

July 22, 1993

7/17/93

MEMORANDUM FOR: James L. Milhoan, Regional Administrator
Region IV

FROM: Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

SUBJECT: SALP FOR SOUTH TEXAS PROJECT

I have received your memorandum of June 30, 1993, which describes the proposed SALP schedule for the South Texas Project as a result of the extended shutdown of both units. You propose that the normal SALP process be suspended until the startup of one unit at the site. A SALP would then be conducted on the site six to nine months after the actual startup of the unit.

The SALP Handbook B.6 Part I (May 1993 Draft) distinguishes between adjustments to SALP schedules for plants in extended shutdown and suspension of the SALP process for plants designated as Category III by senior management. We take your proposal to be a recommendation to adjust the current SALP end date until six to nine months following a unit startup. I believe that this is an appropriate action and agree with the proposed schedule.

Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

- cc: S. Collins, Region IV
- J. Callan, Region IV
- A. Beach, Region IV
- W. Johnson, Region IV
- M. Satorius, Region IV
- P. Harrell, Region IV
- D. Loveless, SRI

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ENCLOSURE 2

SALP INPUT

FACILITY NAME: South Texas Project, Units 1 and 2

1. SUMMARY OF REVIEW:

By a letter dated May 27, 1993 along with a safety evaluation, Houston Lighting & Power Company, the licensee for South Texas Project, Units 1 and 2 requested NRC's approval to implement the proposed Technical Specification (TS) modification. The proposed amendment will implement revised UFSAR Chapter 15 accident analyses, increasing peaking factor limits, and include results of the Revised Thermal Design procedure analysis on operational setpoints.

HICB review was limited to evaluation of methodology used by the licensee to calculate instrument loop uncertainties and operational setpoints. HICB finds methodology used for calculation of instrument loop uncertainties and trip settings acceptable.

2. NARRATIVE DISCUSSION OF LICENSEE PERFORMANCE:

The licensee's submittal for the proposed changes to the TS of South Texas Project Units 1 and 2, was comprehensive.

SALP INPUT
SAFETY EVALUATION FOR THE USE
OF
SORBENT CANISTERS FOR PROTECTION AGAINST RADIOIODINE
AT
THE SOUTH TEXAS PROJECT

REVIEW AREA

The Houston Lighting and Power Company (HL&P, the licensee) requested authorization to use a protection factor of 50 in association with the use of sorbent canisters for protection against airborne radioiodine.

The licensee's original request was contained in its December 19, 1991, letter. Several telephonic discussions were held with the licensee before it supplemented its original submittal by letter dated July 1, 1993. Additional clarifying information was submitted by the licensee in its November 3, 1993 letter. Although some of the requests for additional information were the result of the age, and, therefore the questionable validity, of some of the information provide by the licensee's supplier, MSA, it is apparent that the licensee was not sufficiently circumspect in its preparation of its proposal. Previous, similar submittals by other licensees were available to the licensee and could have been more effectively used by the licensee as guidance in preparing its original proposal.

Principal Contributor:

JBell

B/56

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

FACILITY NAME

South Texas Units 1 and 2

SUMMARY OF REVIEW

On May 27, 1993, the Houston Lighting and Power Company (HL&P) submitted documentation describing a proposed fuel upgrade from Westinghouse (W) STD XL fuel to W Vantage 5H fuel for its South Texas plants to be implemented in Unit 1 Cycle 6 and Unit 2 Cycle 4. The submittal was extensive containing the fuel upgrade proposal, supporting analyses, and proposed FSAR, Tech Spec and COLR changes. The supporting analyses involved methodologies and assumptions which had not been previously applied to the South Texas plants. An expedited review was necessary because its commencement was delayed due to scheduling priorities.

NARRATIVE DISCUSSION OF LICENSEE PERFORMANCE - SAFETY
ASSESSMENT/QUALITY
VERIFICATION

The licensee's submittal was extensive, covering 3 volumes of information. The licensee was very helpful in expediting the review during two telecons by locating and clarifying information in the submittal. At times however, the licensee's verbal information didn't appear to be correct. A telephone conversation with Westinghouse was necessary to explain atypical results in the LOCA analyses - the nature of the material was beyond a utility's normal knowledge.

AUTHOR: Frank Orr

DATE: 2/10/94

B/57

April 15, 1994

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MEMORANDUM FOR: Suzanne C. Black, Director
 Project Directorate IV-2
 Division of Reactor Projects, III/IV/V
 Office of Nuclear Reactor Regulation

FROM: Eugene V. Imbro, Chief
 Special Inspection Branch
 Division of Reactor Inspection
 and Licensee Performance
 Office of Nuclear Reactor Regulation

SUBJECT: SALP INPUT FOR SOUTH TEXAS PROJECT ORAT

Enclosed is a SALP input for the South Texas Project (STP) which is based upon the Operational Readiness Assessment Team (ORAT) inspection conducted by this branch from December 6, 1993 through January 21, 1994. If you have any questions concerning this input, please contact the inspection team leader, Jeffrey Jacobson, at (301) 504-2977.

ORIGINAL SIGNED BY

Eugene V. Imbro, Chief
 Special Inspection Branch
 Division of Reactor Inspection
 and Licensee Performance
 Office of Nuclear Reactor Regulation

Enclosure: As stated

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Facility Name: South Texas Project, Units 1 and 2

Summary of Inspection Activities

The NRC Operational Readiness Assessment Team (ORAT) inspection, led by the Special Inspection Branch of the Office of Nuclear Reactor Regulation (NRR), was conducted from December 6-10, 1993, and January 12-21, 1994. The inspection team consisted of staff members from NRR, Region II, and Region III, as well as two consultants. The objective of the inspection was to provide the NRC an independent, broad-scope assessment of the programs, personnel, and management controls in place to support restart of South Texas Project (STP), Unit 1. The ORAT evaluated the areas of plant operations, surveillance, maintenance, modifications, and corrective action programs. The team also reviewed the STP Operational Readiness Plan and the STP Business Plan.

Narrative Discussion of Licensee Performance

The team identified several deficiencies due to ineffective program implementation and procedural weaknesses. Of greatest significance, was the team's finding concerning weaknesses in configuration management which led to numerous unexpected equipment actuations and equipment clearance order inadequacies. These weaknesses, along with several equipment failures, presented unnecessary challenges to control room operators.

During the initial phase of the inspection, senior management was not aware of implementation weaknesses with the postmaintenance test program, even though this issue had been highlighted by internal nuclear assurance group assessments. Due to a lack of management attention, the implementation weaknesses went un-corrected until brought to management's attention by the ORAT.

On the positive side, the team found that HL&P had effectively implemented a comprehensive Operational Readiness Plan for return to power and had developed an ambitious Business Plan which outlined long-range strategies and activities. Work backlogs, both paper, and hardware oriented, had been significantly reduced during the extended outage.

The STP corrective action program was found to be fair, with several future enhancements planned. However, root cause analyses and corrective action evaluations need to be improved. Engineering support to the plant was good, as was the observed physical plant condition. Staff morale and attitude were positive.

Functional Area: Plant Operations

The team observed control room activities throughout the inspection, as well as during a sustained 48-hour period beginning on the evening of January 13, 1994. The team noted that control room access was limited, noise levels were reasonable, and that the newly established operations work control group was effective in limiting the administrative burden on the control room staff. A professional attitude was maintained by operators while carrying out their

assigned duties. Operator awareness to plant status, and attention and response to plant annunciators, was considered good. Operator logtaking was detailed and properly documented plant activities. The professionalism and high morale of the operations staff were identified as strengths by the team.

During the inspection, several events regarding inadvertent equipment actuation or failure of equipment to actuate during testing were noted. In response to the team's concerns in this area the licensee developed and committed to implement a configuration management action plan. The team noted numerous delays of activities because procedures could not be performed as written by operations. For example, plant heatup was repeatedly delayed awaiting the requisite procedure changes to be processed.

During the performance of centrifugal charging pump operability testing, a technical specification violation occurred, due to HL&P's failure to ensure a proper valve line-up prior to testing. Although the valve position of a charging pump discharge valve was visually verified as being closed, it had actually opened prior to the testing. It's true position was not understood due to its power having been previously removed. It was later learned that this event had happened before, but an adequate root cause analysis had not been performed.

The team also identified a large number of out-dated technical specification interpretations which the licensee committed to eliminate.

Functional Area: Maintenance

On the basis of the limited review conducted by the team, and with the exception of the deficiencies noted below with the post maintenance testing (PMT) program, ongoing maintenance activities were found to be properly planned, controlled, and performed in a manner that exhibited adequate technical knowledge of plant systems, good procedural adherence, and an adequate knowledge of station processes and procedures. First-line supervisors appeared to be aware of ongoing work and were involved in close supervision.

There were indications that the licensee was trying to improve the craft's ability to handle possible problem areas that could arise during routine maintenance activities because of inattention to detail. An example of the licensee's efforts in this area was noted in the I&C shop where a simulator training program for increasing the crafts awareness of "attention-to-detail" problems had been developed.

At the end of the first phase of the inspection, the team concluded that, although the licensee had made significant progress in developing an adequate post-maintenance test (PMT) program, implementation of this program appeared to be weak and inconsistent. The maintenance crafts were not adequately trained and appeared uncomfortable with the new PMT program. The team identified work packages with inadequate detail to define PMT acceptance criteria and initial test conditions. The team also identified several packages in which PMT steps were marked N/A with no indication of who determined they were not applicable or when this determination was made.

After bringing these deficiencies to managements attention, the team found PMT implementation to be much improved during the second phase of the ORAT.

Functional Area: Engineering

The team evaluated engineering modification packages, engineering dispositions to corrective action documents (Station Problem Reports), and justifications for continued operations. In general, modifications were properly prepared, implemented, and controlled in accordance with approved licensee procedures. Appropriate post-modification testing was specified as necessary to verify the functionality of the design changes. The engineers were knowledgeable about the relevant procedures and the specific details of the packages.

The justification for continued operation documents reviewed contained supportable engineering analyses and were based on sound engineering judgement. The team did however, identify weaknesses with the dispositions of several station problem reports. In some cases, the root cause of the problem was never addressed, or contributing factors were not evaluated. Also, supporting documentation for the evaluations was often weak. Industry information evaluations were usually supportable, but again, documentation was often weak.

MAR 20 1989

In Reply To:
Docket: 50-498/88-88
50-499/88-88

Houston Lighting & Power Company
ATTN: J. H. Campbell, Group Vice
President, Nuclear
P.O. Box 1700
Houston, Texas 77001

Gentlemen:

This letter forwards the report of the Systematic Assessment of Licensee Performance (SALP) for South Texas Project, Units 1 and 2. The SALP Board met on February 10 and 23, 1989, to evaluate South Texas Project's performance for the period January 1 through December 31, 1988. The performance analyses and resulting evaluations are documented in the enclosed SALP Board Report.

In accordance with NRC policy, I have reviewed the SALP Board Assessment and concur with their ratings. Because this assessment was conducted in accordance with the revised NRC Manual Chapter 0516 with restructured functional areas, direct comparison of some of the performance ratings in this report with those of the past SALP report is not appropriate. While some apparent weaknesses were identified, it is my view that the overall performance at South Texas Project has been satisfactory with improvement in specified areas. The following specific areas merit highlighting:

1. The security area showed marked improvement since the previous SALP period. Licensee management demonstrated a strong commitment to the implementation of an excellent security program. Improvements were observed in the areas of security training and qualification, implementing procedures, and the identification and resolution of technical issues and problems. The area improved from a Category 3 to a Category 2.
2. Performance in the area of Operations showed improvement since the last SALP period. Management attention was evident and the licensee showed its ability to learn from experience and conduct safe operations. This area is a strong Category 2.
3. Performance in the area of Safety Assessment/Quality Verification clearly demonstrated the licensee's commitment to safety. The completeness of technical submittals, the commitment to safe operation, and the effectiveness of corrective action programs all reflected a strong management involvement. The rating in this area is a Category 1.

RIV:	SRI	SRI	C:DRP/D	NRR	D:DRSS
*DHunnicut	*JBess	*JTapia	*EHoller	*JCalvo	*RLBangart
/ /89	/ /89	/ /89	/ /89	/ /89	/ /89

*D:DRS	*D:DRP	RA ^{ADM}
JMilhoan	LJCallan	RDMartin
/ /89	/ /89	/ /89

*Previously concurred

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4. The performance in the functional area of Radiological Controls is a Category 2. Performance in this area was good, but a review of performance during extended reactor operations is needed to arrive at a comprehensive evaluation. It was noted that increased management attention to preoperational testing of the Unit 2 radwaste system should be provided to assure timely completion.
5. The performance in the area of Emergency Preparedness indicated that additional management attention is needed regarding the operational readiness of Unit 2 facilities. The results from the annual exercise indicate that the Emergency Plan and procedures can be effectively implemented. A rating of Category 2 is assigned to this area.
6. The functional area of Maintenance/Surveillance indicated effective maintenance programs in place, but a need for better implementation. The surveillance program showed weaknesses such as missed surveillances, late surveillances, and incorrect procedures early in the assessment period. SALP rating in this area is a Category 2.
7. The performance in the area of Engineering/Technical Support indicated some weaknesses in the review of procedures associated with operation and maintenance of the units. Attention should be focused on procedure review and revision, especially regarding equipment labeling. Problems regarding the adequacy of the training simulator were also noted. The rating in this area is Category 2.
8. In the area of Construction Completion and Testing, no rating is assigned because construction activity is complete at STP. The construction and preoperational testing of Unit 2 was assessed as reflecting good management involvement and the incorporation of lessons learned from Unit 1.

A management meeting will be scheduled with you and your staff to review the results of this SALP report. The time and date of this meeting will be promulgated separately. Within 30 days of this management meeting, you may comment, in writing, to this office regarding any SALP rating.

Comments which you submit are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

A copy of your written comments will be included in the final distribution of the SALP report.

Sincerely,

Original signed by
Robert D. Martin

Robert D. Martin
Regional Administrator

Enclosure:

SALP Board Report 50-498/88-88
50-499/88-88

cc:

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San Antonio, Texas 78296

Houston Lighting & Power Company
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Bethesda, Maryland 20814

Texas Radiation Control Program Director

bcc to DMB (IE40)

bcc distrib. by RIV:

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G. Dick, NRR Project Manager (MS: 13-D-18)
Project Engineer, DRP/D
Chairman L. W. Zech (MS: 17-D-1)
Comm. T. M. Roberts (MS: 18-H-1)
Comm. K. M. Carr (MS: 16-H-3)
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RRI
DRS
RPB-DRSS
RIV File
RSTS Operator

R. D. Martin
Records Center, INPO
RRIs at all sites
J. T. Gilliland, PAO
G. F. Sanborn, EO
DRP (2)
R. L. Bangart, DRSS

SALP BOARD REPORT

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

50-498/88-88

50-499/88-88

Houston Lighting & Power Company

South Texas Project

Units 1 and 2

January 1, 1988, through December 31, 1988

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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 based upon this information. The program is supplemental to normal regulatory processes used to ensure compliance to NRC rules and regulations. It 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 operation.

An NRC SALP Board, composed of the staff members listed below, met on February, 10 and 23, 1989, to review the observations and data on performance, and to assess licensee performance in accordance with 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 South Texas Project (STP) for the period January 1 through December 31, 1988.

The SALP Board for STP was composed of:

- L. J. Callan, Director, Division of Reactor Projects, Region IV
- R. E. Hall, Deputy Director, Division of Radiological Safety and Safeguards, Region IV
- J. P. Jaudon, Deputy Director, Division of Reactor Safety, Region IV
- J. A. Calvo, Director, Project Directorate IV, NRR
- E. J. Holler, Chief, Project Section D, Reactor Project Section, Region IV
- G. F. Dick, Senior Project Manager, Project Directorate IV, NRR
- J. E. Bess, Senior Resident Inspector, Region IV
- J. L. Tapia, Senior Resident Inspector, Region IV

The following personnel also participated in the SALP Board meeting:

- *J. L. Milhoan, Director, Division of Reactor Safety, Region IV
- B. Murray, Chief, Reactor Programs Branch, Region IV
- **D. M. Hunnicutt, Senior Project Engineer, Region IV
- R. J. Everett, Chief, Security and Emergency Preparedness Section, Region IV

N. M. Terc, Emergency Preparedness Specialist, Region IV

D. L. Garrison, Resident Inspector, Region IV

R. J. Evans, Resident Inspector, Region IV

*Acted for J. P. Jaudon on February 23, 1989

**Acted for E. Holler on February 23, 1989

A. Licensee Activities

1. Major Outages

- o Unit 1 was shut down from September 23, 1988, until October 11, 1988, for bottom mounted instrumentation (BMI) thimble tube inspection and installation of an isolation valve on each BMI tube.
- o Unit 1 was shut down from November 30, 1988, until December 8, 1988, for installation of vortex suppressors in the three emergency containment sumps.

2. Licensee Amendments

During the assessment period, there were 2 Operating License Amendments for Unit 1 and issuance of a fuel load/low thermal power license for Unit 2.

- o The Unit 1 low thermal power license (NPF-71) was superseded by a full thermal power operating license (NPF-76) on March 22, 1988.
- o The Unit 2 fuel load/low thermal power license (NPF-78) was issued on December 16, 1988.
- o The combined Unit 1 - Unit 2 Technical Specifications (TS) (Amendment 4) were issued for Unit 1 on December 29, 1988.

3. Major Modifications

- o Unit 1 BMI thimble tubes were modified to include isolation valves during a scheduled outage from September 23, 1988, through October 11, 1988.

B. Direct Inspection and Review Activities

NRC inspection activities during this SALP evaluation period included 87 inspections. The total direct inspection hours expended on inspection activities of Units 1 and 2 were approximately 8,750 during this SALP evaluation period with approximately 4,402 direct inspection hours expended on Unit 1 and approximately 4,348 direct

inspection hours expended on Unit 2. The inspections included two Operations Readiness Review Inspections (ORRI) one at each Unit, a Unit 1 Special Performance Assessment Inspection (SPAI), and a Unit 2 Appendix R inspection. Inspections were conducted by the resident inspectors, region-based inspectors, resident inspectors from other operating sites within Region IV, NRR inspectors, and contract inspectors.

II. SUMMARY OF RESULTS

Overview

Strong management involvement, good operating experience with Unit 1, and the ability to apply lessons learned characterize the licensee's performance at STP, Units 1 and 2. Marked improvement since the last SALP period was noted in security. Management's demonstrated commitment to the implementation of an excellent security program has yielded good results and markedly improved the licensee's performance in this area. Similar improvement was noted in plant operations, particularly regarding the licensee's ability to apply the lessons learned from its operating experience. The results have been an excellent startup effort with Unit 1 and an exceptionally good fuel load completion with Unit 2. This management commitment to safety and effectiveness of corrective action programs is very much evident in the safety assessment and quality verification functional area.

Performance in the area of radiological controls was also of high quality. However, a review of performance during extended operations is needed to arrive at a comprehensive evaluation in this area.

Good performance continued in the areas of emergency preparedness, maintenance and surveillance, and engineering and technical support. Some weaknesses in review of procedures associated with operation and maintenance of the plant were noted as were weaknesses associated with the training simulator. Performance in maintenance and surveillance appears to have leveled off. Effective maintenance programs are in place, but attention to implementation is still indicated. Surveillance programs still showed weaknesses regarding late and missed surveillances throughout the period, and incorrect procedures early in the assessment period.

A special functional area of construction completion and testing was assessed to capture the construction activities for Unit 2 that were not addressed in the other functional areas. Licensee performance was assessed as very good and reflective of the management attention evident in all the functional areas at STP. A rating was not assessed because construction is complete at STP.

The licensee's performance is summarized in the table below, along with the performance categories from the previous SALP evaluation period.

Functional Area	Previous Performance Category (01/01/87 to 12/31/87)	Present Performance Category (01/01/88 to 12/31/88)
A. Plant Operations	2	2
B. Radiological Controls	2	2
C. Maintenance/Surveillance	N/A	2
D. Emergency Preparedness	2	2
E. Security	3	2
F. Engineering/Technical Support	N/A	2
G. Safety Assessment/ Quality verification	N/A	1
H. Construction Completion and Testing	N/A	Not Rated
I. Preoperational Testing	2	N/A*
J. Startup Testing	2	N/A*
K. Maintenance	2	N/A*
L. Surveillance	2	N/A*
M. Fire Protection	2	N/A*
N. Quality Programs and Administrative Controls Affecting Quality		
(1) Construction	1	N/A*
(2) Operations	2	N/A*
O. Training and Qualifications Effectiveness	2	N/A*
P. Containments, Safety-Related Structures, and Major Steel Supports	1	N/A*

Q. Piping Systems and Supports	2	N/A*
R. Safety-Related Components - Mechanical	2	N/A*
S. Auxiliary Systems	1	N/A*
T. Electrical Equipment and Cables	2	N/A*
U. Instrumentation	1	N/A*
V. Licensing Activities	2	N/A*

*NRC Manual Chapter 0516 was revised on June 6, 1988. This evaluation was performed in accordance with the revised manual chapter. The major change involved restructuring of the functional areas.

III. CRITERIA

Licensee performance was assessed in eight and rated in seven 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, as applicable, to assess each functional area:

- A. Assurance of quality including management involvement and control;
- B. Approach to resolution of technical issues from a safety standpoint;
- C. Responsiveness to NRC initiatives;
- D. Enforcement history;
- E. Operational events (including response to, analysis of, reporting of, and corrective actions for);
- F. Staffing (including management); and
- G. Effectiveness of training and qualification program.

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

Based upon 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 is 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.

IV. PERFORMANCE ANALYSIS

A. Plant Operations

1. Analysis

The assessment of this area consists chiefly of the control and execution of the licensee's operations staff and the activities of licensee management related to plant operations activities at Units 1 and 2. This functional area includes activities such as plant startup, power operation, plant shutdown, system lineups, logging plant conditions, responding to off-normal conditions, manipulating reactor and auxiliary controls, housekeeping, and control room professionalism.

This functional area was inspected on a continuing basis by the NRC resident inspectors, and by two ORRI Teams, a SPAI Team, and periodically by other Region IV inspectors.

In general, the licensee's performance during startup and commercial operation on Unit 1 was very good. The licensee effectively used the lessons learned during the startup of Unit 1 to improve the preoperational testing for Unit 2. The skill with which the licensee conducted a safe and efficient fuel load of Unit 2 demonstrated the control of activities gained by the licensee from its experience with Unit 1. The frequent involvement of corporate management was clearly evident in the day-to-day decisionmaking regarding safe operation of both Unit 1 and Unit 2.

During the last SALP period, several programmatic weaknesses were identified which suggested the need for additional management involvement in plant operations. At the beginning of this assessment period, operating problems regarding proper plant mode changes and the interpretation of Technical Specifications were experienced. The licensee directed appropriate management attention to these problems and demonstrated its capacity to learn from its experience. By the time of the SPAI Team inspection at the 50 percent power plateau for Unit 1, the licensee's operation of Unit 1 was assessed as [redacted] with strong programs in place to ensure safe operation of [redacted] plant.

[redacted] end of the assessment period, an event occurred which [redacted] the maturity the licensee had gained in operations. During a Unit 2 design review, the licensee discovered that vortex suppressors had not been installed in the emergency containment sumps of either Unit 1 or Unit 2. Unit 1 was operating at 100 percent power at the time of the discovery. After the situation was identified to appropriate licensee management, the licensee promptly evaluated the safety significance and took appropriate conservative action which included shutting down Unit 1 until corrective actions were completed.

The licensee's work force was very stable with a negligible turnover rate. The operations staff consisted of five operations crews which were fully manned. Prior to the licensing of Unit 2, each operations crew consisted of up to four senior reactor operators (SRO). With the licensing of Unit 2 in late 1988, some of the experienced crew members that were involved with the startup of Unit 1 were assigned to Unit 2. This provided Unit 2 with an experience base gained from the successful startup of Unit 1 and negated the need for contractor supplied licensed shift advisors for Unit 1 or Unit 2. Even with this reassignment of personnel, resources for Unit 1 were maintained at 5 operating crews. Each shift consisted of two SROs and three licensed reactor operators (RO).

The Unit 1 control room operators generally displayed a high degree of professionalism during all phases of normal plant operations. This professionalism was also displayed when the operators were required to respond to complex system challenges. During the period from Unit 1 initial criticality to commercial operation, the control room operators were observed by the NRC inspectors to improve their proficiency and became more comfortable with plant operations. Their familiarity and compliance with TS also improved. The effectiveness of operations personnel training and qualifications was demonstrated by the efficient response to several operations

events including the prompt actions of operations personnel in handling the plant conditions following the catastrophic failure of a steam driven turbine main feedwater pump.

Four automatic reactor trips occurred during this SALP period. Two of the four occurred after issuance of the full power license. Two of the trips were because of hardware failures and the other two trips were because of maintenance activities. Appropriate responses by licensee personnel led to the plant being safely shut down subsequent to each of these four trips.

There were two enforcement conferences regarding Unit 1 operations during the SALP period. The first one addressed TS interpretations, including Mode changes that occurred early in the assessment period. The second dealt with the falsification of logs by fire watches. No escalated enforcement actions resulted from the conferences.

The LERs submitted during the SALP period adequately described the major aspects of each event, including component or system failure that contributed to the event, and the significant corrective actions, taken or planned to prevent recurrence. The LERs were thorough, detailed, well written, and easy to understand. The narrative sections typically included specific details of the event; the root cause of the event was identified clearly in most cases. The LER information was organized, with separate headings and specific information in each section that led to a clear understanding of the event information. Previous similar occurrences were properly referenced in the LERs.

The licensee's successful conduct of the Unit 2 fuel load was a further demonstration of the licensee's ability to use feedback from its activities and improve work activities. The fuel loading operations were performed in a safe, effective manner and were in conformance with the license, administrative, and procedural requirements. Operating staff performance was professional at all times and shift turnovers were performed in a thorough and orderly manner. Initial fuel loading was the first operation where Unit 2 crews performed systems operations under licensed conditions.

The licensee made steady, continuous progress in this functional area. The operations staff exhibited the high level of professionalism which was required to safely operate Unit 1 and complete preoperational testing and fuel loading on Unit 2. The licensed operators demonstrated a good understanding of plant systems and operations.

2. Performance Rating

The licensee is assigned a performance category rating of 2 in this area.

3. Recommendations

a. NRC Actions

NRC inspection effort in this area should be consistent with the Core Inspection Program. In addition, selected Regional Initiative Program inspections should be conducted during the next SALP period (January 1, 1989, through January 31, 1990) in the areas of preparation for refueling and refueling activities.

b. Licensee Actions

The licensee should continue to stress attention to details throughout the upcoming assessment period. The consequences for a given action must be understood fully prior to performing the activity. The licensee should continue to stress adherence to its in-place control programs. Management attention is particularly important during initial criticality, low power testing, and the power ascension program for Unit 2 and during the scheduled initial refueling of Unit 1 (presently scheduled for September 1989) to assure that required systems and personnel safety are maintained at the current high level.

B. Radiological Controls

1. Analysis

The assessment of this functional area for Units 1 and 2 consists of activities directly related to radiological controls including occupational radiation safety (e.g., occupational radiation protection, radioactive materials and contamination controls, radiation field control, radiological surveys and monitoring, and as low as is reasonably achievable programs), radioactive waste management (i.e., processing and onsite storage of gaseous, liquid, and solid waste), radiological effluent control and monitoring (including gaseous and liquid effluents, offsite dose calculations, radiological environmental monitoring, and confirmatory measurements), and transportation of radioactive materials (e.g., procurement of packages, preparation for shipment, selection and control of shippers, receipt/acceptance of shipments, periodic maintenance of packagings, and point-of-origin safeguard activities).

The occupational radiation protection program was inspected twice during the assessment period by region-based radiation specialist inspectors in addition to the resident inspector's routine inspections. One violation was identified during the assessment period relating to the occupational radiation protection program. The licensee maintained an adequate number of well qualified radiation protection personnel. The turnover rate was low within the radiation protection staff. Job positions have been established and responsibilities were well defined. Vacant positions are usually filled within a reasonable time. The licensee's training program appeared to be adequate and instructors were technically qualified. Management involvement and control of quality in the occupational radiation protection area were evident by performance of comprehensive audits and the establishment of program priorities. Decisionmaking was usually at a level that ensured adequate management review.

The radioactive waste management area was inspected once during the assessment period. No violations were identified. Two operational events were reviewed during this assessment period. The licensee has been responsive to NRC initiatives in this area. Five of the seven open items that had been previously identified were closed. Two items remained open concerning additional calibration of gaseous and liquid process radioactivity monitors and verification of representative sampling for airborne effluent discharge pathways. The liquid and gaseous effluent release permit programs have been implemented to assure planned radioactive effluent releases receive management review prior to being released. No significant problems were identified in the areas of effluent releases, effluent monitoring and monitoring instrumentation, effluent release reports, audits, and water chemistry. All preoperational testing had not been completed for the Unit 2 liquid and gaseous radwaste systems.

The licensee's radiochemistry program was inspected three times during the assessment period. No violations were identified. One inspection included radiochemistry and water chemistry confirmatory measurements of actual plant liquid and gaseous samples and prepared certified standards using the NRC, Region IV, mobile laboratory. The licensee's radiological confirmatory measurement results for Unit 1 indicated 98 percent agreement, and for Unit 2 showed 95 percent agreement with the NRC analysis results. The licensee's program was found to be conducted in accordance with approved station procedures and Technical Specification requirements. The licensee's performance for water chemistry and radiochemistry confirmatory measurements were above industry averages.

The licensee's transportation program was inspected once during this assessment period. The licensee made one radioactive waste shipment in late December 1988. The licensee has the necessary procedures and an NRC approved quality assurance program to ensure the implementation of a proper transportation program. The licensee maintains an adequate training and qualification program in this area.

The radiological environmental monitoring program was inspected once during the assessment period. This program was well documented and staffed. The licensee's program was found to be conducted in accordance with management approved station procedures and Technical Specification requirements. The licensee had approved procedures for the collection, processing, and analysis of environmental samples. Annual reports had been submitted on time and in accordance with Technical Specification requirements. The land use census had been conducted as required during the assessment period. The licensee's training and qualification program associated with radiological environmental monitoring activities makes a positive contribution, commensurate with procedures and staffing, to the understanding of work and adherence to procedures.

No problems were identified in the radiological controls area regarding resolution of technical issues and responsiveness to NRC initiatives.

2. Performance Rating

This licensee is considered to be in Performance Category 2 in this functional area. The licensee's performance to date appears to be good in the radiological controls area. However, additional review of the licensee's performance during extended reactor operations such as a refueling or major maintenance outage is needed to arrive at a more comprehensive evaluation.

3. Recommendations

a. NRC Actions

The NRC inspection effort in this area should be consistent with the routine inspection program.

b. Licensee Actions

Provide increased management attention to preoperational testing of the Unit 2 radwaste systems to assure timely completion.

C. Maintenance/Surveillance

1. Analysis

This functional area includes the licensee's activities associated either with surveillance (diagnostic), predictive, preventive or corrective maintenance of plant structures, systems and components; procurement, control, and storage of components, including qualification controls, and installation of plant modification controls; and maintenance of the plant physical condition. It includes conduct of all surveillance (diagnostic) testing activities as well as inservice testing and inspection activities. Examples of activities included are instrument calibrations; equipment operability test; postmaintenance, postmodification, and postoutage testing; containment leak rate tests; water chemistry controls; special tests; inservice inspection (ISI) and performance tests of pumps and valves; and other inservice inspection activities.

This area was inspected on a routine basis by the NRC resident inspectors, and periodically by region-based inspectors. In addition, an ORRI was performed during the period of January 4-8, 1988, by NRC inspectors to assess the licensee's operational performance on Unit 1. An SPAI was performed by a team of NRC Region IV and NRC Headquarters personnel during the period June 27 through July 1, 1988, to evaluate the licensee's readiness to operate Unit 1 at greater than 50 percent of full power.

The licensee had implemented maintenance and surveillance programs which are common to both units. The maintenance program was well organized and implemented by qualified personnel. A metrology laboratory supported maintenance activities including tool calibration and tool control, and was equipped with the latest available testing equipment. The surveillance program was considered functional but was not as well organized as the maintenance program.

Licensee management involvement in assuring quality in the surveillance area increased during the assessment period. Surveillance activities and the corrective action requirements were generally well defined and implemented with interdepartmental teamwork. The licensee balanced the resources available, achieved good quality workmanship and use of personnel, and improved equipment availability.

Personnel performance of maintenance and surveillance activities also showed improvement regarding timeliness and accuracy in completing these tasks. The licensee complied generally with procedural and TS requirements. The ORRI identified examples of maintenance and surveillance activities and procedures that were

not adequate to direct or complete a specific activity. Some of these activities/procedure problem areas resulted in engineered safety feature (ESF) actuations. For example, I&C technicians used procedures which contained erroneous data. The frequency of ESF actuations decreased during the assessment period. Errors and/or omissions were incorporated into the procedures during the revision process.

With regard to maintenance activity, the licensee was assessed in the last SALP period as having the procedures for a strong maintenance program in place, but as having some problems in implementation. This assessment remained appropriate for this SALP period as well. There were, however, some improvements in implementation and there continued to be good development of strong maintenance programs. Management commitment was demonstrated by increased emphasis and continued implementation of the maintenance program. Improvement programs included the development of generic maintenance job plans which better defined the frequency at which equipment should be serviced. The licensee spent significant resources in its effort to identify and repair steam and water leaks in primary systems inside containment and secondary systems outside containment. During routine inspections and surveillances, the resident NRC inspectors observed a decrease in the number of systems in which leakage had previously been identified. Also, operation of Unit 1 in TS Limiting Conditions for Operation (LCO) action statements because of equipment operability problems, decreased in frequency following the early operating history after initial criticality.

Some weaknesses in the implementation of maintenance programs continued during the assessment period. Maintenance personnel did not always keep operating personnel adequately informed regarding maintenance activities. Maintenance work packages, in some cases, failed to account for TS requirements or provide for proper control of lifted leads and/or temporary jumpers during electrical maintenance activities. The licensee failed to generate required maintenance procedures for a number of Unit 2 systems when those systems were turned over from the constructor.

With regard to surveillance activity, the licensee ended the last SALP with a trend that showed a poor identification of TS requirements and their implementation into surveillance procedures. This trend continued into the beginning of this SALP period. LERs described errors such as: missed surveillances, surveillances performed late, inadequate posttest reviews, and incorrect calculations of valve stroke times. Several violations also were cited in this functional area. The major factors which contributed to the violations and reportable events were personnel errors or scheduling oversight. A

reduction in the number of missed surveillance events during the later part of the assessment period indicated an improvement in control of the surveillance testing program.

NRC resident inspectors verified, during numerous observations of surveillance test activities, that testing was complete, data acquisition was accurate, and the acceptance criteria was generally met. When discrepancies were observed by the NRC inspectors, the licensee took prompt corrective action.

Adequate staffing and training of personnel in the areas of surveillance and maintenance was evident during the assessment period. Supervision in the plant was good. Qualification programs were in place and contributed to adequate training in this functional area.

2. Performance Rating

The licensee is considered to be in Performance Category 2 in this area.

3. Recommendations

a. NRC Actions

NRC inspections in this area should include the Core Inspection Program. Additional inspection effort should be directed towards the maintenance program and surveillance testing during the scheduled initial criticality for Unit 2 and the scheduled initial refueling for Unit 1.

b. Licensee Actions

The licensee should focus on the implementation of what appear to be good programs in this functional area.

D. Emergency Preparedness

1. Analysis

This functional area includes activities related to the establishment and implementation of the Emergency Plan and implementing procedures, such as onsite and offsite Plan development and coordination; support and training of onsite and offsite emergency response organizations; applicant performance during exercises that test Emergency Plans; administration and implementation of the Plan; notification; radiological exposure control; recovery; protective actions; and interactions with onsite and offsite emergency response organizations during exercises.

Four emergency preparedness inspections were conducted by NRC region-based inspectors during the assessment period. One of these inspections was the observation of their annual emergency exercise. One violation and nine deficiencies were identified this assessment period. Three of the deficiencies pertained to exercise weaknesses. The violation was due to the failure to submit changes of emergency preparedness implementing procedures to the NRC. The last routine inspection was conducted to determine the extent of readiness of the program after the incorporation of Unit 2. The other routine inspections were performed, in part, to verify that corrective actions had been taken to ensure that supervisory operations personnel understood certain emergency preparedness concepts that had been noted to be weak during training interviews.

The licensee demonstrated a strong commitment to provide management support to the development of a quality emergency preparedness program. This was evidenced by adequate staffing and effective management support to the emergency preparedness program. Additionally, excellent emergency response facilities, equipment, and supplies have been provided. Training and quality assurance programs have begun to yield good results. The licensee conducted several independent audits during the assessment period. Audit findings were being closely followed, corrected, and closed out. The licensee interaction with offsite agencies appeared to be continuous and adequate.

Although emergency response facilities appeared to be basically adequate, the Unit 2 technical support center was not in a complete state of readiness at the time of the last inspection. The licensee committed to the completion of the facility by the time of Unit 2 criticality. Since the Unit 2 technical support center will be supported by the operational support center in Unit 1, the licensee will need to verify that resources can be effectively moved to Unit 2 in a timely manner. The Emergency Plan and implementing procedures need to be modified to document the changes caused by the incorporation of Unit 2 into the emergency preparedness program. These problems indicated that licensee management lacked initiative in identifying and correcting deficiencies in a timely manner.

2. Performance Rating

In general, the results from the annual exercise indicated that the licensee is able to effectively implement the Emergency Plan and procedures.

The licensee is considered to be in Performance Category 2 in this area. The emergency plan and procedures are to be reviewed to ensure they describe fully the interrelationships of the two units.

3. Recommendations

a. NRC Actions

The NRC inspection program should consist of coverage of the annual exercise and an operational readiness inspection to review the integration of both units into the emergency response program.

b. Licensee Actions

Licensee management attention to the operational readiness of Unit 2 facilities is indicated. In addition, facilities, equipment, and procedures should be tested by walkthroughs, drills, exercises, and quality assurance audits to ensure that operational readiness is maintained.

E. Security

1. Analysis

This functional area includes all activities that ensure the security of the plant including all aspects of access control, security background checks, safeguards, and fitness-for-duty activities and controls.

During the assessment period, region-based physical security inspectors conducted ten security inspections. Considerable NRC inspection effort above that normally expected was necessary in order to resolve and followup on findings identified during previous assessments. Four violations of the Physical Security Plan (PSP) and procedural requirements were identified. Three Severity Level IV violations and one Severity Level III violation were identified. These violations were in the areas of lock and key control, protection of safeguards information, compensatory measures, and guard training. Security inspectors accomplished a complete preoperational inspection effort for Unit 2 during the SALP period. No issues were discovered that impacted on the fuel load/low thermal power license for Unit 2.

Licensee management has demonstrated a strong commitment to the implementation of an excellent security program. The security management staff is professional, knowledgeable, and well organized. The licensee has expended considerable effort and manpower to make improvement in the area of implementing procedures, equipment, and training. Technical issues and problems are quickly identified and resolved by the security staff. NRC initiatives were addressed promptly by security management. Action on the longer term commitment to improve the perimeter detection system is still in progress.

With the licensing of Unit 2, the licensee increased the security force to 270 officers. The training and qualification of these officers significantly improved during this rating period as evidenced by performance during the Unit 2 inspection effort.

The licensee had an effective quality assurance program. The quality assurance inspectors responsible for security program audits are knowledgeable and thorough. Security management used audit findings to enhance or correct the security program.

The licensee has made significant, continuing improvements in security since the previous assessment period. Open items and commitments made prior to the licensing of Unit 1, with the exception of the perimeter detection aids issue, have been addressed and actions completed. The recent expansion of the security program to encompass Unit 2 will continue to present isolated problems as new security systems are tested and put into routine use.

2. Performance Rating

The licensee is considered to be in Performance Category 2 in this area.

3. Recommendations

a. NRC Actions

The NRC inspection effort should continue at its current level in order to address licensee progress in fully implementing the expanded security program caused by the licensing of Unit 2.

b. Licensee Actions

Licensee management should continue to provide strong support to the security program. Management should also continue to monitor security system performance in order to promptly discover potential problems.

F. Engineering/Technical Support

1. Analysis

The assessment of this area includes licensee activities associated with the design; plant modifications; engineering and technical support for operations, outages, maintenance, testing surveillance, and procurement activities; training; configuration management; and fire protection/prevention.

This functional area was inspected on a continuing basis by the NRC resident inspectors, by a special Emergency Operating Procedure team inspection, and periodically by other Region IV inspectors, including an inspection of the licensee's fire protection program.

During the assessment period, the licensee's engineering and technical support groups performed well. The approaches to resolution of technical problems by the licensee demonstrated clear understanding of the issues. The licensee adequately addressed the appropriate criteria in its submittals. In particular, in its audit of calculations, the NRC staff found that records were complete and well maintained and that conservatism was routinely exhibited when the potential for safety significance existed.

A large number of technical issues were addressed during the SALP period including installation of new racks in the spent fuel pool, the anticipated transients without scram (ATWS) rule, nonconforming materials (NRC Bulletin 88-05), pressurizer surge line thermal stratification, BMI thimble tube degradation, and dealuminization of aluminum-bronze valves and fittings in the essential cooling water system. The licensee clearly identified the technical issues involved, proposed approaches that were technically sound and thorough, and proposed timely resolutions that generally were conservative regarding safety. Throughout this assessment period, the quality of justifications for continued operation (JCO) written were sufficient in detail and analyses.

The NRC (NRR) staff completed the review of the licensee's submittals regarding compliance with 10 CFR 50.62, the rule on ATWS. The information provided by the licensee showed general understanding of the technical and operating issues as well as understanding and compliance with the ATWS rule.

The evaluation and resolution of the problems associated with a Unit 1 steam generator feedwater pump turbine (SGFWPT) failure and the design changes demonstrated the licensee's ability to resolve technically difficult problems in a timely and effective manner. Engineering support evaluations of this event appeared sufficiently detailed to assure that all of the facts were available prior to initiating modifications to the SGFWPT.

In instances when it was necessary to request additional information or clarification regarding technical matters, the licensee displayed an adequate understanding of the issues and provided complete responses to the NRC staff. The quality of the engineering for these and other activities indicated that

the licensee had technically competent and adequate staff engineering capabilities and was strong in the identification and resolution of technical issues.

NRC inspectors observed various preoperational program activities in Unit 2. These inspections determined that the licensee's programs, procedures, personnel, and controls were developed and implemented in accordance with the preoperational and startup program and regulatory requirements. Management involvement was evident in the various phases of construction and preoperational testing of Unit 2 and startup, power ascension testing, and commercial operation of Unit 1. The licensee's preparations and technical support for the initial fuel loading of Unit 2 demonstrated management involvement and interdepartmental cooperation.

Some weaknesses in the engineering design review area were observed during the SALP period. The licensee issued 12 LERs in this area. The weaknesses appeared to be in design control and reviews of procedures associated with operation and maintenance of the plant.

In the area of procedure development, two violations were issued because of inadequate procedures. One of the inadequate procedures resulted in several separate hydraulic transients (water hammers) in the main feedwater system.

An NRC inspection team conducted an extensive inspection of Unit 2 emergency operating procedures (EOPs). The results of the EOP inspection indicated that the EOPs were technically adequate, however, improvements were needed in the areas of human factors, labeling, and tagging of equipment. The team also concluded that validation of procedures through walkdowns required improvement. Problems regarding labeling of equipment in other procedures were also identified by the resident inspectors and by other NRC team inspections during the SALP period.

The licensee's training program for licensed and nonlicensed staff was assessed on a continuing basis by the resident inspectors and several inspections by members of the Region IV staff. The NRC reviewed training for engineering and technical personnel. The training programs were generally well defined and implemented. The licensee had an effective on-the-job training program. The training department demonstrated improvement and implemented lessons learned in the training program. The licensee maintained a well qualified training staff.

During the appraisal period, two licensing examinations were administered by the NRC. In May 1988, 17 RO examinations were

administered with 16 passing. In November 1988, two SRO and 12 RO examinations were administered with both SRO candidates and 7 RO candidates passing the examinations.

During licensing examinations, NRC personnel observed that the licensee had no standard method for operators to give or acknowledge receipt or understanding of an order or make a report of actions taken, such as starting a pump or operating a switch. The licensee should improve training regarding the method of communications and acknowledgement of orders in the control room.

Significant deficiencies were encountered with the Unit 1 and Unit 2 simulator during the May and November 1988 operator licensing examinations. Modeling inaccuracies, systems limitations, and system unreliability rendered the simulator marginally acceptable for examination purposes. In May 1988 and November 1988, the licensee stated that new simulator programs disks would be loaded to improve the performance of the simulator. The disks or revised programs had not been installed in the simulator computer and the licensee was marginally acceptable in the simulator training area. Overall, the licensee's facility training program is an effective program. However, the simulator deficiencies may indicate a weakness in the program.

Region-based inspectors reviewed the licensee's fire protection program in a Unit 2 inspection during this assessment period. The licensee had an effective fire protection program and conducted fire drills on both Units at the specified intervals. A violation was issued because fire watch personnel falsified entries in official logs. Management was involved in assuring appropriate priorities for fire protection safety. Licensee management displayed a clear understanding of the specific fire protection principles involved and provided sound and conservative approaches to resolution of the technical issues.

2. Performance Rating

The licensee is considered to be in Performance Category 2 in this functional area.

3. Recommendations

a. NRC Actions

NRC inspections in this area should include the Core Inspection Program. Additional inspection effort should be directed towards determining whether simulator improvements have been accomplished prior to the next scheduled licensed operator examinations at Units 1 and 2.

b. Licensee Actions

The licensee should focus attention on procedure review and revision, especially regarding equipment labeling. Procedures must be adequate to safely direct activities. The licensee should correct simulator program deficiencies and become familiar with the use and operation of any changes in simulator/plant performance parameters prior to the next scheduled licensed operator examination.

G. Safety Assessment/Quality Verification

1. Analysis

This functional area includes all licensee review activities associated with the implementation of licensee policies; licensee activities related to amendment, exemption and relief requests; response to generic letters, bulletins, and information notices; and resolution of TMI items and other regulatory initiatives. The functional area also includes licensee activities related to resolution of safety issues, 10 CFR 50.59 reviews, 10 CFR Part 21 assessments, safety committee and self-assessment activities, analyses of industry's operational experience, root cause analyses of plant events, use of feedback from plant quality assurance/quality control (QA/QC) reviews, and participation in self-improvement programs. The assessment includes the effectiveness of the licensee's quality verification function in identifying and correcting substandard or anomalous performance, in identifying precursors of potential problems, and in monitoring the overall performance of the plant.

Licensee management's involvement to assure quality was clearly evident throughout the SALP period. The involvement of corporate management fostered a cooperative attitude and conservative approach on the part of the licensee's staff when resolving NRC staff concerns. Corporate management involvement also was very much evident in the licensee's commitment to safety. Its presence contributed to the ability of the safety committee to be insightful and self critical.

The licensee was very responsive with the NRC staff in working to resolve technical issues. Responses to NRC concerns were timely and included the requested information. Management involvement was evident and frequently included coordinating site activities to provide the requested information. For example, in the safety parameter display system (SPDS) review, the licensee described in its submittals each open item and proposed acceptable resolution. The installation of new racks in the spent fuel pool effort also demonstrated the licensee's

cooperative attitude and conservative approach. The licensee's staff exhibited eagerness to resolve NRC staff concerns related to the safety of the rack installation.

The completeness of the technical submittals, and the effectiveness of communications with the NRC staff, reflect a high level of management attention, involvement, and recognition of safety issues. Notwithstanding the licensee's management attention, at least one deviation from commitments was identified regarding the failure to include the use of the reactor vessel head vent system in an emergency procedure. The licensee deviated from their commitment to Branch Technical Position Reactor System Branch 5-2. The deviation was not typical of the licensee's performance.

The licensee's corrective action program has been effective. The corrective actions usually were detailed and identified the conditions which could result from the identified root cause. There were few, if any, repeats of events. In May 1988, there was a catastrophic failure of one of the Unit 1 main feedwater pump turbines due to a stuck open throttle valve and subsequent overspeed to destruction. Although the failure involved balance of plant (BOP), the licensee kept the plant shut down while the failure was thoroughly investigated and appropriate solutions developed.

The licensee generally responded to NRC Bulletins in a timely manner. During this assessment period the licensee responded to 10 NRC Bulletins. In its handling of the response to NRC Bulletin 88-05, the licensee performed requested additional testing. The quality of the submittal showed that significant attention was given to this issue. This attention to detail generally was evident in all of the NRC Bulletin responses.

The licensee responded to 8 Generic Letters (GL) during this assessment period. The response to GLs were usually timely and contained sufficient information to permit closure of the GLs by NRC inspectors. In some cases the licensee submitted preliminary responses while work was ongoing. This was considered a positive action in that it kept the NRC staff advised regarding progress. For example, the preliminary response to GL 88-17 conservatively stated that no reduced inventory operations would be conducted with irradiated fuel in the reactor until actions stated in the GL were completed.

An SPAI Team formed to assess operation of Unit 1 at the 50 percent power plateau, sampled several 10 CFR 50.59 reviews. Prior to the SPAI, a violation was cited regarding the use of inappropriate material in a steam generator power operated relief valve hydraulic cylinder and pump. Failure to properly identify the material or perform the required review appeared to

be an isolated event. The results of the SPAI team inspection indicated appropriate management awareness of, and attention to, problems regarding 10 CFR 50.59 reviews.

The licensee effectively used the Independent Safety Engineering Group (ISEG) in evaluating licensee event reports, industry and NSSS operational events, various plant problems, and hardware and component failures. The ISEG included personnel who were familiar with the plant systems, components, and operations. Several individuals were licensed operators on Unit 1 and 2 or similar PWR units. The ISEG can self-initiate evaluations or investigate matters referred to it by the Plant Manager. Items addressed by the ISEG during the SALP period included evaluation of midloop operation and investigation of a construction oversight that omitted vortex suppressors from the containment emergency sumps.

The licensee had 7 personnel in the South Texas Project SAFETEAM organization for most of the assessment period. The SAFETEAM kept current on investigations, allegations, and concerns expressed to the SAFETEAM by HL&P employees, contractor employees, and third parties. The SAFETEAM investigations included a review for items that could impact on the continued safe operation of Unit 1 or the anticipated initial criticality and power ascension program scheduled for Unit 2. SAFETEAM investigations were routinely reviewed by a multidisciplined group headed by the nuclear assurance manager.

During this SALP period, an NRC team inspected the Plant Operations Review Committee (PORC) as part of the SPAI. Prior to the inspection, a violation had been issued regarding approval by the PORC of the results of a test containing incorrect data. The data ultimately resulted in an erroneously calculated value for the Moderator Temperature Coefficient. During this inspection, the NRC inspectors concluded that PORC appeared to subject identified problem areas to a detailed review and that the PORC focused its attention on safety significant issues.

The licensee obtained experience feedback from similar operating plants by actively participating in the Westinghouse Owners Group (WOG). Also, a plant reliability task force effectively reviewed the operating experience of other plants on a regular basis and recommended changes to plant systems and hardware based on the reviews. Generally, industry operating experience and vendor information were implemented in training and plant revisions to procedures.

Licensee senior management demonstrated the initiative to be self critical and to ensure that the plant operated in a safe and efficient manner. Licensee senior management frequently

visited the control room and other safety-related portions of the power block. These management personnel reported their findings and observations directly to the Group Vice President, Nuclear, to ensure that activities were conducted and coordinated in accord with appropriate procedure and regulatory requirements.

The operations QA organization included personnel who were familiar with reactor operations and equipment. QA personnel participated in the licensed operation training program. The operations QA organization was effective in supplementing the QA audit program.

Quality assurance (QA) audits generally were effective in identifying issues. Failures to identify substantive problems were rare. Problems identified were transmitted to line management for resolution, reviewed by the offsite review committee and followed up on to ensure adequate resolution. Operations QA was active in assuring that the QA audit program was effective and that reviews were conducted on a frequent basis.

2. Performance Rating

The licensee is considered to be in Performance Category 1 in this area.

3. Recommendations

a. NRC Actions

Inspection activities should be maintained consistent with the Core Inspection Program. Selected Regional Initiative Program inspections should be conducted in the areas of corrective actions, review and awareness of 10 CFR 50.59 reviews and results evaluation, and corrective actions. Trending of events in this area should be initiated when sufficient data is available for a meaningful program.

b. Licensee Actions

The licensee should continue implementation and refinement of the programs established in this functional area. The scope of quality assurance audits and surveillances should be reviewed to assure that weaknesses in areas audited are identified and promptly corrected.

H. Construction Completion and Testing

1. Analysis

The assessment of this area included the licensee's completion of Unit 2 construction and required testing and verification of systems in preparation for a fuel load/low thermal power license. This included: containment vessel tendon installation, tensioning, and testing; cold hydrostatic testing of the primary system, inservice inspection baseline data, containment integrated leak rate testing; hot functional testing; and steam generator testing. The assessment also included management effectiveness in developing, implementing, and supporting overall construction and testing activities.

This area was inspected on a continuing basis by the NRC resident inspectors and during many inspections by NRC region-based inspectors. The NRC inspections covered the licensee's construction, testing, and fuel loading programs as well as fire protection, security, radiation protection, radwaste handling, and emergency planning efforts. These latter areas are addressed in the appropriate functional area analysis in this report.

Work on Unit 2 during the SALP period was characterized by a high level of activity directed toward completion of construction and required testing and verification. Management involvement was comprehensive and evidenced by policies, directives, and implementing procedures which provided appropriate guidance. Management effectively monitored performance and held middle level line management and the workforce accountable for their actions. Construction and testing were completed on schedule and in compliance with the design basis and commitments identified in the Final Safety Analysis Report.

Unit 2 workmanship was generally of high quality. Adequate directives and procedures and good management oversight produced timely and quality results. Construction efforts were completed in a manner consistent with good construction practices.

In the Unit 2 preoperational testing area, the licensee showed program improvements resulting from lessons learned during Unit 1 preoperational testing. The administrative and test procedures were of high quality. Test procedure performance was professional and effective. Few testing errors were observed. Interfacing between operations and test personnel was evident and effective. Appropriate management involvement in testing activities was apparent.

Overall, relatively few violations of NRC requirements were identified regarding construction activities, considering the large work effort involved. The violations cited reflected minor problems and were an indication of isolated cases of personnel error and not of programmatic breakdowns. This was attributable, in large part, to management attention to identified problem areas and an effective corrective action program.

2. Performance Rating

No rating is assessed in this area because no construction activity is planned for the next SALP period. Construction activities for Unit 2 were assessed as satisfactory prior to the issuance of a fuel load/low thermal power license on December 16, 1988.

V. SUPPORTING DATA AND SUMMARIES

A. Licensee Activities

1. Violations

See Table 1 for a tabulation of the of the identified violations in each functional area for this assessment period.

2. Major Inspections

A major ORRI for Unit 1 was performed January 4-8, 1988. An SPAI (the 50 percent power assessment inspection) for Unit 1 was performed June 27 through July 1, 1988. An ORRI for Unit 2 was performed November 14-18, 1988. An Appendix R (Fire Protection) inspection for Unit 2 was performed October 3-7, 1988. An NRC Emergency Operating Procedure (EOP) Inspection of Unit 2 was performed by a team of NRC personnel October 17 through November 4, 1988.

3. Enforcement Activity

The SALP Board reviewed the enforcement history for the period January 1 through December 31, 1988. This review included the deviations, violations, and emergency preparedness deficiencies tabulated by SALP category in Table 1.

There were three enforcement conferences. The first enforcement conference addressed two issues; the licensee's discovery that while in Mode 3, prior to initial criticality of Unit 1, 7 of the 12 feedwater flow transmitters (FWFT) were isolated and out of service. The isolation of the FWFT was a violation of TS. The second enforcement issue regarded voluntary entry into TS 3.0.3. It appeared that while in an action statement, with

2 steam generator PORVs inoperable, the licensee voluntarily entered TS 3.0.3 to test other PORVs (one PORV at a time). Subsequently it was determined that the PORVs were operable while the test was being conducted. The enforcement conference carefully defined the framework for entry into and out of TS 3.0.3. A letter was issued to the licensee as a result of this enforcement conference.

A second enforcement conference addressed safeguards matters. A Severity Level III violation was cited, but no civil penalty was assessed. A third enforcement conference addressed the falsification of entries in official logs by fire watch personnel. The falsification of log entries occurred prior to completion of construction of Unit 1. No escalated enforcement actions resulted from this enforcement conference.

In addition, an enforcement conference was held in the Region IV office on January 26, 1989, to discuss the licensee's failure to install vortex suppressors in the containment emergency sumps (the licensee identified this installation failure in Unit 2 while performing design review activities). Subsequent inspection by the licensee determined that vortex suppressors had not been installed in Unit 1 containment emergency sumps prior to initial criticality and that Unit 1 had operated since initial criticality without the required installation of the vortex suppressors. A Severity Level III violation was issued and a \$50,000 civil penalty was proposed on March 17, 1989. The licensee's response to the escalated enforcement action is pending.

TABLE 1
ENFORCEMENT ACTIVITY

FUNCTIONAL AREA	DEF	DEV	V	NO. OF VIOLATIONS IN SEVERITY LEVEL			
				IV	III	II	I
A. Plant Operations			1	10			
B. Radiological Controls				2			
C. Maintenance/Surveillance				12			
D. Emergency Preparedness	9			1			
E. Security				3	1		
F. Engineering/Technical Support				5			
G. Safety Assessment/Quality Verification				10			
TOTAL	9	0	1	43	1	0	0

Footnote:

Failure to install the votrex suppressors in Unit 1 prior to initial criticality was addressed in NRC Inspection Report 50-498/88-73; 50-499/88-73. An enforcement conference was held in the Region IV office January 26, 1989, and a Severity Level III violation and proposed civil penalty issued on March 17, 1989. The licensee's response to the escalated enforcement action is pending.

JUN 20 1990

HITS	Completed 7/17/90 None - N/A
QPPR	updates provided in 1991 SALP 7/17/90
MIPS	N/A

In Reply Refer To:
 Dockets: 50-498/90-06
 50-499/90-06

Houston Lighting & Power Company
 ATTN: Donald P. Hall, Group
 Vice President, Nuclear
 P.O. Box 1700
 Houston, Texas 77251

This forwards the final report of the Systematic Assessment of Licensee Performance (SALP) Board Report for South Texas Project (STP), Units 1 and 2, for the period of January 1, 1989, through January 31, 1990. This final report includes:

1. The initial SALP Board report.
2. A summary of and a list of attendees at our April 25, 1990, meeting at STP to discuss the SALP Board report.
3. Your May 9, 1990, response to the initial SALP report.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter will be placed in the NRC's Public Document Room.

Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely,

Original Signed By

J.M. Montgomery

Robert D. Martin
 Regional Administrator

Enclosures:

1. Initial SALP report
2. Meeting summary and list of attendees
3. HL&P response to the initial SALP report

cc w/enclosures:

Houston Lighting & Power Company
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df *RIV:DRP/D
 WBJones;df
 6/15/90

JSRI JSRI
 JITapia
 6/18/90
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JSW *C:DRP/D
 JSWiebe
 6/15/90

NRR NRR
 FHebdon
 6/18/90
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DRS D:DRS
 JCallan
 6/18/90

DRP *D:DRP
 SJCollins
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JM DRA
 JMontgomery
 6/20/90

RD RD
 RDMartin
 6/20/90

SJC RECONCUR
 SJCollins
 6/20/90

*previously concurred

~~9006260389~~ 3pp.

IE40
 C/2

Houston Lighting & Power Company

-2-

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bcc to DMB (IE40)

bcc distrib. by RIV:

- R. D. Martin
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- DRS
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- RSTS Operator
- G. Dick, NRR Project Manager (MS: 13-D-18)
- Chairman Carr (MS: 17-D-1)
- Commissioner Roberts (MS: 18-H-1)
- Commissioner Rogers (MS: 16-H-3)
- Commissioner Curtiss (MS: 16-G-15)
- Commissioner Remick (MS: 16-G-3)
- J. M. Taylor, EDO (MS: 17-G-21)
- J. M. Montgomery
- J. T. Gilliland, PAO

- Resident Inspector
- Section Chief (DRP/D)
- MIS System
- Lisa Shea, RM/ALF
- R. Bachmann, OGC
- Project Engineer (DRP/D)

- Records Center, INPO
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- G. F. Sanborn, EO
- C. A. Hackney, RSLO
- A. B. Beach, D:DRSS
- L. A. Yandell, DRSS
- B. Murray, DRSS
- D. A. Powers, DRSS

INITIAL SALP REPORT

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

50-498/90-06
50-499/90-06

Houston Lighting & Power Company
South Texas Project, Units 1 and 2

January 1, 1989, through January 31, 1990

~~9004200388~~ 46pp

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 to NRC rules and regulations. It 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 March 1, 1990, to review the observations and data on performance and to assess licensee performance in accordance with Chapter NRC-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 Region IV Regional Administrator for approval and issuance.

This report is the NRC's assessment of the licensee's safety performance at South Texas Project, Units 1 and 2 (STP), for the period January 1, 1989, through January 31, 1990.

The SALP Board for STP was composed of:

Chairman

S. J. Collins, Director, Division of Reactor Projects, Region IV

Members

L. J. Callan, Director, Division of Reactor Safety, Region IV

A. B. Beach, Director, Division of Radiation Safety and Safeguards, Region IV

G. M. Holahan, Director, Division of Reactor Projects-III/IV/V and Special Projects, Office of Nuclear Reactor Regulation (NRR)

E. J. Holler, Chief, Project Section D, Division of Reactor Projects, Region IV

J. I. Tapia, Senior Resident Inspector, Region IV

G. F. Dick, Jr., Senior Project Manager, Project Directorate IV, NRR

The following personnel also participated in the SALP Board meeting:

W. B. Jones, Senior Project Engineer, Region IV

R. J. Evans, Resident Inspector, Region IV

J. F. Rogge, Regional Coordinator, Office of the Executive Director for Operations

II. SUMMARY OF RESULTS

A. Overview

STP is a plant with strong management involvement, good operating experience with Unit 1 and startup experience with Unit 2, and a strong commitment to safety. The licensee has adequate resources to operate two units and has had good success in resolving a number of significant engineering problems. STP is a new plant and the licensee has had a number of problems not atypical during the first year of operation. The licensee has demonstrated its ability to resolve these problems with the appropriate concern for safety. Performance in the area of plant operations increased from a Category 2 to a Category 1 rating and reflected effective management involvement and a well trained, professional operations staff. The Category 2 improved rating in the radiological controls area reflected a well managed program adequately handling the problems associated with the startup and first refueling outage of a new plant. The Category 1 performance in the maintenance and surveillance area was characterized by sufficient staff and good programs, offset by personnel errors early in the SALP period. Strong performance in the security area resulted in an increase from a Category 2 to a Category 1 rating. Performance in the engineering and technical support area reflected good success in resolving a number of significant engineering problems and was assessed a strong Category 2. Category 1 performance in the safety assessment and quality verification area reflected continued strong management involvement regarding a commitment to safety, resolution of complex technical issues, and good communications with NRC.

Although programs assessed at Category 1 performance level are eligible for reduced inspection effort by the NRC, we will continue the fundamental inspection program at your facility due to the near-term operating license status.

<u>Functional Area</u>	<u>Previous Performance Category (01/01/88 to 12/31/88)</u>	<u>Present Performance Category (01/01/89 to 01/31/90)</u>
1. Plant Operations	2	1
2. Radiological Controls	2	2 Improving
3. Maintenance/ Surveillance	2	1
4. Emergency Preparedness	2	2
5. Security	2	1

<u>Functional Area</u>	<u>Previous Performance Category (01/01/88 to 12/31/88)</u>	<u>Present Performance Category (01/01/89 to 01/31/90)</u>
6. Engineering/ Technical Support	2	2
7. Safety Assessment/ Quality Verification	1	1

III. CRITERIA

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

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

- A. Assurance of quality, including management involvement and control;
- B. Approach to the resolution of technical issues from a safety standpoint;
- C. Responsiveness to NRC initiatives;
- D. Enforcement history;
- E. Operational events (including response to, analyses of, reporting of, and corrective actions for);
- F. Staffing (including management); and
- G. 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.

This SALP report includes an appraisal of performance trends in certain functional areas. Determination of the performance trend was made selectively and was reserved for those instances when it is necessary to focus NRC and licensee attention on an area with a declining performance trend, or to acknowledge an improving trend in licensee performance.

The trend, if used, is defined as:

Improving: Licensee performance was determined to be improving during the assessment period.

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

IV. PERFORMANCE ANALYSIS

A. Plant Operations

1. Analysis

This functional area consists chiefly of the control and execution of activities directly related to operating a plant, such as plant startup, power operation, plant shutdown, system lineups, normal operations, response to transient and off-normal conditions, plant-wide housekeeping, and control room professionalism.

This area was inspected on a continuous basis by resident and region-based inspectors and by an Operational Readiness Assessment Team (ORAT).

The licensee safely and efficiently completed Unit 2 cold precritical testing. Inspectors monitored the licensee's activities which proceeded on schedule and indicated a planned program that reflected good management attention. Hot precritical testing was conducted successfully. Observations of the licensee's preparation for achieving initial criticality

indicated a planned program that reflected management attention. The reactor performance staff displayed extensive knowledge of core physics parameters and test procedure requirements.

The Unit 2 startup program, including low power physics testing, was performed in accordance with the licensee's procedures to verify compliance with the Technical Specification (TS), Section 14 of Final Safety Analysis Report (FSAR), and vendor design criteria. The test program procedures were well organized and test results packages clearly stated how acceptance criteria were satisfied. Low power physics testing was performed in a systematic and carefully planned manner. The licensee safely completed necessary testing requirements for the power ascension program. The operators exhibited an excellent knowledge of plant systems and procedures during these plant operations.

The ORAT, conducted March 13-17, 1989, identified strengths in the licensed operators' abilities and professionalism, as well as management's involvement and oversight of operational activities. Weaknesses were identified in procedure compliance, control of temporary scaffolding, control of fire and locked doors, control of combustible material, steam and water leaks, equipment nomenclature inconsistencies with procedures, and control of compressed gas cylinders. The licensee has implemented corrective actions for the above weaknesses. A long-term procedure upgrade program is presently ongoing.

The plant operations staff exhibited a professional attitude in the operation of the plant throughout this assessment period. The licensee utilized a five-shift (8-hour/shift) rotation. Each shift was properly manned with a higher proportion of senior reactor operators (SROs) to reactor operators (ROs) than required. The shift schedules provide for a rotating week of formal classroom training for each of the five crews. Some mandatory overtime for the shift supervisors has been required to meet procedure upgrade schedule commitments.

The licensee has continued their support for the University of Maryland college degree program for its licensed operators. Plant management made frequent tours of the control room and plant.

The operating staff consistently exhibited a high level of competence and conservatism when facing the many plant challenges that occurred during this assessment period. Licensee management provided excellent support of the operations staff which, in turn, led to an increase in the level of staff professionalism.

During this assessment period, the licensee successfully performed two midloop operating evolutions during the first Unit 1 refueling outage. New operating procedures were generated

to support the first reactor coolant system midloop evolution in accordance with the requirements of Generic Letter (GL) 88-17. The actual operation at midloop was a well planned activity carried out by highly skilled operators.

There were no reactor trips resulting from operator error during this assessment period. Fifteen reactor startups were completed without personnel error. The licensee routinely demonstrated conservatism when a potential for safety significance existed. As a result of a Unit 2 trip caused by an inverter circuit failure, the licensee initiated a plant reliability improvement program to determine the cause of all previous plant trips and to identify possible single failures in the secondary plant which might cause future plant trips. Of the 3 Unit 1 trips and 9 Unit 2 trips, 10 were attributed to equipment failure. The 2 remaining trips resulted from improper performance of surveillance tests. The review also disclosed that 8 of the trips were the result of balance-of-plant (BOP) initiated events. Several single point failure conditions which could cause a reactor trip were identified. Twenty-three design changes were initiated which, when implemented, will individually serve to reduce the likelihood of a plant trip. Four of these changes were immediately implemented. In addition, the licensee determined that a loose-lead detection program and a BOP visual surveillance program were warranted for critical BOP controls.

During the last SALP cycle, the Operations Department committed to complete a general enhancement of all operating procedures in response to concerns raised during an NRC emergency operating procedures (EOP) inspection. The concerns involved editorial errors, inconsistencies in procedural content, and inconsistencies between procedure references and plant labeling. Licensee management actively tracked progress toward completion of this commitment. At the close of this assessment period, the EOP upgrade program was on schedule at about 65 percent complete. The interdepartmental review and in-plant walkdown validation of the revised EOPs had been completed. The major item remaining to be completed is the simulator validation. The off-normal operating procedures upgrade program was commenced during this assessment period.

The licensee has a goal to attain a control room annunciator blackboard status during normal full power operation. The licensee also formed a task force to eliminate those annunciators which are in alarm during normal plant conditions at 100 percent reactor power. For Unit 1, all scheduled work items except one have been completed. For Unit 2, all work items have been defined and are scheduled to be completed in 1990.

Weaknesses were noted throughout the SALP period regarding general plant housekeeping. Early in the period, inspectors

noted that housekeeping practices were not followed in the control room regarding the accumulation of test equipment within the "at-the-control" area. Inspections in remote parts of the plant, such as the Met tower and the firewater pump house essential cooling water intake structure, routinely revealed loose paper, dirt, and other items. There also appeared to be an absence of attention regarding housekeeping efforts in more frequented parts of the plant such as the emergency diesel generator rooms and in the radiologically controlled parts of the plant.

The licensee appears to have adequate resources and appropriate management involvement regarding their ability to operate two units safely. The licensee exhibited strong performance with Unit 1 through the first refueling outage and during the startup of Unit 2. During this assessment period, the licensee successfully completed Unit 2 power ascension testing and declared the unit in commercial operation. Routine plant operations have demonstrated consistent evidence of prior planning and frequent involvement of licensee management.

2. Performance Rating

The licensee is considered to be in Performance Category 1 in this area.

3. Recommendations

a. NRC Actions

NRC inspection effort should be consistent with the fundamental inspection program.

b. Licensee Actions

The licensee should continue to improve housekeeping efforts plant-wide.

B. Radiological Controls

1. Analysis

The assessment of this functional area consisted of activities directly related to radiological controls, radioactive waste management, radiological effluent control and monitoring, water chemistry controls, and transportation of radioactive materials.

The radiation protection program was inspected twice by region-based radiation specialist inspectors in addition to the routine inspections performed by resident inspectors. The inspectors also reviewed an issue that was reported in

September 1989 involving the shipments of sewage treatment sludge containing possible low-levels of Cobalt-58 and -60 to an offsite disposal site. (The licensee could have avoided this issue if information provided in NRC Information Notice 88-22 had been implemented.)

The radiation protection department staffing is considered appropriate to provide health physics support for a two-unit facility. However, a shortage of radiation protection personnel had been experienced at various times during this period which caused some minor delays during day shift work activities. The permanent plant staff is supplemented with contractor radiation protection technicians during extended outages, but a heavy reliance is not placed on contractor support for routine plant operations. The staff consisted of a good mix of senior level technicians along with a number of professionals and supervisors with strong health physics academic backgrounds. A low turnover rate was experienced within the radiation protection department during the assessment period.

A well defined training and qualification program had been established for personnel at the technician level. A plant systems course was included as part of the routine qualification program in order to provide radiation protection personnel a background concerning systems that could impact health physics job coverage. Supervisors and professionals attend periodic training, but an organized training program had not been established to ensure that these individuals maintain and expand expertise in their assigned areas.

The radiation protection program is well managed and receives good support from licensee management. In practice, functional areas of responsibility within the radiation protection department are well defined, although, in some cases personnel position descriptions were written in a general nature and did not clearly define the job duties and responsibilities.

The radiation protection manager and other department supervisors attend various staff meetings and play an active role in the planning and scheduling of plant activities. Good working relationships exist between the radiation protection department and other departments, such as operations and maintenance.

Good quality assessment was evident by the conduct of performance-based audits. These audits were designed to verify compliance with approved plant procedures. Audit effectiveness could be improved by expanding the scope to include comments on the adequacy of existing procedures or observations on needed improvements.

Some areas for improvement were identified with the ALARA program. The program was addressed in several separate department procedures, in lieu of an ALARA manual. A full-time ALARA coordinator had been assigned to handle ALARA activities, however, staffing was minimal to handle the work load at the two-unit site. The ALARA program was designed to address major outage activities but did not include such programmatic features as source term evaluations, corrective actions for chronic radiation sources, such as overhead pipes and drains near personnel access routes; nor the use of chemical decontamination techniques.

During the Unit 1 refueling outage, it was discovered that an ALARA review was not conducted for a design change initiated prior to this SALP period by the engineering support group. This design change involved several penetrations made in the fuel handling building which were in line with the fuel transfer tube. The licensee's response was to provide adequate shielding for the penetration and to ensure that proposed design changes will receive ALARA review and approval.

The licensee was aware of the ALARA program shortcomings and had initiated actions to improve this area. The licensee had established an aggressive 100 person-rem goal for 1989. The actual exposure was about 160 person-rem, primarily because of unexpected work activities occurring during the refueling outage. The low person-rem received during 1989 is a good indication of an effective radiation protection program.

In general, radiation protection activities associated with the first refueling outage were performed in an acceptable manner. Some problems were observed concerning placement of step-off pads and the type of clothing being worn by personnel working in the containment building. The licensee demonstrated good judgement in the resolution of technical issues. Two examples involved the identification and shielding of radiation streaming from penetrations in the fuel handling building and radioactive contamination found in the inorganic basin and sewage sludge.

The radiochemistry and water chemistry programs were inspected once during the assessment period. This included confirmatory measurements of plant liquid and gaseous samples and certified standards. The radiological confirmatory measurements involved separate counting laboratory facilities for radiochemistry and health physics at each unit. The licensee's results for Unit 1 and Unit 2 indicated very high agreement with NRC analyses results consistent with those achieved during the previous assessment period. The results for both Units 1 and 2 water chemistry measurements showed 100 percent agreement, an improvement in water chemistry analyses over the previous

assessment period. The licensee had implemented an improved interlaboratory and intralaboratory quality control program for chemistry technician performance evaluation. This program has proven to be a strength in the chemistry and radiochemistry programs as shown by their confirmatory measurements performance during this assessment period. The Electric Power Research Institute (EPRI) chemistry parameter guidelines along with the Westinghouse chemistry specifications are specified in plant procedures and strictly followed. The staffing, training, and qualifications for the chemistry and radiochemistry programs are appropriate to support a high quality program. The personnel turnover rate for these areas was low. Comprehensive quality assurance audits were performed to determine compliance with established procedures. No problems were identified concerning the response to in-house audit findings, resolution of technical issues, and responsiveness to NRC initiatives.

The radioactive waste management program was inspected twice during the assessment period. The licensee had implemented a program that demonstrated compliance with the Radiological Effluent TS (RETS), the offsite dose calculation manual (ODCM), and the process control program (PCP). Liquid and gaseous release permit programs had been implemented to ensure that proper review was completed prior to making planned releases. The areas of staffing and personnel training and qualifications are considered adequate to implement a radioactive waste management program. The personnel turnover rate for this area was low. The licensee had conducted a quality assurance audit of the radioactive waste management area. All identified audit and surveillance findings were closed in a timely manner.

The radioactive material transportation program was inspected twice. No problems were identified in this area. Good implementing procedures had been issued and the program appeared to be well managed.

The radiological environmental monitoring program was not inspected during this assessment period.

The licensee's radiological program has been shown to be effective and is continuing to improve. The radiochemistry and water chemistry programs are characterized by good facilities and well implemented programs. Additional strengthening of the ALARA program should be considered to ensure that complex radiological situations are properly evaluated and controlled.

2. Performance Rating

The licensee is considered to be in Performance Category 2 with an increasing performance trend in this area.

3. Recommendations

a. NRC Actions

NRC inspection effort should be consistent with the fundamental inspection program.

Regional initiative inspections should be performed in the ALARA area.

b. Licensee Actions

Efforts should be considered to enhance the ALARA program.

C. Maintenance/Surveillance

1. Analysis

The assessment of this functional area included all activities associated with either diagnostic, predictive, preventive or corrective maintenance; procurement, control, and storage of components, including qualification controls; installation of plant modifications; and maintenance of the plant physical condition. It included conduct of all surveillance and inservice inspection (ISI) and testing (IST) activities.

The maintenance/surveillance functional area was inspected routinely by the resident inspectors, periodically by the regional inspectors, by a system entry retest team (SERT) inspection, and by an initial (1 week) maintenance team inspection (MTI).

During this assessment period, the maintenance department successfully supported the completion of the first refueling outage in Unit 1 as well as outages in both units conducted to inspect reactor vessel bottom mounted instrumentation. The licensee's actions in meeting GL 88-17, "Loss of Decay Heat Removal," were satisfactorily completed. The diversity and arrangement of control room instrumentation was considered a strength. Training provided to the operators was considered excellent.

In order to focus maintenance initiatives, the licensee implemented a preventive maintenance (PM) program enhancement plan of action during this assessment period. This program resulted in a reduced and more focused scope of the PM program and a reduced PM deferral rate trend.

The licensee has initiated an aggressive program to reduce the backlog of preventive and corrective maintenance tasks. In this respect, the licensee has established a Contract Craft

Support Group to address open maintenance items. This group numbers approximately 100 people, of which 45 are craftsmen who are to augment the existing licensee maintenance department with the remainder comprising the Contract Craft Support Group, whose sole function will be to reduce the outstanding backlog of low priority work.

The licensee has a strong program for determining the need for retest and identification of appropriate retest type. Also, good procedures were developed and implemented for postmodifications and postmaintenance retests. A minor weakness was identified in that there were no documented guidelines for identifying and developing needed integrated systems poststartup retests for extensive modifications.

The licensee has an effective work order control system which utilizes a data base containing previous work experience and equipment history. A new work process program was implemented during the assessment period. This program served to clarify individual responsibilities and requirements to be contained within work documents. The new work process program also expanded existing instructions from one to five procedures to establish a better work document generation process.

The maintenance department conducted a self-assessment which resulted in 144 findings during this SALP period. Action items were generated and input into the maintenance department 5-year action plan. The maintenance department reorganized in December 1989, establishing a separate planning division and manager, which now provides dedicated management to the work planning effort.

Two reactor trips resulted from improper surveillance activities (personnel error). A plant reliability program was developed to identify potentially vulnerable components which could cause a reactor trip. Design changes were initiated and additional surveillances implemented for critical BOP equipment.

The licensee's surveillance testing program resulted in a number of missed surveillances early in the SALP period, however, management attention was focused in this area and recent data indicates that the problem of missed surveillances due to personnel error was corrected with surveillance tests performed as scheduled with high quality procedures. Inspectors observed that a large filing backlog caused slow retrieval of data packages and there were several instances of failure to provide an adequate justification for determining that data entry was "not applicable."

Inspections of Units 1 and 2 IST program activities found that the test procedures comprehensively addressed ASME Section XI

Code requirements, reference values, and acceptance criteria. Operations personnel demonstrated alertness to procedural details and knowledge of system performance requirements. Review of Unit 1 ISI activities found a well organized and written ISI plan, appropriate administrative controls for repair and replacement activities, and satisfactory performance of ISI examinations. A noncited violation was identified regarding the failure to obtain a quality assurance review of ISI contractor special process procedures.

The licensee developed programmatic controls for nondestructive examination (NDE) activities which were fully consistent with the requirements of Sections III and V of the ASME Code. Inspectors ascertained from visual inspection of welds, review of radiographic examination film, and review of NDE records that the licensee has effectively implemented the NDE program.

Inspection of welding activities revealed weaknesses in program implementation, as evidenced by the identification of violations pertaining to the failure to monitor in-process welding parameters, and the observed commingling of welding materials in storage ovens.

Licensee performance in the maintenance and surveillance area was characterized by sufficient staff and good programs, offset by personnel errors early in the SALP period which were subsequently corrected. Strong management involvement resulted in successful completion of the Unit 1 first refueling outage, including preparations for complex maintenance activities.

2. Performance Rating

The licensee is considered to be in Performance Category 1 in this area.

3. Recommendations

a. NRC Actions

NRC inspection effort should be consistent with the fundamental inspection program.

b. Licensee Actions

The licensee should continue maintenance and surveillance program enhancement activities.

D. Emergency Preparedness

1. Analysis

The assessment of this functional area included activities related to the establishment and implementation of the emergency plan and implementing procedures, licensee performance during exercises and actual events that test emergency plans, and interactions with onsite and offsite emergency response organizations during exercise and actual events.

During the assessment period, region-based and NRC contractor inspectors conducted two emergency preparedness inspections. The first inspection consisted of the observation and evaluation of the annual emergency response exercise. The second inspection involved a review of the operational status program.

During the emergency response exercise, conducted in April 1989, a significant weakness was identified in that the licensee underestimated the offsite doses associated with the given scenario. This underestimation of the dose projections occurred because the licensee had not programmed the computer for dose assessment calculations to account for core degradation indications from the high-range containment radiation monitor.

Another weakness identified was the licensee's inability to demonstrate timely and effective personnel accountability during and after the site evacuation. This was a repeat weakness from the previous 1988 exercise and recurred as a result of the licensee's failure to identify all the factors that contributed to the delay of personnel accountability in the 1988 exercise.

The emergency preparedness inspection of the licensee's operational status program identified two problem areas. The first area pertained to inadequate training of emergency response personnel. The second area pertained to the licensee not being able to effect adequate physical security over emergency equipment and supplies in the two technical support centers (TSCs).

The inspectors found that key emergency responders were not able to effectively classify a general emergency condition or make proper offsite dose projections. Also, some of the interviewees had not received training in the latest procedure changes, and others had not received hands-on training on the computer used to perform dose projections. Consequently, the unfamiliarity with dose assessment and emergency action levels exhibited by these interviewed teams indicated a deficiency in the licensee's operational readiness to respond to an actual emergency.

The inspectors also identified that the licensee had not established the necessary controls over equipment and supplies within the TSCs. There were questions raised about the availability of TSC equipment and supplies to support a fully functional TSC within the required 60 minutes. This problem had been identified by the licensee several months prior to the inspection, but the licensee's prioritization of issues prevented the intended corrective action from being implemented in a timely manner.

The above issues indicated a need for increased management involvement to ensure that responders are properly trained and that problems with potential safety impact are identified and corrected.

During this appraisal period, the NRC inspectors observed good performance in the control room, technical support center, and operations support center. Also, it appeared that the licensee maintained a well qualified and experienced staff in their emergency preparedness and emergency response organizations. Apart from the technical support centers, other emergency response facilities, such as the control room and the emergency operations facility, were found to have excellent layouts with readily available equipment to enable efficient implementation of the emergency response functions.

During the course of the assessment period, the licensee corrected or implemented corrective measures to resolve the self- and NRC-identified weaknesses. The independent audit conducted by the licensee's quality assurance department was found to have been enhanced by the use of additional emergency preparedness expertise from outside of the licensee's organization. It is notable that the licensee has taken the initiative to make preparations for conducting a performance-orientated audit of the emergency preparedness program during 1990.

Despite the repeat weakness involving accountability, the licensee's approach to resolution of exercise weaknesses demonstrated a clear understanding and control of the issues. Moreover, the licensee's approaches were generally thorough and technically sound.

The issues identified during the annual exercise and the operational status inspection indicated that increased management review is needed in work prioritization, training, and dose assessment capabilities. It is apparent, however, from the inspection findings that the licensee has maintained an adequate emergency preparedness program with a satisfactory level of operational readiness to protect the health and safety

of the public. Continued refinements are needed before the licensee's emergency preparedness program will reach full operational maturity.

2. Performance Rating

The licensee is considered to be in Performance Category 2 in this area.

3. Board Recommendations

a. Recommended NRC Action

The NRC effort should be limited to the fundamental inspection program. Regional initiative inspections should be performed in the areas of training, dose assessment, and staffing.

b. Recommended Licensee Action

Management attention to the implementation of the emergency preparedness program should consider the weaknesses identified and a review of corrective action prioritization.

E. Security

1. Analysis

This functional area includes all activities that ensure the security of the plant, including all aspects of access control, security background checks, safeguards information protection, and fitness-for-duty activities and controls.

During the assessment period, this area was routinely reviewed by the resident inspectors and region-based physical security inspectors conducted three security inspections. The licensee identified several violations of the Physical Security Plan (PSP) and procedural requirements. The violations identified involved inadequate compensatory measures, inadequate control of licensee designated vehicles, inadequate lock and key control, and inadequate protection of safeguards information.

The previous SALP period analysis referenced a violation for inadequate compensatory measures. Two of the licensee-identified violations were in this program area. Two additional violations were identified by the security force but were not directly attributable to a security program weakness. These violations involved failures by the plant personnel to maintain control over badges and licensee designated vehicles. All of the violations were properly reported by the licensee.

During the assessment period, a preoperational NRC inspection for Unit 2 included those security systems common to both units. The licensee's security systems were determined to be well designed and functional. The licensee has diligently tested security systems to ensure operability and the licensee has exceeded the regulatory requirement by conducting vulnerability testing of all security systems. The licensee's maintenance program has ensured that security systems receive prompt and efficient attention.

Licensee management has demonstrated a strong commitment to the implementation of the security program. The security management staff is professional, knowledgeable, and well organized to provide maximum support for the security force. All technical issues were quickly identified and resolved. All NRC issues were promptly addressed and appropriate action taken. In response to the threat of vehicle land bombs, the licensee conducted extensive planning for the contingency and completed construction of one vehicle denial system.

The security force has an appropriate number of personnel that appeared to be well trained and dedicated to performing their security function in an outstanding manner. While the security force is provided by a contractor, the licensee made every effort to integrate the security contractor personnel into the licensee organization. The licensee conducted an extensive contingency plan drill program that ensured that all security shifts could implement contingency requirements. The drill scenarios were extensive and conducted on a frequent basis.

The quality assurance and compliance programs were effective in identifying problem areas. Security management took effective steps to ensure that identified problems did not recur. The licensee completed a comprehensive audit of the security program during the current SALP period. All findings requiring corrective action were promptly completed. Each finding was properly reviewed and reported to the NRC if required.

The licensee has made significant progress in improving the security program. The licensing of Unit 2 had no significant adverse impact on the continued improvement of the security program.

2. Performance Rating

The licensee is considered to be in Performance Category 1 in this area.

3. Recommendations

a. Recommended NRC Actions

The NRC inspection effort should be consistent with the core inspection program.

b. Recommended Licensee Actions

Licensee management should continue to provide strong support to the security program.

F. Engineering and Technical Support

1. Analysis

The purpose of this functional area is to address the adequacy of technical and engineering support for all plant activities. The assessment of this area included all licensee activities associated with the design of plant modifications; engineering and technical support for operations, outages, maintenance, testing, surveillance, and procurement activities; training; and configuration management.

This functional area was inspected on an ongoing basis by the resident inspectors and periodically by the region-based inspectors.

During this assessment period, plant engineering personnel provided the lead role for coordination of most major plant outage evolutions. These efforts included the Unit 1 generator fire recovery, turbine stationary blade cracking outages for both units, Unit 1 refueling outage steam generator work, Diesel Generator No. 22 recovery, and the Unit 1 extraction steam bellows failure recovery. These efforts were well coordinated, significant, technical challenges, which were handled with strong attention to plant safety issues. The reactor performance engineers conducted the Unit 2 startup power ascension testing program in a competent manner ahead of the projected schedule. An example of plant engineering personnel attention to detail and plant safety was the identification of the safety injection system surveillance test anomaly and the resulting suspension of the Unit 1 startup. This action was subsequently commended by NRC Region IV management in a letter to the licensee.

In response to the Unit 1 turbine generator fire which was caused by the failure of a nonsafety-related component in BOP, engineering generated a failure mode and effects analysis on other nonsafety-related systems. This analysis was performed on 17 systems to determine if system design or a component failure

could affect overall plant reliability. In September 1989, Unit 2 tripped on loss of a single DC power source to the turbine trip solenoid valves. Immediately following the trip, several engineering task forces were organized to review various aspects of improved plant reliability. The licensee's plant engineering department initiated an infrared thermography program for use in loose or faulty electrical connections which resulted in the identification and repair of several electrical connections reducing the potential for plant trips or equipment malfunctions.

The licensee initiated a vendor technical manual update program to incorporate outstanding amendments for vendor technical manuals used by engineering, operations, and maintenance. A total of 338 manuals were reviewed during this SALP period. The licensee also established a substantial vendor drawing enhancement program to upgrade substandard drawings identified in the project document control database. This program verifies legibility and reproducibility of vendor drawings. Both of these programs are indicative of a proactive approach by engineering in ensuring that plant data is maintained and retrievable.

During this SALP period, two station problem reports were issued which identified the contamination of nonradioactive systems because of cross-connection. The corrective actions taken required a review of systems for interfaces which could provide potential release points to nonradioactive systems or to the environment. This review considered anticipated equipment failures and potential system misalignment. As a result of this review effort, four design changes were proposed to reduce the contamination potential.

In this SALP period, a Quality Engineering Group was established within the Support Engineering Department in an attempt to identify and prevent problems before occurrence. This group has the responsibility of conducting internal surveillances to ensure that engineering programs and procedures are being followed.

During this SALP period, the licensee initiated a design basis document verification program for selected mechanical, electrical, and instrumentation and control systems. The objective of this program is to provide comprehensive, retrievable, verified design basis source documentation and assure that engineering personnel are cognizant of the design process used and of the requirements and intent of the original design. This effort is a planned 4-year program that represents a strong commitment to plant configuration management. The configuration management program in the engineering department also includes design deficiency trend reports done on a quarterly

basis. Examination of these reports indicates a downward trend in problems associated with inadequate design information.

A special team inspection of the programs implemented to ensure compliance with the environmental qualification (EQ) of electrical equipment requirements was conducted. The inspection determined that the licensee's EQ file system was difficult to use, but that the programs for the EQ-related procurement and maintenance activities were good, and the governing procedures for the overall EQ program were acceptable. The licensee lacked sensitivity regarding the operability of plant components in that when the qualification of certain motor operated valves (accumulator outlet valves) that were subjected to submergence became questionable, the licensee failed to relate the effect of this condition on the operability of the valves and, hence, to the effect on facility operations. Problems in EQ appear to be attributable to a small EQ staff and heavy reliance on contractors.

Another inspection which was conducted during this SALP cycle determined that the records program was satisfactory and found that record retrieval was accomplished in a timely manner. Other inspections germane to the engineering and technical support functional area disclosed weaknesses in the facility drawings and procedures. The inspection noted that the licensee had previously identified those weaknesses and was implementing corrective actions. Other inspections identified errors and weaknesses in procedures (EOPs, AOPs, and Alarm Procedures). The licensee's actions are generally conservative, but there did not appear to be evidence of a critical self-assessment process regarding procedure details to identify these types of problems.

The licensee has maintained a successful licensed operator training program. The overall passing percentage for ROs and SROs is 86 percent. The plant simulator is fully operational, however, significant deficiencies were encountered with the simulator during the May and November 1988 operator licensing examinations. Modeling inaccuracies, systems limitations, and system unreliability made the simulator marginally acceptable for examination purposes. The April 1989 examination indicated that progress had been made towards correcting these deficiencies. After the transition from startup operation to full power operation of both units, the licensee focused more resources on requalification and simulator improvements.

The licensee has established an effective training program for nonlicensed personnel. Strict training requirements have been established for maintenance personnel which must be met before an individual is authorized to perform a given task. However, no formalized training program has been established for

system engineers. Although the system engineers have been in place for several years, many of the individuals had not been provided training on their respective plant systems.

Inspections of the STP procurement program have identified several programmatic weaknesses. Licensee management response to this issue has been effective. Actions taken included review of all previously issued purchase orders and added program controls and personnel training. Inspections also revealed that the procurement program had not appropriately addressed commercial grade procurement and dedication requirements in the past. The licensee has recognized this weakness and has developed program requirements and instituted a review of prior commercial grade procurements.

2. Performance Rating

The licensee is considered to be in Performance Category 2 in this area.

3. Recommendations

a. NRC Actions

NRC inspection effort should be consistent with the fundamental inspection program.

A regional initiative team inspection should be conducted to more fully evaluate the licensee's engineering capabilities with focus on direct support of operations, maintenance, and testing.

b. Licensee Actions

The licensee should continue to provide management attention in order to improve and strengthen their engineering and technical support capabilities. Additional efforts should be made to improve the retrievability of EQ files and to resolve questions regarding past commercial grade procurements.

G. Safety Assessment/Quality Verification

1. Analysis

The assessment of this functional area included all licensee review activities associated with the implementation of licensee policies; licensee activities related to amendment, exemption, and relief requests; and response to generic letters, bulletins, and information notices. The assessment of this functional area also included licensee activities related to resolution of

safety issues, 10 CFR 50.59 reviews, 10 CFR Part 21 assessments, safety committee and self-assessment activities, quality assurance/quality control reviews, and in monitoring the overall performance of the plant.

This functional area was assessed on a continuing basis throughout the period.

During this period, the full power license was issued for Unit 2. In addition, there were nine amendments issued for Unit 1 and three for Unit 2. Notable amendments were the issuance of combined TS in concert with Unit 2 licensing and the staff approval of the use of silver-indium-cadmium control rods. Two of the license amendments did not involve changes to the TS but were the result of items identified by the licensee's 50.59 program as unreviewed safety questions.

During the period prior to the licensing of Unit 2, there were several issues that surfaced late in the licensing process that required resolution before licensing. In response, the licensee committed the resources necessary to address the issues, and the technical approaches were sound. Further, there was frequent communication initiated by the licensee to determine what information, if any, would be required by the staff. Top level management involvement was evident throughout the period.

With regard to the license amendments, the licensee's submittals consistently showed a clear understanding of the safety aspects of the technical issues. In those instances where additional information was requested, the licensee was responsive and timely to the questions.

The licensee has taken a very conservative approach in the implementation of 10 CFR 50.59 screening criteria. The licensee established a plant and safety analysis group within the nuclear engineering department in a major effort to reduce the likelihood of an inadvertent change without a properly documented safety evaluation. This group provides an in-line review for all engineering change notices and temporary modifications prior to the review by the Plant Operations Review Committee (PORC). This level of attention to issues associated with 10 CFR 50.59 ensures consistency in the content and quality of safety evaluations.

Generally, licensee submittals are made sufficiently ahead of the required date. An exception to this is the recent relief request from certain Appendix J, Type C, leak rate test schedules.

The licensee submitted 48 licensee event reports (LERs) for Units 1 and 2. The LERs were well written and issued in a

timely manner. A review of reports required by 10 CFR 50.72 indicated that appropriate events were subsequently addressed by an LER.

During this rating period, the licensee's responsiveness to NRC Bulletins and generic letters continued to be technically complete and generally timely. Responses to IE Bulletins 88-10, "Nonconforming Molded-Case Circuit Breakers," and 88-11, "Pressurizer Surge Line Thermal Stratification," were particularly thorough. The licensee was the lead plant in resolving the issues raised by the staff in IE Bulletin 88-11. The licensee responded to a total of six bulletins and 12 generic letters. Generic Letter 89-21 required licensees to provide the status of implementation of unresolved safety issues. The response was accurate and timely, and the backup records retained by the licensee for each item were well organized and traceable.

Inspection of the quality assurance program found that changes made to quality assurance implementing procedures since the last NRC inspection were both timely and consistent with the Updated Final Safety Analysis Report and the TS. Satisfactory program requirements and implementation were noted with respect to design changes and modifications, records, document control, audits, 10 CFR Part 21, and receipt, storage, and handling of equipment and materials. Weaknesses, as noted in the engineering and technical support section of this report, were observed in the procurement program during this SALP period. Inspections during this SALP period have identified that the licensee consistently performs complete and thorough investigations of the root cause of reactor trips and equipment failures. Of particular note during this period was the excellent manner in which the licensee responded in its analysis of the Standby Diesel Engine No. 22 failure and management of repair and recovery activities.

Inspection of licensee self-assessment activities during this SALP period identified overall effective performance by the Nuclear Safety Review Board (NSRB) and the plant PORC. NSRB meetings were well documented and the resolution of concerns was generally effective. An exception pertained to a lack of timely resolution of certain unreviewed safety question evaluations which had been referred back to the PORC for additional information. The licensee immediately corrected this problem in the course of the NRC inspection. PORC meetings were also well documented, with indepth discussion of agenda items and effective followup on required actions. Review of Independent Safety Engineering Group (ISEG) activities indicated that assessments were detailed and thorough in approach, with some documentation deficiencies noted.

The licensee decided to conduct safety system functional inspections (SSFIs) of key safety systems. In addition, the licensee completed and sent to the staff a Level I performance rating analysis. Both of these items are considered examples of proactive licensee initiatives as well as positive indications of the management attitude towards safety.

The licensee continued to communicate safety issues to the NRC staff in a timely, complete manner. Strong management involvement regarding a commitment to safety and resolution of complex safety issues was apparent. The licensee's audit and safety assessment programs identified meaningful program strengths and weaknesses which resulted in the licensee taking corrective actions.

2. Performance Rating

The licensee is considered to be in Performance Category 1 in this area.

3. Recommendations

a. NRC Actions

NRC inspection effort should be consistent with the fundamental inspection program.

b. Licensee Actions

The licensee should continue to provide high quality safety reviews and project a strong safety attitude to all plant personnel.

V. SUPPORTING DATA AND SUMMARIES

A. Licensee Activities

1. Major Outages

Unit 1 01/20/89 - 03/08/89 Bottom mounted instrumentation (BMI) measurement and generator repair

 08/04/89 - 10/15/89 First refueling outage

Unit 2 11/03/89 - 01/15/90 BMI measurement, maintenance, and repair of No. 22 diesel generator

2. Power Limitations

None

3. License Amendments

During the assessment period, there were nine operating license amendments for Unit 1 and three operating license amendments for Unit 2.

4. Significant Modifications

None

B. Direct Inspection and Review Activities

NRC inspection activity during this SALP cycle included 48 inspections performed with approximately 4,300 direct inspection hours expended.

C. Enforcement Activity

The SALP Board reviewed the enforcement history for the period January 1, 1989, through January 31, 1990. This review included deviations, violations, and emergency preparedness weaknesses and deficiencies tabulated by SALP Category.

D. Confirmation of Action Letters

None

TABLE
 ENFORCEMENT ACTIVITY
 (Includes Both STP-1 and STP-2)

FUNCTIONAL AREA	WEAKNESS	NO. OF VIOLATIONS IN EACH LEVEL				
		V	IV	III	II	I
A.	Plant Operations		2			
B.	Radiological Controls		1			
C.	Maintenance/ Surveillance		5			
D.	Emergency Preparedness	4				
E.	Security		5			
F.	Engineering/ Technical Support		7			
G.	Safety Assessment/ Quality Verification					
TOTALS		4	20			

UNITED STATES NUCLEAR REGULATORY COMMISSION
SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE
MEETING

HOUSTON LIGHTING & POWER COMPANY
SOUTH TEXAS PROJECT, UNITS 1 AND 2
JANUARY 1, 1989 - JANUARY 31, 1990

AT

SOUTH TEXAS PROJECT

APRIL 25, 1990

1 P.M.

AGENDA

INTRODUCTION

JOHN M. MONTGOMERY
DEPUTY REGIONAL
ADMINISTRATOR, NRC
REGION IV

SALP PRESENTATION

SAM COLLINS, DIRECTOR,
DIVISION OF REACTOR
PROJECTS, NRC REGION IV

HOUSTON LIGHTING & POWER COMPANY
RESPONSE AND COMMENTS

LICENSEE MANAGEMENT AND
STAFF

CLOSING REMARKS

JOHN M. MONTGOMERY

SALP PROGRAM OBJECTIVES

IMPROVE LICENSEE PERFORMANCE

PROVIDE A MECHANISM FOR FOCUSING ATTENTION
ON OVERALL LICENSEE MANAGEMENT EFFECTIVENESS

PROVIDE A BASIS FOR ALLOCATION OF NRC RESOURCES

IMPROVE NRC REGULATORY PROGRAM

PERFORMANCE ANALYSIS AREAS FOR SOUTH TEXAS PROJECT

1. PLANT OPERATIONS
2. RADIOLOGICAL CONTROLS
3. MAINTENANCE/SURVEILLANCE
4. EMERGENCY PREPAREDNESS
5. SECURITY
6. ENGINEERING/TECHNICAL SUPPORT
7. SAFETY ASSESSMENT/QUALITY VERIFICATION

EVALUATION CRITERIA

1. ASSURANCE OF QUALITY, INCLUDING MANAGEMENT INVOLVEMENT AND CONTROL
2. APPROACH TO IDENTIFICATION AND RESOLUTION OF TECHNICAL ISSUES FROM A SAFETY STANDPOINT
3. RESPONSIVENESS TO NRC INITIATIVES
4. ENFORCEMENT HISTORY
5. OPERATIONAL EVENTS (INCLUDING RESPONSE TO, ANALYSIS OF, REPORTING OF, AND CORRECTIVE ACTIONS FOR)
6. STAFFING (INCLUDING MANAGEMENT)
7. EFFECTIVENESS OF TRAINING AND QUALIFICATION PROGRAM

FUNCTIONAL AREA PERFORMANCE CATEGORY

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.

TRENDS WHERE USED:

IMPROVING: LICENSEE PERFORMANCE WAS DETERMINED TO BE
IMPROVING DURING THE ASSESSMENT PERIOD.

DECLINING: LICENSEE PERFORMANCE WAS DETERMINED TO BE
DECLINING DURING THE ASSESSMENT PERIOD AND THE LICENSEE
HAD NOT TAKEN MEANINGFUL STEPS TO ADDRESS THIS PATTERN.

STRENGTHS

- MANAGEMENT INVOLVEMENT AND WELL TRAINED, PROFESSIONAL OPERATIONS STAFF
- GOOD MAINTENANCE PROGRAMS OFFSET BY PERSONNEL ERRORS EARLY IN THE SALP PERIOD
- SIGNIFICANT PROGRESS IN IMPROVING THE SECURITY PROGRAM
- COMMITMENT TO SAFETY AND RESOLUTION OF COMPLEX SAFETY ISSUES

WEAKNESSES

- EMERGENCY PREPAREDNESS
 - TRAINING OF RESPONDERS
 - EQUIPMENT CONTROLS IN TSC

- ENGINEERING AND TECHNICAL SUPPORT
 - EQ FILE SYSTEM
 - SYSTEM ENGINEER TRAINING

PLANT OPERATIONS

CATEGORY 1

- PROFESSIONAL ATTITUDE BY PLANT OPERATIONS STAFF
- MANAGEMENT SUPPORT OF OPERATIONS STAFF
- MIDLOOP OPERATION WELL PLANNED
- PLANT RELIABILITY IMPROVEMENT PROGRAM
- EOP UPGRADE

RECOMMENDED LICENSEE ACTION

CONTINUE TO IMPROVE HOUSEKEEPING EFFORTS

RADIOLOGICAL CONTROLS

CATEGORY 2 (IMPROVING)

- LOW TURNOVER RATE
- WELL DEFINED TRAINING AND QUALIFICATION PROGRAM FOR
TECHNICIANS
- RADIOCHEMISTRY AND WATER CHEMISTRY PROGRAMS CHARACTERIZED
BY GOOD FACILITIES AND WELL IMPLEMENTED PROGRAMS

RECOMMENDED LICENSEE ACTION

- EFFORTS SHOULD BE CONSIDERED TO ENHANCE ALARA PROGRAM

MAINTENANCE/SURVEILLANCE

CATEGORY 1

- PREVENTIVE MAINTENANCE PROGRAM ENHANCEMENT PLAN
 - MORE FOCUSED PM PROGRAM
 - REDUCED PM DEFERRAL RATE
- EFFECTIVE WORK ORDER CONTROL SYSTEMS
- SURVEILLANCES
 - MISSED SURVEILLANCES EARLY IN SALP PERIOD
 - PROBLEM CORRECTED/SURVEILLANCE TESTS PERFORMED AS SCHEDULED
- STRONG RETEST PROGRAM

RECOMMENDED LICENSEE ACTIONS

CONTINUE MAINTENANCE AND SURVEILLANCE PROGRAM ENHANCEMENT ACTIVITIES

EMERGENCY PREPAREDNESS

CATEGORY 2

- WEAKNESSES IN EMERGENCY EXERCISE RESPONSE
 - UNDERESTIMATION OF OFFSITE DOSES
 - INABILITY TO PERFORM TIMELY AND EFFECTIVE PERSONNEL ACCOUNTABILITY
- WEAKNESSES IN OPERATIONAL READINESS
 - UNFAMILIARITY WITH DOSE ASSESSMENT AND EMERGENCY ACTION LEVELS BY RESPONDERS
 - LACK OF CONTROLS OVER EQUIPMENT AND SUPPLIES IN TSC
- EXCELLENT EMERGENCY RESPONSE FACILITIES, EQUIPMENT EXCLUDING TSC.
- DESPITE WEAKNESSES, LICENSEE DEMONSTRATES UNDERSTANDING AND CONTROL OF THE ISSUES

RECOMMENDED LICENSEE ACTION

- MANAGEMENT ATTENTION SHOULD CONSIDER IDENTIFIED WEAKNESSES AND A REVIEW OF CORRECTIVE ACTION PRIORITIZATION.

SECURITY

CATEGORY 1

- MANAGEMENT DEMONSTRATED A STRONG COMMITMENT TO SECURITY PROGRAM
- SECURITY MANAGEMENT STAFF IS PROFESSIONAL, KNOWLEDGEABLE, AND WELL ORGANIZED

RECOMMENDED LICENSEE ACTIONS

- MANAGEMENT SHOULD CONTINUE TO PROVIDE STRONG SUPPORT TO THE SECURITY PROGRAM

ENGINEERING AND TECHNICAL SUPPORT

CATEGORY 2

- ENGINEERING EFFORTS WERE WELL COORDINATED, HANDLED WITH STRONG ATTENTION TO PLANT SAFETY ISSUES, AND RESOLVED SIGNIFICANT TECHNICAL ISSUES.
- SUCCESSFUL OPERATOR TRAINING PROGRAM
- NO FORMALIZED TRAINING FOR SYSTEM ENGINEERS
- PROGRESS MADE IN CORRECTING SIMULATOR DEFICIENCIES
- IMPROVEMENT IN PROCUREMENT PROGRAM
- EQ FILE SYSTEM DIFFICULT TO USE

RECOMMENDED LICENSEE ACTIONS

- EFFORTS SHOULD BE MADE TO IMPROVE AND MAINTAIN RETRIEVABILITY AND ACCURACY OF EQ FILES AND TO RESOLVE QUESTIONS ON COMMERCIAL GRADE PROCUREMENTS.

SAFETY ASSESSMENT/QUALITY VERIFICATION

CATEGORY 1

- CONSERVATIVE APPROACH IN IMPLEMENTING 10 CFR 50.59 SCREENING CRITERIA
- RESPONSES TO NRC BULLETINS AND GENERIC LETTERS ARE TECHNICALLY COMPLETE AND TIMELY
- OVERALL EFFECTIVE PERFORMANCE BY THE NUCLEAR SAFETY REVIEW BOARD (NSRB), THE PLANT PORC, AND INDEPENDENT SAFETY ENGINEERING GROUP (ISEG)
- STRONG MANAGEMENT INVOLVEMENT REGARDING A COMMITMENT TO SAFETY AND RESOLUTION OF COMPLEX ISSUES

RECOMMENDED LICENSEE ACTIONS

- CONTINUE TO PROVIDE HIGH QUALITY SAFETY REVIEWS AND PROJECT A STRONG SAFETY ATTITUDE TO ALL PLANT PERSONNEL

SALP MEETING ATTENDEES

<u>Name</u>	<u>Affiliation</u>
C. Ayala	HL&P
W. Hamson	HL&P
R. Hernandez	HL&P
R. Munter	HL&P
W. Blair	HL&P
M. Carnley	HL&P
L. Giles	HL&P
G. Parkey	HL&P
W. Berry	HL&P
D. Sanchez	HL&P
R. Cawthorn	HL&P
M. Berg	HL&P
A. McIntyre	HL&P
D. Keating	HL&P
T. Jordan	HL&P
M. Wisenburg	HL&P
W. Randlett	HL&P
P. Appleby	HL&P
R. Balrom	HL&P
S. Dew	HL&P
W. Kinsey	HL&P
J. Green	HL&P
D. Bohner	HL&P
J. Westemeier	HL&P
G. Vaughn	HL&P
D. Hall	HL&P
M. McBurnett	HL&P
R. Chewing	HL&P
S. Rosen	HL&P
J. Loesch	HL&P
J. Lovell	HL&P
H. Bergendahl	HL&P
V. Albert	HL&P
B. O'Connell	HL&P
C. Walker	HL&P
D. Denver	HL&P
D. Leazar	HL&P
S. Shropshire	CPL
J. Theis	TX Dept. Health
T. LeTulle	Mayor of Bay City
J. Montgomery	NRC
S. Collins	NRC
F. Hebdon	NRC
J. Wiebe	NRC
J. Gilliland	NRC
G. Dick	NRC
J. Tapia	NRC
D. Persinko	NRC
H. Faulkner	NRC
R. Evans	NRC

The Light company

Houston Lighting & Power South Texas Project Electric Generating Station P. O. Box 289 Wadsworth, Texas 77483

May 9, 1990
ST-HL-AE-3450
File No.: G25

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

South Texas Project Electric Generating Station
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Systematic Assessment of Licensee Performance
Report: 90-06

Reference: Letter of April 3, 1990 from Robert D. Martin, NRC
Region IV, to D. P. Hall, HL&P, regarding the above
subject.

In the referenced letter the NRC provided an opportunity for
Houston Lighting & Power to comment on the Systematic Assessment
of Licensee Performance (SALP) Report numbered 90-06 for the
period of January 1, 1989 to January 31, 1990.

The SALP report and management meeting on April 25, 1990
provided a professional and useful evaluation of the South Texas
Project Electric Generating Station performance. Several areas
were identified where we could improve our performance, and we
are actively working on these areas. HL&P has no other comments
on the report.

If you should have any questions, please contact me at (713)
229-7253.



D. P. Hall
Group Vice President,
Nuclear

CAA/nl

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Houston Lighting & Power Company
South Texas Project Electric Generating Station

ST-HL-AE-3450
File No.: G25
Page 2

cc:

Regional Administrator, Region IV
Nuclear Regulatory Commission
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San Antonio, TX 78296

Revised 12/15/89

A1/008.N14

INSPECTOR'S REPORT

Office of Inspection and Enforcement

Jones, W.

By: WEP

Persinko, D.

J.I. Tapia, R.J. Evans, W. Jones

LICENSE NUMBER

TRANSACTION TYPE

DOCKET NO. 18 digits OR LICENSE NO. BY PRODUCT 13 digits

REPORT

NEXT INSP. DATE

Houston Lighting/Power

- I - INSERT
- M - MODIFY
- D - DELETE
- R - REPLACE

05000498
05000499

9006
9006

NO	SEQ	MO	YR
	A		
	B		
	C		
	D		

PERIOD OF INVESTIGATION - INSPECTION

INSPECTION PERFORMED BY

ORGANIZATION CODE OF REGION/HQ CONDUCTING ACTIVITY (See IEMC 0530 Manpower Reporting Weekly Manpower Reporting for Code)

FROM			TO		
MO	DAY	YR	MO	DAY	YR
01	01	89	01	31	90

- 1 - REGIONAL OFFICE STAFF
- 2 - RESIDENT INSPECTOR
- 3 - PERFORMANCE APPRAISAL TEAM

OTHER

REGION	DIVISION	BRANCH
4	2	2

REGIONAL ACTION (Check one box only)

TYPE OF ACTIVITY CONDUCTED (Check one box only)

- 1 - NRC FORM 501
- 2 - REGIONAL OFFICE LETTER

- 02 - SAFETY
- 03 - INCIDENT
- 04 - ENFORCEMENT
- 05 - MGMT AUDIT
- 06 - MGMT VISIT
- 07 - SPECIAL
- 08 - VENDOR
- 09 - MAT ACCT
- 10 - PLANT SEC
- 11 - INVENT VER
- 12 - SHIPMENT/EXPORT
- 13 - IMPORT
- 14 - INQUIRY
- 15 - INVESTIGATION

INSPECTION INVESTIGATION FINDINGS (Check one box only)

TOTAL NUMBER OF VIOLATIONS AND DEVIATIONS

ENFORCEMENT CONFERENCE HELD

REPORT CONTAIN 2790 INFORMATION

LETTER OR REPORT TRANSMITTAL DATE

A	B	C	D
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
1 - CLEAR			
2 - VIOLATION			
3 - DEVIATION			
4 - VIOLATION & DEVIATION			

A	B	C	D
0	0	0	0

1 - YES

A	B	C	D

1 - YES

NRC FORM 501 OR REG LETTER ISSUED			REPORT SENT TO HQ FOR ACTION		
MO	DAY	YR	MO	DAY	YR
04	03	90			

MODULE INFORMATION

MODULE INFORMATION

REC ORD	MODULE INFORMATION										REC ORD	MODULE INFORMATION												
	MODULE NUMBER INSP					MODULE REG FOLLOWUP						MODULE NUMBER INSP					MODULE REG FOLLOWUP							
TYPE	NUMBER	PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL	SEC	PRIORITY	DIRECT INSP. TIME EFFORT IN STAFF HOURS EXPENDED THIS INSPECTION	PERCENTAGE COMPLETED TO DATE	STATUS	PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL	SEC	PRIORITY	DIRECT INSP. TIME EFFORT IN STAFF HOURS EXPENDED THIS INSPECTION	PERCENTAGE COMPLETED TO DATE	STATUS	PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL	
B						A	10,2				B					A					B			
	STP SALP UNIT 1																							
B						A	10,1				B					A					B			
	STP SALP UNIT 2																							

UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON TEXAS 76011-8064



From: Mark A. Satorius, Project Engineer, Reactor Project Section D

To: [redacted]

Subject: Texas project, Pre-SALP Package

1. Attached is the handout for the STP Pre-SALP Board, scheduled for Tuesday, July 21, 1992 at 9:00 a.m. The 400/450 Bridge will be utilized for Teleconference with NRR and the Site.
2. The Board will discuss:
 - * Violations and LERs to determine which SALP functional area each should be grouped.
 - * Closeout of the SALP cycle 009 MIP.
 - * Creation of the Interim MIP for SALP cycle 010, which will be utilized for 10 to 12 weeks.
3. Included in the handout are:
 - * Copies of the present Interim MIP.
 - * Copies of the present Cycle 009 MIP.
 - * Attachments containing a synopsis of the inspection reports generated during Cycle 009, a brief summary of each report, and a proposed breakdown of violations and LERs by functional area.
 - * A schedule covering the SALP meeting, draft report release date, and public meeting with the licensee.
4. If you have any questions, call me at X141.

Distribution:

B. Beach	S. Black	J. Gagliardo
[redacted]	G. Dick	T. Stetka
[redacted]	L. Constable	I. Barnes
M. Satorius	S. Collins	J. Callan
J. Tapia	D. Chamberlain	J. Jaudon
R. Evans	J. Pellet	B. Murray
G. Guerra	T. Westerman	

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