

SALP BOARD REPORT

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

50-266/89001; 50-301/89001
Inspection Report Nos.

Wisconsin Electric Company
Name of Licensee

Point Beach Nuclear Power Station
Name of Facility

October 1, 1987, through March 31, 1989
Assessment Period

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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 on the basis of this information. The program is supplemental to normal regulatory processes used to ensure compliance with NRC rules and regulations. SALP is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful feedback to the licensee's management regarding the NRC's assessment of their facility's performance in each functional area.

An NRC SALP Board, composed of the staff members listed below, met on May 15, 1989, to review the observations and data on performance, and to assess licensee performance in accordance with the guidance in NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance." The guidance and evaluation criteria are summarized in Section III of this report. The Board's findings and recommendations were forwarded to the NRC Regional Administrator for approval and issuance.

This report is the NRC's assessment of the licensee's safety performance at Point Beach for the period October 1, 1987, through March 31, 1989.

SALP Board for Point Beach was composed of:

<u>Name</u>	<u>Title</u>
*H. J. Miller	SALP Board Chairman, Director, Division of Reactor Safety (DRS)
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* Denotes voting members.

**Denotes voting member for Plant Operations, Radiological Controls, Emergency Preparedness, and Security functional areas.

***Denotes voting member for Maintenance/Surveillance, Engineering/Technical Support, and Safety Assessment/Quality Verification functional areas.

#Denotes voting member for Maintenance/Surveillance and Engineering/Technical Support functional areas.

##Denotes voting member for Emergency Preparedness functional area.

###Denotes voting member for Security functional area.

II. SUMMARY OF RESULTS

A. Overview

This assessment period is from October 1, 1987, through March 31, 1989. During this time period both units operated normally except for routine refueling outages, and the licensee's performance continued to be good. It received Category 1 ratings in Radiological Controls and Maintenance/Surveillance, and Category 2 ratings in all other areas. The Category 1 rating for Radiological Controls was an increase from the Category 2 rating it received in the previous assessment period. The improved rating was a result of good staffing, management involvement, and enforcement history. The Category 2 rating in Plant Operations indicated an improving trend due in considerable part to knowledgeable and professional operators who kept abreast of plant conditions. Also contributing to the rating was the "black board" condition maintained on the annunciator panels, and the quiet atmosphere in the control room where non-business activities are not tolerated. One area, Security, declined to a Category 2 rating from a Category 1 rating based primarily on the lack of effective long-term corrective actions to resolve regulatory enforcement issues which resulted in repetitive events. One weak area is the reluctance and slowness at times in the licensee's responsiveness to, and communications with, the NRC. This was exemplified on several occasions. There also appears to be at times a lack of communications between the corporate staff and the site staff as exemplified when the site staff informed NRC that the schedule for replacing station batteries was being changed, but corporate personnel were unaware of it.

The performance ratings during the previous assessment period and this assessment period according to functional areas are given below:

<u>Functional Area</u>	<u>Rating Last Period</u>	<u>Rating This Period</u>	<u>Trend</u>
Plant Operations	2	2	Improving
Radiological Controls	2	1	
Maintenance/ Surveillance	1/1	1	
Emergency Preparedness	2	2	
Security	1	2	
Engineering/Technical Support	NR	2	
Safety Assessment/ Quality Verification	NR	2	

B. Other Areas of Interest

None.

III. CRITERIA

Licensee performance is assessed in selected functional areas. Functional areas normally represent areas significant to nuclear safety and the environment. 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.

The following evaluation criteria were used to assess each functional area:

1. Assurance of quality, including management involvement and control;
2. Approach to the resolution of technical issues from a safety standpoint;
3. Responsiveness to NRC initiatives;
4. Enforcement history;
5. Operational events (including response to, analyses of, reporting of, and corrective actions for);
6. Staffing (including management);
7. Effectiveness of training and qualification program.

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

On the basis of the NRC assessment, each functional area evaluated is rated according to three performance categories. The definitions of these performance categories are as follows:

Category 1: Licensee management attention and involvement are readily evident and place emphasis on superior performance of nuclear safety or safeguards activities, with the resulting performance substantially exceeding regulatory requirements. Licensee resources are ample and effectively used so that a high level of plant and personnel performance is being achieved. Reduced NRC attention may be appropriate.

Category 2: Licensee management attention to and involvement in the performance of nuclear safety or safeguards activities are good. The licensee has attained a level of performance above that needed to meet regulatory requirements. Licensee resources are adequate and reasonably allocated so that good plant and personnel performance is being achieved. NRC attention may be maintained at normal levels.

Category 3: Licensee management attention to and involvement in the performance of nuclear safety or safeguards activities are not sufficient. The licensee's performance does not significantly exceed that needed to meet minimal regulatory requirements. Licensee resources appear to be strained or not effectively used. NRC attention should be increased above normal levels.

The SALP report may include an appraisal of the performance trend in a functional area for use as a predictive indicator if near-term performance is of interest. Licensee performance during the last quarter of the assessment period should be examined to determine whether a trend exists. Normally, this performance trend should only be used if both a definite trend is discernable and continuation of the trend may result in a change in performance rating.

The trend, if used, is defined as:

Improving: Licensee performance was determined to be improving near the close of the assessment period.

Declining: Licensee performance was determined to be declining near the close of the assessment period, and the licensee had not taken meaningful steps to address this pattern.

IV. PERFORMANCE ANALYSIS

A. Plant Operations

1. Analysis

Evaluation of this functional area was based on the results of routine inspections by the resident inspectors and one inspection by regional inspectors.

Enforcement history in this functional area improved during this assessment period; only one Severity Level IV violation was issued. During the previous assessment period, one Severity Level III violation, two Severity Level IV violations, three Severity Level V violations, and one deviation were issued.

The number of events in this functional area requiring the submittal of licensee event reports (LERs) decreased during this assessment period; six LERs were issued compared with ten during the previous period. Two of the LERs involved personnel errors and four involved equipment failures. None of the events had any major safety significance.

The plant had a total of 4 reactor trips during this 18-month assessment period, compared with 11 reactor trips during the previous 18-month period. One of the trips was associated with Unit 1 and three with Unit 2. One of the trips from the current period (from 100% power) was attributed to activities in the maintenance/surveillance area resulting from personnel error. The remaining three, all resulting in rod motion, two from at power conditions and one from hot shutdown, were attributed to equipment failures in the Plant Operations area.

Licensee management personnel maintained an active involvement in matters relating to the operation of the facility and frequently visited the control room. A recent management reorganization has placed operations, health physics, chemistry, and training departments under one general superintendent, which enhanced the staff working relationship among these organizations.

Staffing of licensed operators remained stable during this period. Although 15 non-licensed operations personnel transferred to other licensee organizations for career enhancement during a reorganization, 15 replacements were hired, increasing the total staff. The licensee was selective in hiring the new employees and did not accept anyone it believed could not eventually be a reactor operator. These changes have had no detrimental effects on plant operations or performance.

Licensed operators were on a six-shift rotation for this period. Overtime use has increased because six operators failed requalification examinations late in the assessment period and were removed from licensed duties, but the overtime is controlled and does not exceed NRC guidelines.

The effectiveness of the licensee's training program for licensed operators decreased from the previous assessment period. In this assessment period, one set of replacement examinations and one set of requalification examinations were given. In the replacement exams, 6 of 8 candidates passed (a 75% pass rate) and in the requalification exams 7 of 12 passed (a 58% pass rate).

The licensee completed control room habitability improvements during this assessment period including installing carpet to reduce noise levels. Activities also are controlled to provide a distraction-free environment; only industry-related reading material is allowed in the control room; and non-business conversations or discussions are very seldom heard. Operations personnel are alert, exhibit a high degree of professionalism in all facets of control room operation, respond to all alarms immediately, and are knowledgeable of the plant. This was evident several times during the assessment period when operators correctly evaluated operational conditions relating to instrumentation and component malfunctions and took proper corrective actions to avert challenges to automatic protective systems. A good licensee practice to improve the operators plant knowledge is to rotate operators through different job positions in the control room and in the rest of the plant so they are familiar with plant systems and conditions.

The licensee is proactive in maintaining a "black board" condition in the control room (a condition which usually existed). One of the main reasons for this is that the operations staff immediately initiates actions to repair malfunctioning alarms and a high priority is placed on completing the repairs.

A specific area of NRC concern was related to a lack of attention to detail. In two instances the licensee discovered it was operating outside of Technical Specification limiting conditions for operation but within Technical Specification general considerations. One of these instances involved both emergency diesel generators being technically inoperable and the other instance involved operation with both trains of Unit 1 containment spray inoperable. In both cases, the licensee was able to identify the condition and the operators took prompt corrective action to reestablish proper alignment prior to the expiration of the general consideration time

limit of three hours, thus avoiding a violation of the Technical Specifications. The two events could have been averted through the use of a caution statement reminding the operators to ensure the operability of the opposite train while train-related maintenance or testing was in progress. The licensee appears to rely too heavily, at times, on the alertness and knowledge of the operational staff to ensure the safe and proper operation of the plant rather than to insert caution statements in the procedures. This reliance, especially in times of high activity, was a contributor to several improper or inappropriate actions during this assessment period. Better use of caution statements could alleviate this problem and relieve some of the burden on the operations staff.

Two other instances of lack of attention were related to the transfer of inverter power supplies by operations personnel. The events appeared to center on the operator's reliance on mechanical interlocks for ensuring the proper transfer between normal and alternate power supplies. In both of these instances improper transfer resulted in operational anomalies; once in a reactor trip and once in a short duration turbine runback. Still another instance resulted in the deenergizing of both trains of safeguards relays required to activate containment vent and purge valves for 24 hours due to the improper implementation of tagging procedures.

The licensee's responsiveness to, and communications with, the NRC at times was less than adequate. One case involved an issue relating to the potential for rendering both trains of the safety injection system inoperable under certain conditions. The inspector was not told about this but read about it in internal licensee correspondence. He requested the licensee to modify its procedures to caution the reactor operators, but the licensee disagreed that this was necessary. The inspector then requested that the operators be informed of the potential problem but the licensee again resisted. After further discussion, the licensee agreed to issue information in the form of "right orders." This problem raises questions about the completeness and adequacy of procedures. Another example of a lack of responsiveness involved the use of a temporary containment personnel access door during fuel movement. Still another case was the firing of a security guard for sleeping on duty; the resident inspector discovered this by reading licensee documents. The licensee was responsive, however, when the NRC discovered that a list of personnel authorized to approve tagging equipment out-of-service was out of date. When this was pointed out to the licensee, the concern was immediately corrected.

Housekeeping conditions within the facility continued to be good during this assessment period with the exception of the

service water building. Two noticeable improvements in the plant were repainting and color coding of the turbine building and the initiation of an extensive labeling program. The fire protection program is excellent and responses to fire drills are immediate. Typically, more than the minimum number of personnel respond to these drills for training purposes, and the drills are well critiqued.

Point Beach Unit 1 had a reactor availability of 89.4% during calendar year 1988, and Unit 2 had a reactor availability of 87.7%, both of which are considerably higher than the industry average. This is indicative of good maintenance work and few personnel errors by operations personnel.

2. Performance Rating

The licensee's performance is rated Category 2 with an improving trend in this area. The licensee's performance was rated Category 2 in the previous assessment period.

3. Recommendations

None.

B. Radiological Controls

1. Analysis

Evaluation of this functional area was based on the results of seven routine inspections by regional inspectors and observations by the resident inspectors.

Enforcement history improved during this assessment period; only one Severity Level IV violation was issued compared with one Severity Level III violation, two Severity Level IV violations, and one Severity Level violation during the previous assessment period. The violation, which involved a programmatic weakness regarding failure to identify and post high radiation areas (HRAs), was satisfactorily corrected.

There were no LERs attributed to this functional area.

Staffing and qualifications was good. Staff experience has improved significantly as result of low staff turnover. As a result of technical staff additions and training completion, the licensee now covers all shifts with qualified radiological control operators (RCOs). The addition of the Superintendent-Health Physics (HP), a new position established in response to previous NRC concerns, during the latter part of the previous assessment period has improved technical and administrative direction of the HP program. HP training was strengthened for RCOs and, plant and contractor staff.

Management involvement in ensuring quality was good and improved from the previous period. Improvement was evidenced by the increased emphasis placed on procedural adherence and by improvements related to previously identified weaknesses in staffing and contamination control. On the other hand, the station was slow to install improved HRA barriers to replace rope barriers that were found degraded.

Responsiveness to NRC initiatives generally was good, particularly in regard to inspector identified weaknesses associated with hot particle and HRA identification and to control problems associated with fuel element transfers. The licensee also was responsive to NRC concerns regarding the radiation work permit (RWP) system, procedural revisions, full-time staffing, installation of replacement air filters, state-of-the-art monitoring equipment, and radwaste audits.

The licensee's approach to resolving technical issues continues to improve. Good performance was evident in the radiological incident investigation and assessment program and in the licensee's aggressive program for identification and evaluation of hot particle occurrences. Programmatic weaknesses were evident, however, in the licensee's failure to properly post and control transient HRAs during fuel movement. These weaknesses were corrected following issuance of a violation. The quality of radiological confirmatory measurements continued to be good with 83 agreements out of 88 comparisons, and the licensee is investigating alternate analytical methods to improve primary coolant analyses. The radiological environmental monitoring program was implemented in accordance with requirements with no indication of environmental impact from plant operation.

Total station dose for 1988 was about 387 person-rem, significantly below the licensee's 1987 total dose of 532 person-rem and below the licensee's 3-year average of about 480 person-rem, and significantly below the national average. Internal dose problems appeared minimal. The installation of more sensitive detectors resulted in the identification of more personnel contamination events, but the licensee's performance was not atypical. Liquid and gaseous radioactive effluent releases remained low as did solid radwaste volume. No transportation incident occurred during this assessment period.

2. Performance Rating

The licensee's performance is rated Category 1 in this area. The licensee's performance was rated Category 2 in the previous assessment period.

3. Recommendations

None.

C. Maintenance/Surveillance

1. Analysis

Evaluation of this functional area was based on the results of routine inspections conducted by resident inspectors and five inspections by regional inspectors. Maintenance and surveillance were separate functional areas in the previous assessment period, but have been combined into one functional area for this assessment period.

The enforcement history remained about the same during this assessment period as in the previous period. Two Severity Level IV violations were issued (one for maintenance and one for surveillance) compared with one Severity Level IV in surveillance in the previous assessment period. Both of the violations concerned procedural compliance.

The number of events in this functional area requiring the submittal of LERs increased during this assessment period; seven LERs were issued compared with four during the previous period (two in maintenance and two in surveillance). Four of the current events resulted from age degraded equipment failures; two resulted from procedure defects; and one from personnel error during the performance of surveillance/maintenance activities. Another personnel error (LER issued subsequent to the assessment period) resulted in the inadvertent actuation of fire protection equipment and caused a reactor trip. With the exception of the reactor trip, none of the events had any major safety significance.

Staffing in this functional area was a licensee strength. A recent reorganization placed maintenance and engineering staffs under the same general superintendent to further strengthen the good working relationships between the groups. This reorganization resulted in the transfer of 13 non-licensed operations personnel into the maintenance staff, which further increased the workforce with personnel familiar with plant operations. The low turnover and high level of experience continued to be one of the strong points of this functional area. The Chemistry Department also was reorganized with a Superintendent-Chemistry under the General Manager. The staff included 7 chemists and 11 laboratory technicians, 8 of whom were qualified to ANSI N18.1-1971. Staffing in the surveillance area was adequate.

Management involvement in ensuring quality in this functional area was a strength. Refueling outages performed during this assessment (Unit 2 in October 1987 and October 1988, and Unit 1 in April-May 1988) were well managed and all three were completed close to the original estimated completion date. Other examples of performance that were indicative of good management involvement that were initiated or completed during this assessment period included: incorporating past work history into the Computerized History and Maintenance Planning System (CHAMPS); upgrading of facility maintenance procedures; initiating a weekly schedule of all maintenance items; a low forced outage rate; and a comprehensive motor-operated valve program to meet the requirements of NRC Bulletin 85-03, "Motor-Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Settings." In addition, the water chemistry program conformed to both the Electric Power Research Institute (EPRI) steam generator owners guidelines and primary water chemistry guidelines. Water chemistry parameters were well within the guidelines.

Management personnel were involved in the conduct of maintenance and surveillance at the facility and often visited the job site. First level supervisors closely followed activities and kept upper level management informed of work status on a daily basis. Problems encountered during surveillance and maintenance activities were quickly communicated to management personnel, which produced effective and efficient resolution of issues. One example was the well-documented safety evaluation review associated with a missing nozzle dam flange ring insert; this evaluation showed a clear understanding of the issue, and the resolution demonstrated a sound and thorough approach with sufficient conservatism. Completion of the new North Services Building was a major initiative that increased the effectiveness of maintenance and surveillance activities. The new building includes an instrumentation and control (I&C) shop area, office area, conference/library room as well as a new chemistry laboratory and water treatment facility.

The maintenance work backlog is maintained at a manageable level, work is well-controlled, and rework is very seldom needed. The CHAMPS system has proven to be a very useful tool for tracking maintenance activities. Preventive maintenance activities are routinely completed on schedule and the work is done properly. One indication of its effectiveness is the low forced outage rate. The inservice inspection program also is adequate.

Generally, the surveillance program performance was good. I&C technicians maintained good communications with operations personnel during the performance of tests, thus allowing the operators to closely follow the testing and remain cognizant

of its status. Another good practice is that the procedure used for taking vibration readings on the auxiliary feedwater pumps requires the data to be relayed to the control room where the operators compare the data to the maximum allowed reading. This prevents prejudices by the data taker. One weakness, however, appears to be a lack of attention to detail at times by I&C personnel. This resulted in two violations, a reactor trip, errors in a surveillance that caused a challenge to a protection system and two specific instances in one day by the same individual that caused an upset of the reactor control systems. The individual involved is a qualified technician and the two events appear to be isolated cases.

The licensee's response to NRC initiatives was timely and aggressive in the cases where the concerns posed immediate operational or safety questions. Followup and response to less immediate NRC concerns, however, are sometimes slow and often required additional requests by the NRC. This especially was true for a case involving worn and possibly degraded fuel lines on the emergency diesel generators.

2. Performance Rating

The licensee's performance is rated Category 1 in this area. The licensee's performance was rated Category 1 in both the maintenance and surveillance functional areas in the previous assessment period.

3. Recommendations

None.

D. Emergency Preparedness

1. Analysis

Evaluation of this functional area was based on the results of four inspections conducted by regional inspectors and resident inspector observations of drills during this assessment period. Regional inspections included observation of the 1988 and 1989 annual emergency preparedness exercises, a special inspection to evaluate facilities available for an NRC site team, and a routine inspection.

Enforcement history remained the same, with no violations identified during this or the previous assessment period.

The Emergency Plan was activated three times during this assessment period; each activation was the result of a declaration of an Unusual Event. Activations that were

reviewed were determined to have been properly classified with subsequent State, local, and NRC notifications completed as required.

Management involvement in ensuring quality in this area was good, as evidenced by corporate and plant management's participation in exit meetings following each inspection and as evaluators during exercises. Use of management personnel as exercise evaluators has provided insight into exercise problems. Furthermore, several improvements were made in the drill control room in order to improve realism. Special out-of-service tags were used to indicate equipment that is out-of-service for purpose of the drill. Radiation monitoring system trend data is available but is visible only when called for by an operator. A special personal computer has been installed to display alarm messages. Although lacking a simulator, the licensee had done an excellent job of setting up a drill control room that attempts to be as realistic as possible.

The licensee has been generally responsive to NRC-identified concerns providing viable responses. For example, the licensee has a self-imposed goal of 30 minutes to notify the NRC of reportable events as opposed to the required limit of 1 hour. In addition, at the NRC's request, prior to the 1989 exercise, the licensee enhanced the NRC communications capability and incorporated collocation of NRC response personnel into the Emergency Operations Facility (EOF) and Technical Support Center (TSC).

When resolving weaknesses from a safety standpoint, the licensee demonstrated a good understanding of the issues involved. A number of facility improvements were made during the assessment period, including redesign of the EOF and TSC. While the EOF is small by current standards, significant improvements were made in preparation for the 1989 exercise. Both the EOF and TSC are now maintained in a ready (single-use) condition. In addition, monthly unannounced communications tests were conducted with State and local agencies, which proved a valuable tool in keeping offsite officials trained and familiar with the communications system and procedures. The licensee also quickly identified and repaired problems with the prompt notification system (sirens).

Staffing of emergency response positions was good and callout drills were held to substantiate that staffing requirements of the Emergency Plan could be met within the required response times. The authorities and responsibilities of emergency response personnel have been well identified. Previously identified deficiencies in staffing of the EOF were corrected.

Normal activities of the emergency response program were being adequately maintained by two onsite emergency preparedness personnel and a part-time corporate assistance.

Licensee personnel demonstrated their knowledge and capability to carry out emergency response duties and responsibilities in walkthroughs during the routine inspection. This indicated that the licensee's training program had adequately prepared personnel for their assignments. However, the NRC identified one concern during the 1988 routine inspection in that annual training was not assured for all emergency response personnel.

The 1988 and 1989 emergency exercises were considered adequate to exercise the Emergency Plan. The NRC participated with the utility for the first time during the 1989 exercise. Evaluation of the 1988 exercise identified an untimely declaration of a General Emergency. The 1989 exercise resulted in a finding that the scenario release path was not identified and mitigation was not attempted in a timely manner. While a single exercise weakness was identified during each exercise, the 1989 exercise also resulted in several open items, two unresolved items, and a decline in exercise performance. Neither of the two exercise weaknesses was considered sufficiently significant to require a remedial exercise, but they indicated a need for more attention to overall program detail.

2. Performance Rating

The licensee's performance was rated Category 2 in this area. The licensee's performance was rated Category 2 in the previous assessment period.

3. Recommendations

None.

E. Security

1. Analysis

Evaluation of this functional area was based on the results of three routine inspections and one reactive security inspection conducted by regional physical security inspectors and on routine observations of security activities by the resident inspectors.

Enforcement history remained about the same in this functional area during this assessment period; five Severity Level IV violations and one Severity Level V violation were identified during this assessment period compared with one Severity

Level III violation, one Severity Level IV violation, and one Severity Level V violation in the previous assessment period. Four violations identified during this assessment period involved inadequate vital area barriers as did two of the violations during the previous period. Violations were identified in each of the four inspections conducted during this assessment period. This continued decline in enforcement history, particularly in light of the general repetitive nature of vital area barrier problems, represents a weakness in the licensee's program.

Management involvement in ensuring quality was generally weak during this assessment period. The repetitive nature of vital area barrier violations showed that the licensee's corrective actions failed to be completely effective. Although some positive management actions were taken, such as retaining a contractor to evaluate an alarm system for potential vulnerabilities, management did not follow through effectively on some vulnerabilities identified during this evaluation until addressed by NRC inspectors.

Late in the assessment period the experienced site security supervisor transferred and was replaced, on an interim basis, by an individual who was experienced in licensing issues but not in security matters. The individual's responsibilities were also divided between security, licensing, and other operational matters. To supplement the site security staff, an additional security professional was retained as a second security coordinator. However, this individual will be in a training status until mid-1989. Although assisted by the two security coordinators, the responsibility for ensuring quality continues to rest with the acting security supervisor who has other non-security-related duties. Ample personnel resources were available to develop and maintain an adequate security program.

The licensee's approach to the resolution of technical security issues generally is a strength. When the need was determined, aging equipment was replaced with state-of-the-art hardware in an effective manner. Major efforts were begun or completed on upgrading the quality of security plan commitments, replacing the security computer hardware and software to improve effectiveness, improving vital area alarm system and locking devices, and installing state-of-the-art metal detectors and protected area intrusion alarm equipment.

The licensee is in an early stage of developing a proactive program to identify and resolve technical security issues. This "indicators" program may be effective in addressing security problems if it is used by management to adequately follow through on identified weaknesses.

The licensee's responsiveness to NRC initiatives has generally been adequate. Its immediate actions to address individual violations and inspector-identified weaknesses were technically sound and timely. However, long-term actions were not adequate to identify and correct root causes. Also, the development of a performance indicator program, upgrading of certain alarm systems, and upgrading other equipment demonstrates a positive approach in responding to NRC concerns and was considered a program strength.

The licensee's program for reporting security events was adequate and licensee efforts in keeping NRC informed of other matters was good. Required reports were generally accurate and timely. There were five event reports made during this assessment period. Three reports concerned degraded vital area barriers and each resulted in a violation. In general, security-related records were complete, well maintained, and readily available.

Staffing of the security organization was adequate to maintain a program that meets regulatory requirements. However, the program strength of adding a second security coordinator was offset by the appointment of an individual as security supervisor who also had several other duties. The staffing of the uniformed guard force, both managers and line officers, was adequate.

The training and qualification for security officers was excellent and continued to be effective and innovative. The use of professional educators from a local college to design and implement a major portion of the training program has helped to provide well motivated, experienced, and knowledgeable security officers. This was clearly a major strength of the licensee's overall security program.

During the period, the licensee submitted revisions to the Physical Security Plan. The revisions provided sound and conservative technical safeguard solutions, indicating an understanding of the issues. However, timeliness of some submittals was slow and resulted in the NRC identifying a violation. There was evidence of prior planning by utility management and of generally adequate policies and procedures for control of security-related activities. The security organization positions and responsibilities appear to be well defined, providing for an ample security staff and a well-trained guard force.

2. Performance Rating

The licensee's performance is rated Category 2 in this area. The licensee's performance was rated Category 1 in the previous assessment period.

3. Recommendations

None.

F. Engineering/Technical Support

1. Analysis

This is a new functional area and consequently was not rated in previous SALPs. Evaluation of this functional area was based on the results of five routine inspections by regional inspectors, and evaluation of the licensed operator requalification program as well as several inspections by the resident inspectors.

Enforcement history in this functional area was very good with only one Severity Level IV violation being issued. Since this area was not rated during the previous assessment period, no prior enforcement history is available for comparison.

Five events requiring the submittal of LERs in this functional area occurred during this assessment period. Two involved procedural defects and three were related to design defects.

Management involvement to ensure quality in this functional area was generally adequate. Decisions were made at a level that usually ensured adequate management review and licensee activities exhibited evidence of prior planning and assignment of priorities. Management was aware of the importance of the technical issues and made necessary arrangements to support NRC technical reviews. In one case, the licensee responded immediately and on short notice to a special request from the NRC for information on diesel generator fuel oil. In another case, when there were indications following a refueling outage that the electrical output may be too high, power was reduced until the situation could be evaluated; the licensee then discovered it had a better condenser vacuum than thought and the plant efficiency had improved. In still another case, the licensee kept the NRC informed while it evaluated a damaged grid strap on a fuel assembly.

Management efforts to improve the thoroughness of design change analysis and documentation were evident in recent design change packages. This included some improvement in the quality of the 10 CFR 50.59 evaluations performed by Engineering Department personnel. There was evidence of prior planning and assignment of priorities for NRC Bulletin 79-14, "Seismic Analyses for As-Built Safety-Related Piping Systems," implementation activities. These activities were controlled by well stated and well defined procedures, although some minor discrepancies in as-built drawings were

noted. Effective controls were provided in the equipment classification area where the licensee implemented a computerized equipment listing.

The licensee's resolution of technical issues was mixed. On the positive side, for example, the discrepancies found with the as-built drawings associated with NRC Bulletin 79-14 were clearly understood and the approach taken by the licensee to resolve these discrepancies was technically sound and thorough. Adequate conservatism was used during these evaluations. The licensee developed a detailed and thorough set of procedures for performing periodic reactor trip system functional tests, and the program for review and evaluation of equipment failures included both in-plant failures and failure reports from the industry. Other examples of the plant staff's resolution of complex technical issues and good engineering work, included the revised steam line break analysis, environmental qualification (EQ) problems with extension wires on some solenoid valves, design deficiencies with a fire door, and monitoring programs established to achieve neutron streaming reductions. Technical efforts to characterize flaw indications in the safety injection nozzle-to-vessel weld, and response to NRC Bulletin 88-02, "Rapidly Propagating Fatigue Cracks in Steam Generator Tubes," were examples of aggressive engineering work. The licensee responded to flaw indications in the safety injection nozzle weld by sponsoring (in conjunction with another utility and a research institute) a comprehensive program to provide the dimensions and characteristics of the flaw size.

On the other hand, there were examples where engineering submittals demonstrated a lack of understanding of NRC requirements for particular technical issues. One example included an evaluation associated with upgraded fuel and core features in which the first submittal did not contain sufficient technical information for an NRC review. Another submittal, regarding relief and safety valve testing, required two additional formal requests for additional information in addition to a telephone call before the NRC could adequately review the issue. Another example was a failure to perform a safety reevaluation before replacing the low pressure feedwater heater tube bundles because the potential safety impact was not recognized and therefore it was not believed to be necessary. Still another example was a weakness in documenting the rationale for accepting test results not meeting the original acceptance criteria.

The licensee's responsiveness to NRC initiatives was generally good although examples of inadequate responses occurred. The licensee provided timely and thorough information when requested for several issues, including the initial response to a reinspection for NRC Bulletin 79-14, and responding to

the NRC-identified failure to perform a 10 CFR 50.59 analysis on the low pressure feedwater heater tube bundles. The effort and timeliness in developing the licensed operator requalification examination program with regard to both quality and quantity of materials generated was commendable. Examples of inadequate responses included the station batteries issue discussed previously and the failure to act promptly on the worn fuel lines on the emergency diesel generator that were identified by the senior resident inspector.

Staffing was good. Engineering and technical support groups have maintained a stable and experienced workforce over the assessment period. The only staff changes were the transfer of two engineers out of the engineering group and the hiring of three new engineers. The low turnover ensures continuity in engineering projects and was considered a strength. The training department lost two individuals, but hired seven new instructors. This overall increase in the training staff was considered an improvement. There was no evidence of a staffing shortage.

Training and qualification effectiveness was adequate. The quality of the technical staff effort indicated an adequately trained staff. The training program for maintenance personnel was good. The licensee received accreditation from the Institute of Nuclear Power Operations (INPO) for electrical, mechanical and I&C maintenance technicians and chemistry training programs. Each technician received both classroom and on-the-job training at each level of progression from new hire to journeyman technician. The engineering staff at the corporate office had the necessary technical expertise to evaluate discrepancies, and if outside consultants were used, the licensee had sufficient technical expertise to provide adequate technical oversight. Major accomplishments in the area of training support included the completion of the new training facilities and a contract for the purchase of a dual unit simulator to be delivered in 1991.

The requalification examinations administered to licensed operators in February 1989, showed a 58% passing rate, which resulted in the program being rated as unsatisfactory. All failures occurred in the static simulator written exam. After notification of the requalification problems, the licensee took prompt action to ensure adequate training and reevaluation. Also, a post-requalification exam review was done to identify areas of weakness and to formulate corrective adjustments. The actions and results were appropriate.

2. Performance Rating

The licensee's performance is rated Category 2 in this area. Because this is a new area, no rating is available for the previous assessment period.

3. Recommendations

None.

G. Safety Assessment/Quality Verification

1. Analysis

This is a new functional area and consequently was not rated in previous SALPs. Evaluation of this functional area was based on routine inspections performed by resident and regional inspectors and input from the NRR licensing project manager. There were no violations or LERs attributed to this functional area during this assessment period.

Management involvement in ensuring quality was mixed. The onsite and offsite review committees handle issues in an excellent manner. Management initiated several efforts to improve the quality of modifications and design basis documentation and verification. These included a self-initiated safety system functional inspection (SSFI) of the diesel generator system, an audit of the residual heat removal system, and a special audit of 10 CFR 50.59 safety evaluations. Management also became involved after allegations were received from local law enforcement agencies involving the use of drugs by several licensee employees. The licensee's investigation confirmed some of the allegations and resulted in the termination of four employees. The licensee accelerated the anticipated transient without scram (ATWS) modification installation issue and acted early to address concerns arising from the steam generator tube rupture event at North Anna. The licensee's submittals with regard to NRC Bulletin 88-02 were technically thorough and timely. Generally, submittals demonstrated a clear understanding of regulatory concerns and a conservative approach in technical problem resolution.

On the other hand, in some cases additional submittals were required before final resolution was achieved. For example, although the licensee's technical staff met with NRC staff before submitting the application to upgrade certain fuel features and increase the core power peaking factors, the application did not contain sufficient information to perform an independent analysis to support the proposed amendment. When apprised of the NRC's needs, the licensee responded in a prompt and thorough manner, dedicating sufficient staff and resources to support the application. In another case, the licensee's submittal to increase the enrichment of fuel permitted to be stored in the new fuel storage vault and the spent fuel pool was not complete. The effects of the increased enrichment on the spent fuel rod drop accident was not addressed, and despite problems at Point Beach

with degradation of Boraflex coupon samples, the question of Boraflex degradation and its potential effect on criticality considerations also was not addressed.

Management staffing remained constant during this assessment period and was adequate. The continuation of personnel in management positions promoted excellent intra-site communication and interfacing between managers on a day-to-day basis and reduced the number of joint management meetings needed to resolve issues. However, there were some instances where it appeared that communications between the corporate staff and the site staff, and amongst the corporate staff, did not always appear to be adequate. One instance involves the station batteries when the site staff informed the NRC that the schedule for replacement of the DO6 battery would be moved up from the fall 1989 outage to midsummer; during a discussion between NRC and corporate personnel, the corporate personnel were unaware of this. In another case, the licensee's formal response to the station blackout rule indicated that it was thinking about adding another diesel generator, but that it was not committing to it; a senior corporate person told the NRC that Point Beach had already purchased another diesel generator and was making plans to install it.

Several plant organizational changes were made late in the assessment period. These changes combined groups associated with maintenance and engineering and those associated with operations into two departments each under a single general superintendent. The purpose of this was to provide more focused attention and cooperation between related work groups and to reduce the interface needed for the resolution of specific issues. The effectiveness of these changes is yet to be evaluated.

The licensee's resolution of technical issues was mixed. As a result of the self-initiated evaluations identified earlier, the licensee implemented appropriate actions to address the findings in several cases. These included upgrading procedures for performing 10 CFR 50.59 evaluations and initiating a program to upgrade or regenerate documentation of the plant design basis. The licensee also initiated an excellent labeling program to better identify and describe plant components. On the other hand, the licensee does not always focus on and resolve issues pointed out to it. For example, early in the assessment period, the licensee identified, through the SSFI, that no formal battery sizing calculation or good load tabulation existed; at the end of the period these still did not exist. In another case, the resident inspector identified a potential problem with worn fuel lines on the emergency diesel generators, but the licensee was slow to respond to repair the lines. In still another case, the licensee was slow

to recognize the issues relating to fuel movement with containment doors open and only after much discussion with the NRC did it reluctantly agree to change its method of operation.

Overall licensee training is adequate. Although the licensee does not have a site-specific simulator, it did order one in this assessment period, but it is not scheduled for delivery and operation until 1991. However, the simulator will model the two unit control room and is the only one in Region III to do so.

Management's responses to NRC initiatives and concerns was mixed. Initiatives relating to temporary instructions, generic letters, bulletins, and information notices generally were pursued aggressively and responses were prompt and timely. Responses to concerns identified through inspections, however, were at times less than adequate as noted by concerns stated in the Plant Operations section. Senior site management appeared to be receptive to the concerns and committed to resolve them. However, the actual resolution did not always occur without additional and substantial prompting from the inspectors.

2. Performance Rating

The licensee's performance is rated Category 2 in this area. Because this is a new area, no rating is available for the previous assessment period.

3. Recommendations

None.

V. SUPPORTING DATA AND SUMMARIES

A. Licensee Activities

1. Unit 1

Point Beach Unit 1 began the assessment period operating at routine power levels up to 100%. On April 9, 1988, the unit was shutdown for its annual refueling and maintenance outage, after which Unit 1 operated routinely and ended the assessment period with no major reactor outages or significant load reductions.

Unit 1 experienced two engineered safety feature (ESF) actuations including a safety injection, and one reactor trip which occurred above 15% power as a result of equipment failure.

Significant outages and events that occurred during the assessment period are summarized below.

Significant Outages and Events

- a. On November 21, 1987, Unit 1 was shut down to repair a failed valve controller that was causing low pressure in the pressurizer.
- b. During April 8-May 8, 1988, Unit 1 was shutdown for its annual refueling and maintenance outage. Major activities included the five year inspection of main electrical generator, transformer repairs, minor modifications to steam generators (SGs), and SG eddy current testing
- c. On May 21, 1988, Unit 1 was taken off line for turbine overspeed testing.
- d. February 18, 1989, Unit 1 commenced end-of-core life operations.

2. Unit 2

Point Beach Unit 2 began the assessment period operating at reduced power levels as it prepared for its cycle 13 refueling and maintenance outage, which began October 13, 1987. The unit resumed operations on November 19, 1987, and operated at low power levels for fuel conditioning and secondary water chemistry cleaning. The unit operated routinely until it began its scheduled cycle 14 refueling outage on October 8, 1988. Unit 2 ended the assessment period with no major outages or significant load reductions.

Unit 2 experienced seven ESF actuations including two safety injections, and three reactor trips. One reactor trip occurred when operating above 15% power, one occurred below 15% power, and one occurred with no rod movement. Two trips were the result of equipment failures and one caused by personnel error.

Significant outages and events that occurred during the assessment period are summarized below.

Significant Outages and Events

- a. During October 3 through November 19, 1987, Unit 2 was shut down for its scheduled cycle 13 refueling and maintenance outage. Outage activities included repairs of safety-related instrumentation, motor inspection and seal replacement for the 'A' reactor coolant pump, modifications of the reactor coolant loop bypass manifolds, and plugging and sleeving of SG tubes.
- b. On November 18, 1987, Unit 2 shut down to perform post outage turbine torsional and overspeed testing.
- c. On December 19, 1987, Unit 2 was shut down to repair potential transformer and to balance the main turbine.
- d. During April 10-11, 1988, Unit 2 was taken off line to perform repairs/replacement of the main feed pump discharge valve.
- e. During October 7-November 22, 1988, Unit 2 was shut down for its annual refueling and maintenance outage. Activities included installation of ATWS system, system mitigations, eddy current testing for SG sleeving of SG, core reload, overhaul of high pressure turbine.
- f. During November 23-26, 1988, Unit 2 was shut down for overspeed trip testing of the turbine.

B. Inspection Activities

Thirty-four inspection reports are discussed in this report (October 1, 1987, through March 31, 1989) and are listed in Paragraph 1 of this Section, Inspection Data. Table 1 lists the violations per functional area and severity levels. Significant inspection activities are listed in Paragraph 2 of this section, Special Inspection Summary.

1. Inspection Data

- a. Unit 1
 Docket No: 50-266
 Inspection Reports No: 87020 through 87023, 88002 through 88024, 88026, 89002, 89003, and 89005 through 89008
- b. Unit 2
 Docket No: 50-301
 Inspection Reports No: 87020 through 87023, 88002 through 88023, 89002, 89003, and 89005 through 89008.

Table I

Number of Violations in Each Severity Level

<u>Functional Areas</u>	Unit 1			Unit 2			COMMON		
	<u>III</u>	<u>IV</u>	<u>V</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>III</u>	<u>IV</u>	<u>V</u>
A. Plant Operations	-	-	-	-	1	-	-	-	-
B. Radiological Controls	-	1	-	-	-	-	-	-	-
C. Maintenance/Surveillance	-	2	-	-	-	-	-	-	-
D. Emergency Preparedness	-	-	-	-	-	-	-	-	-
E. Security	-	-	-	-	-	-	-	2	1
F. Engr/Tech Support	-	-	-	-	-	-	-	1	-
G. Safety Assessment/ Quality Verification	-	-	-	-	-	-	-	-	-
 TOTALS	Unit 1			Unit 2			Common		
	<u>III</u>	<u>IV</u>	<u>V</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>III</u>	<u>IV</u>	<u>V</u>
	-	3	-	-	1	-	-	3	1

2. Special Inspection Summary

- a. During March 7-11, 1988, a team inspection was conducted to review the licensee's emergency preparedness programs, open items, Information Notice 87-58 (Inspection Report Nos. 266/88007, 301/88007).
- b. During September 12-16, 1988, an emergency preparedness exercise was conducted (Inspection Report Nos. 266/88021, 301/88019).
- c. During December 6-9, 1988, a special inspection of the licensee's procedures on electrical breakers was conducted (Inspection Report Nos. 266/88026, 301/88023).

- d. On February 22, 1989, a dry run emergency preparedness exercise was conducted.
- e. During March 15-16, 1989, a full emergency preparedness exercise was conducted (Inspection Report Nos. 266/89008, 301/89008).

C. Escalated Enforcement Actions

1. On December 18, 1987, the licensee paid the imposed civil penalty reissued October 13, 1987, in the amount of \$50,000. This action was based on a violation of NRC requirements concerning degraded vital barriers. (Enforcement Case No. EA-86-148, Enforcement Notification No. EN-87-019A).
2. A Severity Level III violation and proposed imposition of civil penalty, in the amount of \$25,000, was issued for Unit 2 on October 6, 1987. This action is based on an event in which both main steam isolation valves were rendered inoperable for approximately four hours with the reactor critical. Once the problem was identified, personnel did not promptly notify management and a 10 CFR 50.72 report was not reported in a timely manner (Enforcement Case No. EA-87-182, Enforcement Notification No. EN-87-093).

D. Confirmatory Action Letters

A confirmatory action letter (CAL-RIII-89-009) was issued on March 28, 1989. This letter addressed the failure rate of the personnel for requalification of operator licenses, the licensee's unsatisfactory requalification program, and the actions the licensee is to take to correct the problems in this area.

E. Licensee Amendments Issued

<u>Amendments Number</u>	<u>Description</u>	<u>Date</u>
109/112	Control room emergency filtration	12/03/87
110/113	Record keeping/administrative Technical Specification (TS) changes	01/05/88
111/114	Removal of TS 15.5.3.A.8 limiting the quantity of fissionable material used in neutron flux detectors	02/03/88

<u>Amendments Number</u>	<u>Description</u>	<u>Date</u>
112/115	Reduces number of containment hydrogen monitors	03/02/88
113/116	Revises TS 15.4.1-1 to clarify requirements for testing SG pressure channels during refueling	04/14/88
114/117	Administrative TS changes	04/18/88
115/118	Miscellaneous amendments and search requirements	06/09/88
116/119	Revises testing frequency in TS Table 15.4.1-1	02/08/89

F. Review of Licensee Events Reports Submitted by the Licensee

Unit 1 LER Nos.: 87005, 88001 through 88010

Unit 2 LER Nos.: 87004 through 87006, 88001 through 88003, and 89001

Collectively, 18 LER's were issued in accordance to NUREG-1022 guidelines during this assessment, and are addressed in this SALP 7 report.

There were 11 LERs issued for Unit 1, and seven LERs issued for Unit 2. Table 2 shows a cause code comparison of each the units for Point Beach Nuclear Power Station.

<u>Cause Areas</u>	<u>Unit 1</u>	<u>Unit 2</u>
Personnel Errors	1	2
Design Deficiencies	3	0
External	0	0
Procedure Inadequacies	4	0
Equipment/Component	3	5
Other/Unknown	0	0
Totals	11	7

Table 3 shows a cause code comparison of SALP 6 and SALP 7.

Table 3

Cause Areas	(18-MO)	(18-MO)
	SALP 6	SALP 7
Personnel Errors	5 (25.0%)	3 (16.7%)
Design Problems	4 (2.0%)	3 (16.7%)
External Causes	0 (0.0%)	0 (0.0%)
Procedure Inadequacies	1 (5.0%)	4 (22.2%)
Equipment/Component	5 (25.0%)	8 (44.4%)
Other/Unknown	5 (25.0%)	0 (0.0%)
TOTALS	20	18
FREQUENCY (LERs/MO)	1.1	1.0

NOTE: The above LER information was derived from a review of LER's performed by NRC Resident staff and may not completely coincide with the licensee's cause code assignments.