared to one minor item identified during the previous appraisal. The licensee continues to maintain a good noncompliance history in these areas.

Three Licensee Event Reports (LERs) were identified during this appraisal (Reports 83-61, 83-68, and 83-76) as caused by personnel error. Each involved missed or late performance of required hourly fire tours to compensate for installed equipment disablement due to ongoing construction or modification activities. One item (LER 83-73) involved a deficient fire protection system test procedure. No personnel-error or deficient-procedure events were noted during the previous SALP 4 period. Compensatory fire tours were required on a much larger scale and with frequently changing applicability compared to any previous evaluation period. This situation was due, in part, to the low priority assigned to fire protection related maintenance orders.

No specific problems involving construction or contractor personnel non-adherence to plant fire protection requirements were noted. Large numbers of such personnel were frequently onsite and performing numerous jobs involving "hot work" in support of outage maintenance and/or modification activities.

Fire drills and firefighting training sessions were occasionally observed. These activities appeared effective in maintaining a competent, qualified onsite fire brigade. The licensee took steps on his own initiative to improve the identification and accountability of portable fire extinguishers located throughout the plant.

Variable housekeeping conditions were frequently observed as a function of ongoing maintenance or construction activities. Conditions were particularly "tight" and "cluttered" early in the outage due to several concurrent activities being conducted in the containment 590' level, but not excessively so. A few instances were noted where tools, scaffolding or other support materials were not immediately removed from a work area on completion of the activity. At the end of the appraisal period, the licensee had begun a general overall plant cleanliness upgrade, including repainting a number of areas and components. Notwithstanding these upgrade efforts, the failure to correct equipment problems in a timely manner and the backlog of outstanding maintenance requests (as noted in Paragraph IV.E) appears to have affected overall plant housekeeping conditions. The delay in completion of maintenance activities in some areas has resulted in pieces of equipment laying on the floor for extended periods, leaking water, and standing water due to plugged floor drains, which detract from appearance of the plant.

Overall, the licensee continued to demonstrate a positive attitude toward fire protection by continuing programs for thorough training, frequent on-the-job checks and plant tours, and prompt corrective or compensatory action when required.

2. Conclusion

The licensee continues to be rated Category 2 in this area, the same as the last SALP rating in this area. The licensee's performance trend essentially remains the same.

3. Board Recommendations

The Board notes that due to the licensee's schedule slippage and supplementary exemption requests, the 10 CFR 50.48 inspection was not conducted. The licensee's fire protection programs and facilities should be inspected under 10 CFR 50, Appendix R, during the coming SALP period, pending the licensee's completion of modifications and exemption approvals.

F. Emergency Preparedness

1. Analysis

Two inspections, including observation of the annual emergency exercise and followup on the January 8, 1984 loss-of-power/loss-of-communications event, were conducted by Region III specialists during the assessment period to evaluate compliance

with 10 CFR Part 50, Technical Specifications, and procedures. The resident inspectors also made occasional observations in this area. Four items of noncompliance were identified as follows:

a. Severity Level IV - Failure to classify an emergency and failure to notify the NRC within one hour (Inspection Report No. 255/84-05).

b. Severity Level IV - Failure to conduct training on the implementation of the emergency plan for the Shift Supervisor (Inspection Report No. 255/84-05).

c. Severity Level IV - Failure to inform the NRC of the emergency classification until the following day (Inspection Report No. 255/84-05).

d. Severity Level IV - Failure to classify an emergency and failure to timely classify two other emergencies (Inspection Report No. 255/84-14).

These four items of noncompliance indicated the Shift Supervisor's unfamiliarity with Emergency Action Levels (EALs) and notification requirements, indicating a lack of emergency preparedness training. The examples presented in noncompliance d. demonstrated that corrective actions, implemented as a result of the January 8, 1984 event, did not result in correcting the noncompliance, leading to the multiple violations over the SALP period. Failure to classify emergencies is of significant concern to the NRC. In all of the above cases, the lack of classification warranted a Severity Level IV violation. These four noncompliances can be compared with the previous SALP period where no noncompliances were identified.

The licensee's performance in the August 21, 1984 exercise was considered very good by the Region III evaluators. No major problems were identified. Good command and control was exhibited throughout the exercise, and most participants displayed good enthusiasm and appeared well trained in their exercise functions. Exercise performance indicated a well-defined training program implemented for a large portion of the staff.

Corporate level management participated and performed well in the exercise. The training program appeared to contribute to an adequate understanding of emergency response roles with a modest number of personnel errors.

Staffing of emergency response positions and the emergency preparedness coordinator position is ample as indicated by the number of personnel to fill response positions and the fact that both a site and corporate emergency preparedness coordinator position are maintained. The coordinator positions are identified, and authorities and responsibilities are well defined.

In an effort to resolve an outstanding issue with regard to the concept of operations for the licensee's General Office Control Center (GOCC), the licensee requested to meet with NRC Regional personnel. Resolution of this issue was obtained. and the licensee committed to modify their emergency plan. The approach taken by the licensee was to meet the minimum requirement for EOF activation, but to additionally activate the GOCC at an earlier emergency classification to provide assistance to the Control Room and TSC staff. This resolution appeared viable and represented an understanding of the technical issues involving timeliness of EOF staffing. The resolution was successfully demonstrated during the August 1984 exercise.

Management appears to be involved in assuring a quality emergency preparedness program. An aggressive investigation was conducted by management after the January 8, 1984 event; however, the investigation failed to identify that the Shift Supervisor, on duty at the time of the event, had not been trained in implementation of the emergency plan as part of his SRO requalification. Senior management personnel participate in the emergency preparedness program by participating in exercises in the roles of various emergency response organization positions.

2. Conclusion

The licensee is rated Category 2 in this area. This is a lower rating than the previous SALP Category 1 rating, based primarily on the relative number and repetitive nature of the noncompliances in this SALP period compared with no noncompliances in the previous SALP period. The licensee's performance remained constant over the appraisal period.

3. Board Recommendations

Recognizing the declined performance in this area and the general managerial and Emergency Response Plan changes, the Board recommends increased licensee and NRC attention in the area of assuring the events are properly detected and classified.

G. Security

1. Analysis

Four inspections (one reactive, two special and one routine) were conducted by region based physical security inspectors during this assessment period. The reactive inspection focused on the loss of off-site communications on January 8, 1984. The two special inspections involved Regional Review Committee (RRC) target areas in addition to a review of licensee corrective actions on previously identified items of noncompliance. The only broad overview of the security program occurred during one routine inspection conducted early in the assessment period. The

resident inspector, in accordance with the Trial Inspection Program, also made periodic inspections of security activities assessing routine program implementation and providing initial response to security events.

Four violations were identified during the inspection effort.

a. Severity Level IV - Access control; vital area door not properly secured (Inspection Report No. 255/83-18).

b. Severity Level IV - Compensatory measures for a vital area card reader failure were inadequate (Inspection Report No. 255/83-20).

c. Severity Level IV - Failure of conventional and wireless off-site communication equipment to the LLEA (Inspection Report No. 255/84-05).

d. Severity Level IV - Failure to report a physical security event (Inspection Report No. 255/84-05).

Two violations were directly related to the loss-of-power/loss-of-security-related communications event of January 8, 1984. The loss of security-related communications represented a significant programmatic deficiency which was adequately addressed by the licensee in their corrective actions. The actual threat to the public health and safety was extremely small because the core had been totally defueled for approximately 5 months at the time of the event. The third item was simply resolved by a security plan change under the provisions of 10 CFR 50.54(p) which clarified the licensee's vital area access control program.

During the previous rating period only two items of noncompliance were identified, and, although four were identified during this rating period, our analysis shows that no major downward performance trend is noted. Two of the items noted above directly related to a single unusual event. The two remaining items (a. and b.) were similar in severity to the items noted in the earlier rating and were not programmatic in nature.

The licensee's response to NRC concerns is mixed. Although corrective actions are generally taken in a timely and adequate manner, instances were noted where the licensee management strongly disagreed with inspection findings, when characterized as potential noncompliances. Inspection findings, however, when characterized as only potential concerns or weaknesses, were quickly and efficiently addressed. The licensee management tended to adopt an adversarial attitude when matters were identified as noncompliances, but would be cooperative when matters were identified as other than noncompliances.

The Corporate Property Protection Department was frequently involved in site activities and has been active in the performance of thorough and complete audits which have been effective uncovering weaknesses in the security system. Appropriate actions were taken by site management in response to audit recommendations. Audit personnel were well qualified and experienced in the area of physical security. In addition to the annual audit required by the security plan, the Corporate Property Protection Department conducted numerous effective surveillances throughout the assessment period, reviewing such areas as Training and Qualification Records, protection of Safeguards Information, and contractor screening records.

Security records were generally complete, well maintained, and available. The licensee generally has timely resolutions to technical issues, with the exception of the aforementioned weakness when they disagreed with the potential item of noncompliance on March 30, 1984 (exit interview) but did not provide a factual basis for their position until May 3, 1984 and May 11, 1984.

There have been few longstanding regulatory issues attributable to the licensee, with the exception of the procurement of an acceptable intrusion detection system for the protected area. In response to an Office of Nuclear Material Safety and Safeguards (NMSS) request dated May 12, 1983, the licensee submitted an implementation schedule which calls for intrusion detection system acceptance in November 1985. NMSS has concurred with the licensee's schedule.

Several actions to improve the existing security program have been initiated during this assessment period. These actions have included the upgrading of the on and off-site communications capabilities, initiated as a result of the January 8, 1984 loss-of-power incident and a computerized NUCPAS personnel control system.

The licensee experienced a single safeguards event reportable to the NRC under 10 CFR 73.71(c). This event should have been reported to the NRC within one hour; however, it was not reported until twenty hours after discovery of the event. This late reporting resulted in an item of noncompliance. All other safeguards events, not required by regulation to be reported, were properly logged.

Key positions within the security organization were identified and authorities are defined in security implementing procedures. Staffing was adequate.

The training and qualification program contributes to an adequate understanding of job responsibilities and fair adherence to procedures with a modest number of personnel errors.

2. Conclusion

The licensee is rated Category 2 in this area, the same as the last SALP period. Licensee performance has remained essentially unchanged over the course of the SALP assessment period.

3. Board Recommendation

None.

H. Refueling Operations

1. Analysis

Evaluation of this functional area was based on parts of three inspections conducted by the resident inspectors. No items of noncompliance were identified in these inspections, nor were any Licensee Event Reports (LERs) issued concerning problems resulting in this area either from personnel errors or deficient procedures. During each of the two previous plant refuelings, minor procedural noncompliances were identified.

Refueling activities were expanded beyond the norm during the outage covered by this appraisal - to include a complete core off-load in support of the 10 year reactor vessel Inservice Inspection (ISI) program. These activities evidenced consistent prior planning, well-stated and strictly implemented policies and procedures, and careful and correct management overview. Documentation was complete and well maintained.

Staffing, training and qualifications appeared ample to support safe, efficient completion of refueling-related requirements. In the one instance where a problem developed (contractor removed half-inch pipe cap affecting containment integrity control - LER 83-60), the licensee immediately recognized applicable requirements and halted fuel handling operations.

2. Conclusions

The licensee is rated Category 1 in this area. This is an improvement in performance since the last time this area was rated. The licensee's performance trend improved in this area.

3. Board Recommendations

None.

I. Quality Programs and Administrative Controls Affecting Quality

1. Analysis

The assessment of performance in this functional area is based on inspection findings related to quality assurance programs

and based on the effectiveness of the licensee's overall management control systems in achieving excellence of regulatory performance. The discernible decline in regulatory performance in the areas of operations, radiological controls, maintenance, surveillance, and emergency preparedness demonstrates that administrative controls have not been effective during this evaluation period.

Specific directed quality assurance inspections were made in the following areas: QA Program matters; auditing; procedures; corrective action; committees; reporting; design control; maintenance; program and implementation; procurement; surveillance; calibration; and training.

Two items of noncompliance were identified in this area as follows:

a. Severity Level V - Failure to provide technical justifications for the conditional release of nonconforming materials (Inspection Report No. 255/84-09).

b. Severity Level V - Failure to include adequate technical and quality requirements in purchase documents for safety-related material (Inspection Report No. 255/84-09).

The above noncompliances were of minor safety significance and did not appear to indicate any programmatic problems. Though noncompliance a. was not programmatic in nature, a disposition of the nonconforming material was required prior to relying on the material to perform a safety-related function. Noncompliance b. involved the procurement of a safety-related boric acid pump motor as a commercial grade item from an unapproved vendor. The pump's seismic and quality requirements were not identified in the purchase order. Further, the pump received was a different model than the one ordered. The engineering analysis performed to determine the acceptability of the substitute pump also did not address the seismic requirements. While this appeared to be an isolated case, it did represent the failure during two separate actions to ensure a replacement item met the original specifications.

Three Licensee Event Reports (LERs) identified in this area (Reports 83-57, 83-65 and 84-002) were caused by personnel error, and one LER (Report 84-005) appeared caused by a procedure deficiency. Similar causes were not noted in the previous SALP assessment. The events reported during this appraisal period appeared diverse in nature (consisting of one procurement, two design, and one procedure problem).

A defined Training Program has been implemented for a large portion of the staff which has led to a good understanding of policies and procedures. The licensee's policies in the areas inspected are adequately stated and understood by plant personnel.

Because several internal licensee corrective action documents involved design control matters (suggesting a potential problem area in conceiving, designing and implementing plant modifications effectively) a special inspection was performed to review this area. That inspection identified no significant programmatic deficiencies and no examples of noncompliance with regulatory requirements in the design control area.

The licensee's corrective action program activities were subjected to a thorough review as part of the Region III Trial Inspection Program conducted at Palisades during most of this SALP period. This included inspector review and evaluation of corrective action program documents at the Event Report level, which included all reportable events as a subset, and frequent attendance at Corrective Action Review Board (CARB) and Plant Review Committee (PRC) meetings. Licensee quarterly self-evaluation reports covering numbers, types and trends for corrective action documents were also routinely reviewed. These reviews indicated the licensee continued with effective implementation of their corrective action program.

A concern relating to Plant Review Committee (PRC) processing of certain types of review materials via a routing and balloting procedure was addressed during this appraisal period. When informed by NRC Region III that the procedure in use appeared inconsistent with existing Technical Specifications, the licensee halted the balloting system until the proposed Technical Specification was approved specifying permissible circumstances for its use.

2. Conclusions

The licensee is rated Category 2 in this area. While specific program elements which were examined did not identify major regulatory problems, the administrative controls were not effective in preventing a decline in performance in major functional areas. Based primarily on plant conditions and increased operational problems at the end of the period, the performance trend also was judged to have declined in this area during the assessment period.

3. Board Recommendations

The Board recommends aggressive NRC attention to determine the causes of the licensee's overall decline in regulatory performance and to influence timely licensee corrective action.

J. Licensing Activities

1. Analysis

The basis of this appraisal was the licensee's performance in support of licensing actions that were either completed or

active during the current rating period. These actions, consisting of license amendment requests, exemption requests, responses to generic letters, TMI action items, and other actions, are classified as follows:

Thirteen Completed Multi-Plant Actions included in this category were:

- Appendix I Technical Specification Implementation (RETS)
- Control of Heavy Loads
- Natural Circulation Cooldown
- ESF Reset Control
- PWR MSLB with Continued Feedwater Addition
- Containment Purge and Vent
- Containment Water Level Monitor
- Containment Hydrogen Monitor
- Containment Pressure Instrument
- Potential for Voiding in RCS
- RCS High Point Vents
- Post Accident Sampling Modifications
- TMI Technical Specifications

Twelve completed Plant-Specific Actions included in this category were:

- ISI Update
- Deletion of Requirements of November 9, 1979 Order
- Hydrotest Relief Request
- Delete Spare HPSI Pump from Technical Specifications
- Analysis of Axial Power Distribution Limits
- Steam Generator Inspection and Repair
- Change in Basis for Limiting Safety System Settings
- Justification of XNB Correlation
- Air Lock Leak Test Exemption
- Reactor Vessel Surveillance Specimen Schedule
- Integrated Assessment Supplement
- Change Technical Specification Surveillance Test Frequency (18 months to refueling)

The licensee's performance evaluation was based on a consideration of the following criteria:

- Management involvement
- Approach to resolution of technical issues
- Responsiveness to NRC initiatives
- Staffing

a. <u>Management Involvement and Control in Assuring Quality</u>

Licensing activities reflected an effective use of management efforts in the areas of prior planning and assignment of priorities. In general, the priority assigned to licensing activities was commensurate with the safety significance

of the issue. In regard to the longstanding regulatory issue of RETS, the licensee exhibited substantial corporate management involvement during the review process in shaping the licensing decisions. Management involvement was also particularly evident at meetings to resolve sensitive issues on RETS implementation and on steam generator repairs. Decisions were essentially made at a level that assures adequate management review. The reviews were generally timely, thorough and technically sound. Although there was some schedule slippage for follow-on analyses from the Systematic Evaluation Program (SEP), the staff was able to issue the Integrated Assessment Supplement in November 1983.

b. Approach to Resolution of Technical Issues from a Safety Standpoint

In general, the licensee demonstrated an understanding of the issues and solutions were conservative in nature. In regard to RETS implementation, plant personnel clearly understood the issues, were technically sound and thorough in their approaches, and were very cooperative in resolving problems. The licensee has shown improvement in this area overall over the course of the appraisal period. An example of the licensee's improved performance was the resolution to the steam generator problems during the last outage. The analyses presented to the staff were considered state-of-the-art and in some instances new ground was broken. The licensee handled the complex problem of establishing steam generator plugging limits in a commendable way.

c. Responsiveness to NRC Initiatives

As in the past, for those licensing actions of high priority, the licensee's responsiveness was very good. For the more routine type of licensing actions, the licensee continues to be a little slow in responding. Examples of activities in which the staff had some difficulty are followup evaluations for SEP, hydrogen recombiner test requirements, and response to IE Bulletin 80-04, "PWR Main Steamline Break with Continued Feedwater Addition." While some improvement in this area was evident, the licensee should continue to pay additional attention to the resolution of the staff's concerns on the lower priority activities. Followup on informal commitments made during telephone calls and meetings needs continued improvement. This is a repeat observation from SALP 4.

d. Staffing

The licensee generally used the appropriate staffing level to resolve open issues. The engineering and technical personnel supporting the steam generator repair were highly

competent. The appropriate expertise, from both the licensee's own staff and also consultants, was made available. For more complex licensing actions, such as environmental qualification, fire protection and radiological effluent Technical Specifications, additional licensing personnel were used to coordinate and provide project management assistance.

Near the end of the appraisal period, the agency was informed by the licensee of a forthcoming significant personnel reorganization affecting both the corporate and plant staffs. The reorganization appears, in part, to stem from recent financial difficulties the licensee is having. It was not possible to assess what effect, either short or long-term, if any, there might be as a result of this reorganization due to its implementation not taking place until after this appraisal period ended.

2. Conclusion

The licensee is rated Category 2 in this area, which is the same rating achieved in the last assessment period. The licensee, however, has improved in all of the criteria evaluated above. The improvement was especially evident during the review of the steam generator inspection and repair activities. Additional improvement is still needed in the area of responsiveness to those actions that are not of highest priority and in the area of followup on informal commitments.

3. Board Recommendations

None.

V. SUPPORTING DATA AND SUMMARIES

A. Licensee Activities

The Palisades Plant experienced very little routine power operation during this SALP period. A scheduled shutdown begun August 13, 1983 for refueling, testing, maintenance and modifications, and planned for about 100 days, was significantly extended to complete corrective action for unanticipated equipment problems discovered after the outage was well underway. These problems included: steam generator tube degradation identified via use of a newly designed and highly sophisticated eddy current test probe; auxiliary feedwater sparger and nozzle repairs; and, extended overhaul activities on the main electrical generator and both low pressure turbine rotors. Other major activities completed during the outage included: replacement of one primary coolant pump impeller; sealing leaks in the reactor shield cooling system; overhauls on major components such as main feed pumps and condensate pumps; numerous major modifications including auxiliary feedwater and control room HVAC; and a large number of routine and special tests including the 10 year reactor vessel Inservice Inspection. On completion of these activities in June 1984, additional problems were identified in startup testing and by various equipment failures which continued to delay and/or limit power operations. These problems included: pressurizer power cable overheating; condenser air leaks; PCS instrument loop weld failures; a containment spray pump and an auxiliary feedwater pump failure; main feed pump problems; and, finally, a primary coolant pump impeller failure.

B. Inspection Activities

As noted previously in this report, NRC Region III implemented a Trial Inspection Program at the Palisades Plant effective October 1, 1983 and continuing through the remainder of the SALP period. The program varied from the inspection programs routinely conducted at licensed nuclear plants primarily in the way inspection scheduling was conducted. The Trial Inspection Program limited "routine" inspection to the basic activities conducted out of the resident inspection office. Other inspections were then conducted on an "as needed" rather than on a calendar-driven basis, with the determination concerning the "need" for a specific type of inspection being made by a committee of Region III personnel (and the resident inspector) at regular monthly committee meetings. The overall effort of inspection time at Palisades was not greatly changed (slightly decreased) under the Trial Program, but there was some shifting of inspection-hour totals among inspection disciplines. Radiation protection and quality activity inspection levels were somewhat increased in the year encompassed by the Trial Program, for example, while resident inspection (principally due to reduction from two to one resident inspector in January 1984) and security and safeguards inspection were reduced. Also, there were fewer inspections overall, but the average inspection-hour effort per inspection was higher.

Table 1

Inspection Activity and Enforcement

	FUNCTIONAL AREA	No. of Violations in Each Severity Level I	II	III	IV	V
1.	Plant Operations				3	2
2.	Radiological Controls			2*	2	1
3.	Maintenance and Modifications					
4.	Surveillance and Inservice Testing				1	1
5.	Fire Protection and Housekeeping					
6.	Emergency Preparedness				4	
7.	Security				4	
8.	Refueling Operations					
9.	Quality Programs and Administrative Controls					3
10.	Licensing Activities					
	TOTALS	0	0	2*	14	7

*One item involved four noncompliances classified a Level III problem in the aggregate; the other was a radwaste transportation noncompliance.

C. Investigations and Allegation Review

One inspection was begun during this SALP period to review allegations relating to personnel job performance and qualifications. The review was not yet complete at the end of the period.

D. Escalated Enforcement Action

None.

E. Management Conferences Held During Appraisal Period

1. Management Conferences

a. September 16, 1983 (Palisades plant site): Systematic Assessment of Licensee Performance (SALP 4 - July 1, 1982 through June 30, 1983).

b. March 5, 1984 (Glen Ellyn, IL): Enforcement Conference for discussion of regulatory concerns relating to the loss of power and communications event of January 8, 1984.

c. April 27, 1984 (Glen Ellyn, IL): Enforcement Conference for discussion of regulatory concerns relating to apparent overexposure of a diver working in the reactor cavity on March 18, 1984.

2. Confirmation of Action Letters

A Confirmation of Action Letter dated July 13, 1984 addressed licensee actions in response to finding damaged (overheated) cables in containment cable tray CP-250. (See IV.C. above)

F. Review of Licensee Event Reports and 10 CFR 21 Reports Submitted by the Licensee

1. Licensee Event Reports (LERs)

On August 29, 1983, the NRC published an amendment clarifying its regulations regarding Licensee Event Reports required by 10 CFR 50.73. Details of the new reporting system were published as NUREG-1022, "Licensee Event Report System." The effective date of this amendment was January 1, 1984. The new rule deleted reporting requirements for several types of licensee events which have been found, through experience, to be of little value to the Commission. The LERs for this evaluation period include 83-43 through 83-79 and 84-001 through 84-022.

Proximate Cause Code Assignments

Cause Type	SALP 3	SALP 4	SALP 5
Personnel Error	6	3	15
Design Deficiency	2	5	6
Deficient Procedure	3	3	8
Component Failure	27	46	20
Other	7	15	10
Totals	45	72	59

Discussion:

The LERs provided sufficient information to give a clear and adequate description of the occurrence, the direct consequences, and the corrective action.

The licensee provided very good supplemental information reports and did so on a voluntary basis; the Office for Analysis and Evaluation of Operational Data (AEOD) considered LER 84-001 to be the best written report they reviewed to date for 1984. On balance, however, a significant lack of updated LERs from the licensee was noted. A compounding problem was that none of the reports referenced previous, similar occurrences. This was disturbing because of the obvious repetitive nature of some events during the review period, for example, in the recurring safety injection tank failures and the spurious safety injection signal actuations.

SALP 5 encompassed 16 months while each of the previous two periods encompassed 12 months. With these facts in mind, it nevertheless appears evident the licensee experienced an increase in reportable events during the most recent SALP period based on either personnel errors or deficient procedures as the proximate cause. Both SALP periods preceding the current one were considered exemplary for the low occurrence rates achieved for these event types. The personnel error events of the current period were spread among several departments: with two ascribed to licensed operators; four to surveillance activities (three were missed/overdue tests); three to missed/late fire tours; three to quality activities; and one equipment operator error. Some of these areas had not experienced personnel error events in the previous SALP, as is addressed in the respective functional area analyses above and considered in the respective performance category ratings. Procedure deficiency events were similarly diverse: with three events involving maintenance and construction; two involving surveillance; and, one each in operations, fire protection, and quality activities (modification implementation). These are also addressed in the individual functional area analyses above.

The overall rate of safety-related component failures remained relatively low and essentially the same as during the previous SALP.

The events in the "other" cause category remained apparently random in nature.

2. Part 21 Reports

Two Part 21 Reports were generated from and resolved for the Palisades plant during the appraisal period. The first item involved incorrect manufacture of steam generator hydraulic snubbers by ITT-Grinnel for installation as original plant equipment in about 1969. The error involved insufficient counterbore for an internal shuttle mechanism such that hydraulic fluid port clearances were improper. This was discovered during voluntary licensee snubber testing conducted under contract by Wyle Laboratories. All sixteen snubbers were identically affected, and all were correctly rebored, reassembled, and retested satisfactorily prior to reinstallation at the plant.

The second item involved potential internal interference between a manual closing lanyard and the latching mechanism in 2400V Seimens-Allis circuit breakers. This was identified in investigation of the maloperation of breaker 52-105 during the loss-of-power event of January 8, 1984. The affected breaker was overhauled. Similar breakers were all inspected and appropriate adjustments made, and the assembly instructions in the pertinent maintenance procedure were reissued to provide a specific clearance drawing and instructions to prevent a recurrence.