ENCLOSURE 2

FINAL SALP REPORT

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

INSPECTION REPORT NUMBERS

50-302/92-21

FLORIDA POWER COMPANY

CRYSTAL RIVER UNIT 3

April 28, 1991 through August 22, 1992

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I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) program is an integrated NRC staff effort to collect available observations and data on a periodic basis and to evaluate licensee performance on the basis of this information. The program is supplemental to normal regulatory processes used to ensure compliance with NRC rules and regulations. It is intended to be sufficiently diagnostic to provide a rational basis for allocation of NRC resources and to provide meaningful feedback to licensee 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 September 30, 1992, to review the observations and data on performance, and to assess licensee performance in accordance with the guidance in NRC Manual Chapter NRC-0516, "Systematic Assessment of Licensee Performance". 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 Crystal River Unit 3 for the period April 28, 1991, through August 22, 1992.

The SALP Board for Crystal River was composed of:

A. F. Gibson, Director, Division of Reactor Safety, Region II (RII) (Chairman)
E. W. Merschoff, Director, Division of Reactor Projects (DRP), RII
J. P. Stohr, Director, Division of Radiation Safety and Safeguards, RII
M. V. Sinkule, Chief, Reactor Projects Branch 2, DRP, RII
R. J. Freudenberger, Acting Senior Resident Inspector, Crystal River, DRP, RII
H. N. Berkow, Director, Project Directorate II-2, Office of Nuclear Reactor Regulation (NRR)
H. Silver, Senior Project Manager, Project Directorate II-2-2, NRR

Attendees at SALP Board Meeting:

K. D. Landis, Chief, Project Section 2B, DRP, RII
R. P. Schin, Project Engineer, Project Section 2B, DRP, RII
A. R. Long, Project Engineer, Project Section 2B, DRP, RII
K. E. Perkins, Jr., Director, Division of Reactor Safety and Projects, Region V
F. Rinaldi, Project Engineer, Project Directorate II-2, NRR
H. L. Graves, Structural Engineer, Office of Nuclear Reactor Research

II. SUMMARY OF RESULTS

While Crystal River operated safely during this evaluation period, performance in the area of Plant Operations was inconsistent and was not as strong as during the previous SALP assessment period. Although operator performance during routine operations was good, weaknesses were noted in the control of special evolutions and response to off-normal conditions.

Performance in the area of Maintenance/Surveillance continued to be good. However, several maintenance activities performed during the mid-cycle outage contributed to complicating plant operation during startup evolutions.

Engineering/Technical Support area performance remained at a good level. The quality of technical support for operations and maintenance was inconsistent, but improvement was evident late in the evaluation period.

Superior performance continued in the areas of Security and Emergency Preparedness due to effective management involvement and support.

Performance in the area of Radiological Controls also remained generally excellent, but a decline in performance was indicated by work practice deficiencies during outages.

In the area of Safety Analysis/Quality Verification, performance remained at a good level. Although management responded well to major issues which were identified, the timely identification and correction of other problems was not as strong and was hampered by weak implementation of the problem report process.

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

III. CRITERIA

The evaluation criteria which were used to assess each functional area are described in detail in NRC Manual Chapter 0516, which can be found in the Public Document Room. Therefore, these criteria are not repeated here, but will be presented in detail at the public meeting to be held with licensee management.

IV. PERFORMANCE ANALYSIS

A. Plant Operations

1. Analysis

This functional area addresses the performance of activities directly related to operating the facility, as well as fire protection.

While Crystal River operated safely during this evaluation period, overall performance in Plant Operations declined relative to the previous assessment period. Operator performance during routine operations was good; however, on occasion, operators failed to require a sufficiently detailed review to properly control maintenance and surveillance evolutions and operator performance during responses to transient conditions was inconsistent. These factors contributed to plant events. Weaknesses in Control Room communications, command and control were noted during plant events.

Following operation for the first seven months of this SALP period without an automatic reactor trip, three trips occurred in close succession following the mid-cycle outage. Two of these reactor trips represented significant instances of inappropriate operator actions. The first reactor trip was the direct result of the failure of the operators to assure that the secondary systems had stabilized prior to focusing their attention on closing the main generator output breakers. In a second case, while a reactor coolant system pressure transient was in progress, High Pressure Injection failed to actuate when called upon because the actuation channels had been inappropriately bypassed.

An example of strong operator response to an event was the restoration of shutdown cooling following an inadvertent decay heat system isolation during surveillance testing in June 1992. Timely and prudent actions were taken to reduce the potential for personnel injury and equipment damage. For example, operators cleared equipment rooms prior to restarting the decay heat pump and allowed the motor operated decay heat isolation valve to stroke fully prior to reversing direction. Management and operators also performed well during an influx of seagrass into the intake structure in August 1991.

As discussed in further detail in the Maintenance/Surveillance section of this report, the majority of the operational events were associated with maintenance or surveillance activities. Three of the four reactor trips which occurred during the assessment period resulted from either equipment returned to service in a degraded condition following maintenance, or improper implementation of maintenance or surveillance activities.

Deficiencies occurred in Control Room communications, command and control during changing plant conditions and during plant events. Command and control was of particular concern during the December 1991 reactor coolant pressure transient and was assessed as weak. This was a

factor in the inappropriate bypass of Engineered Safeguards, which resulted in escalated enforcement and required significant corrective action. Also, inconsistent and informal communication was noted following the reactor trip in March 1992. However, communications, command, and control were good during routine operations. Alarms were announced, directions were repeated back, and shift supervisors maintained a detailed overview of evolutions in progress.

On occasion, failure of operators to require a thorough review contributed to operational events. In two instances, operators questioned the system impact of executing an infrequently performed portion of surveillance procedures under off-normal plant conditions, yet allowed the activity to continue without sufficient justification. In both cases, the procedures did not contain adequate information regarding performance of these evolutions under off-normal plant conditions. A reactor trip occurred after operators questioned the impact of adjusting the overpower trip setpoint with a failed nuclear instrumentation channel, but allowed the activity to proceed. In making this decision, the operators relied on training material, which later proved to be incorrect. The inadvertent isolation of the decay heat system in June 1992 occurred due to errors in the performance of an engineered safeguards actuation channel calibration. Operators again had questioned the activity prior to authorizing work, but did not recognize that the channel could be bypassed during the calibration or the fact that actions directed by the procedure would cause the decay heat isolation valve to close and isolate the system. A positive questioning attitude during initial review of the March 1992 reactor trip identified several potential equipment operation anomalies. However, post-trip analysis determined two of the potential anomalies to be normal equipment responses for the transient conditions.

Previous SALP assessments of Plant Operations discussed weaknesses in the area of procedure adherence and adequacy. During this SALP period, operator adherence to procedures implementing routine evolutions was improved. However, weak implementation of Annunciator Response Procedures was a contributing factor to the poor operator response to the December 8, 1991, reactor coolant system pressure transient. The weak implementation of Annunciator Response Procedures had also been noted during operator examinations in May 1992 and during the two previous examinations. Although all three SRO applicants passed the May 1992 exam, lack of use of Annunciator Response Procedures continued to be a weakness. The licensee took aggressive actions to improve the quality of the Annunciator Response Procedures, and emphasized their use. Also, an upgrade to the Emergency Operating Procedure set was underway at the end of the period.

The Control Room environment was professional and well controlled. Licensed and non-licensed operators maintained a professional demeanor and routinely demanded the same of other plant personnel working in the area. Shift turnovers consisted of individual face-to-face turnovers, followed by a crew briefing in the Control Room. The turnovers were comprehensive and enabled operators to maintain a detailed knowledge of

plant system status. A dedicated operations individual performed tracking and resolution of control board deficiencies, including out-of-service equipment, inoperable alarms, and inaccurate indications. The program was effective at focusing attention on the resolution and reduction of control board deficiencies. Control Room drawings were maintained to accurately reflect the current as-built condition of plant systems.

Operations staffing was sufficient to support normal and outage evolutions. A six-shift rotation for plant operators provided for training, staffing of a day shift support crew, and vacation coverage with occasional use of overtime, while maintaining crew continuity. Operating crews consisted of two Senior Reactor Operators, and two Reactor Operators in the Control Room. Additionally, above TS requirements, a Chief Nuclear Operator position, generally filled with a Reactor Operator, was dedicated to equipment clearance development and coordination. Control Room crews remained on a scheduled eight-hour shift, the support shift was scheduled for twelve-hour shifts, and some Operations personnel were rotated to perform outage related activities such as acting as Outage Shift Manager and performing system alignments. Personnel attrition within the Operations organization remained low. The majority of personnel departures were due to reassignments to plant support organizations at the facility. Operators were qualified and knowledgeable of plant systems.

Senior management aggressively pursued identification and resolution of deficiencies. A broad-based assessment of the three reactor trips that occurred following the mid-cycle outage was conducted to identify generic implications. Extensive operations-related corrective actions were developed based on the results of the assessment. These actions included the assessment and optimization of operating crew composition, team building training, the clarification and revision of the shift operating technical advisor role, and the planned establishment of a shift manager position.

Good plant management involvement and oversight were evident. Administrative Instructions were developed to address two operational issues involving outage scheduling and configuration control. A procedure to control and schedule safety system outages was issued to minimize outage time for equipment required by Technical Specifications, increase equipment availability, and reduce risk. Reactor Building configuration control following major outages was also improved. Each manager became accountable for closeout inspection of his assigned containment areas to ensure restoration to proper equipment configuration. Plant management also initiated a contractor assessment of the Appendix R Program. Emphasis of the assessment was placed on the safe/alternate shutdown aspects of Appendix R and the adequacy and suitability of the existing documentation to define the design basis of the program and facilitate maintenance of the approved design during plant changes.

Comprehensive shutdown risk management techniques were implemented during outages, with positive results. A Shutdown Risk Task Force was utilized to evaluate information gathered through industry operating experience. An Administrative Instruction placed controls on availability of systems and instrumentation critical to shutdown operations. As a result, the safety significance of the two inadvertent isolations of the decay heat removal system was minimized by redundant equipment which was available.

The fire protection program was implemented well. There were few instances which required fire brigade response. On two occasions, the fire brigade responded to electrical equipment failures that generated smoke. Fire brigade response was timely, and appropriate actions were taken in both cases. The licensee made progress in reducing the outstanding fire barrier breaches. The licensee carried out a timely and thorough initiation of compensatory measures in response to the information included in NRC Bulletin 92-01 "Failure of Thermo-Lag 330 Fire Barrier System to Maintain Cabling in Wide Cable Trays and Small Conduits Free from Fire Damage". Fire drills and critiques were effective in reemphasizing fire fighting techniques and identifying improvement opportunities. Fire suppression systems were well maintained. The control of transient combustibles was generally good.

Three violations were cited in the area of Plant Operations, including one Severity Level III.

2. Performance Rating

Category: 2

3. Recommendations

The Board notes a decline in operator performance during off-normal and transient plant conditions. The Board acknowledges the licensee's corrective actions and encourages continued management attention in this area.

B. Radiological Controls

1. Analysis

This functional area addresses those activities directly related to radiological controls and primary/secondary chemistry control.

Overall, performance in the area of radiological controls was excellent. The licensee's program to control and quantify radioactive effluents was effective, as were their programs for monitoring and controlling primary chemistry parameters and for transporting radioactive waste. However, a declining trend in radiation protection performance over the course of the SALP period was evidenced by work practice deficiencies during outages.

The radiation protection program adequately controlled external and internal exposure to the workers at the plant. No personnel exposure in excess of 10 CFR Part 20 limits occurred. The total personnel dose at the site for the SALP period was approximately 505 person-rem. There were two outages during the period. The first, a mid-cycle outage, occurred between October 11 and November 26, 1991, and resulted in a collective dose of about 77 person-rem. The second outage, for refueling (8R), occurred between April 30 and July 16, 1992, and resulted in a collective dose of about 398 person-rem.

Deficiencies in the As Low As Reasonably Achievable (ALARA) program, noted during the previous SALP period, were corrected. For example, ALARA staffing was increased and Health Physics (HP) was involved earlier in the planning process. Positive dose reduction initiatives this period included increased use of temporary shielding and mockup training.

The Radiation Protection staff was knowledgeable. Many of the staff had worked at the site for a number of years. Management continued to support the program by continually reviewing collective dose and approving ALARA initiatives such as the still video system for ALARA planning. The licensee had a comprehensive radiation protection training/retraining program which included an ALARA simulator.

The licensee effectively used engineering controls to reduce the use of respirators. Approximately 65% fewer respirators were issued this outage than during the last outage, with no measurable internal uptakes. A positive example of measures to control internal exposure was an innovative Reactor Head Ventilation System which allowed workers to perform their jobs without the need for respirators. Highly contaminated areas were contained to minimize the spread of airborne radioactivity.

Contamination controls were also effective in reducing the number of Personnel Contamination Events (PCEs). The addition of larger capacity Reactor Building air conditioning units increased worker comfort and reduced the number of PCEs due to sweat-through wicking. The 120 skin contaminations during the refueling outage slightly exceeded the outage goal of 110, but was a significant reduction relative to previous outages. The continued reduction of reclaimable contaminated areas of the plant was a continuing challenge, and contaminated areas varied from about 11% during outages to about 4% after the outage cleanup campaign.

Management set the original collective dose goal for the 8R refueling outage of 274 person-rem in the fall of 1991 prior to the availability of the detailed outage scope. This was overly optimistic and was exceeded by 46 person-rem for emergent work due to extension of the outage from 59 to 77 days and the increase in work scope. The final outage dose for the 8R outage was 398 person-rem. This met the revised outage dose goal of 420 person-rem. This outage dose was about 15% less than the 471 person-rem average dose of the last 4 refueling outages.

The calendar year 1991 collective dose was about 104 person-rem, and the 1992 dose through the end of June was about 429 person-rem.

A decrease in performance of the plant staff, including HP technicians, was noted during outages as compared to periods of normal operation, due to the greater work activity level and corresponding challenge to resources. Radiological work practices were noted to degrade during the mid-cycle outage, but management attention quickly improved conditions. However, later in the appraisal period, during the 8R outage, additional examples of problems with radiation work control practices were identified. There was a lack of HP technician aggressiveness in finding and correcting these types of problems. Examples included dirty step-off pads that had lost their stickiness, unnecessarily high radiation readings in a walkway, inadequate radiation surveys, and inconsistent marking of contaminated material. An unlocked high radiation door was found by the resident inspector and the same door was found unlocked by the licensee several weeks later. A violation was issued for ineffective corrective action.

A self-assessment of the Radiation Protection program was completed, distributed, and work was in progress to assign and correct identified items. The audit was detailed and in-depth.

The licensee's program to control and quantify radioactive effluents was effective. There were no significant changes in the amounts of effluents released from the site. The effluent radiation monitoring system was effectively maintained. However, one deviation was identified for failure to calibrate post-accident sample-flow monitors. The licensee was working to enhance the capabilities of the Post Accident Sampling System which continued to have maintenance problems.

Liquid and gaseous effluents for calendar year 1991 were well within the dose limits specified by the Technical Specifications and 10 CFR 20, Appendix B. The total body and organ doses for these effluents for 1991 were less than 2 percent of the 40 CFR 190 limits and were comparable to 1990 and 1989 doses.

The licensee's program for monitoring and controlling primary chemistry parameters was effective. Implementation of a Laboratory Information Management System enhanced the ability to monitor and trend chemistry data. The licensee effectively used primary chemistry data to quantify fuel leakage prior to shutdown for the refueling outage. Primary chemistry parameters were maintained within Technical Specification limits. Other primary and secondary chemistry parameters were generally maintained within administrative limits. For those parameters outside the administrative limits, timely corrections were made to return within limits. In addition, the licensee was in agreement with the radioisotopes analyzed as part of the confirmatory measurements program.

The program for transporting radioactive waste was effective, and the technicians who performed radioactive waste shipments performed their duties competently

Two violations and one deviation were identified .

2. Performance Rating

Category: 1 Trend: Declining

3. Recommendations

The Board noted a decline in performance associated with control of work practices during outages and recommends additional management attention in that area.

C. Maintenance/Surveillance

1. Analysis

This functional area addresses those activities related to equipment condition, maintenance, and surveillance testing.

Overall, performance in the area of Maintenance/Surveillance continued to be good. The licensee effectively addressed weaknesses identified during the last SALP period concerning the quality of maintenance procedures and the use of overtime. The scheduling of surveillance activities continued as a strength. Weaknesses were noted in maintenance-induced equipment failures, the control of troubleshooting activities, and the quality of infrequently performed portions of surveillance procedures.

The support of senior plant management produced improvement in maintenance performance. They actively participated in the development of methodologies to implement the Maintenance Rule through participation in the NUMARC Maintenance Working Group. They also planned to use Crystal River-3 to perform verification and validation of the NUMARC Industry Maintenance Rule Guideline. Management support was further demonstrated by the initiation of scheduled mid-cycle maintenance outages to improve plant reliability. The first outage of this type was performed during this assessment period. Major accomplishments during that outage included the successful completion of an integrated leak rate test of the reactor building and electrical systems upgrades.

In the previous SALP period, weaknesses in maintenance staffing levels and associated overtime were noted. During this assessment period, maintenance overtime was reduced, staffing levels remained unchanged and were adequate to improve the material condition of the plant and preserve a manageable maintenance backlog. The licensee converted several long-standing temporary electrician positions into full-time positions and increased the use of maintenance contractors. For example, contractors were used for maintenance on reactor coolant pumps, control rod drive mechanisms, valves, and for reactor vessel disassembly/reassembly during refueling. The licensee emphasized administrative controls to limit the use of maintenance overtime after

they found that the amount of overtime during the mid-cycle 8 outage contributed to operational problems following that outage.

Several operational problems following the mid-cycle 8 outage were caused by maintenance activities that had been performed during the outage. In three cases, equipment was returned to service in a degraded condition. The improperly stored reactor cavity canal seal plate and the mispositioned reactor cavity cooling fan discharge damper contributed to an overheating-related failure of nuclear power instrument NI-8, causing a forced outage. A missing part on the pressurizer spray valve led to the December 8, 1991, reactor coolant system pressure transient and subsequent reactor trip. There was no identified example of equipment returned to service in a degraded condition following the 1992 refueling outage.

During this SALP period, the material condition of the plant continued to improve. Licensee efforts such as the implementation of the "area owner" concept and required management inspections of assigned areas in the Reactor Building near the end of major outages were effective in identifying material deficiencies.

Housekeeping also improved; however, areas remained in good condition only with continued emphasis by plant management and special clean-up efforts. Personnel performing work occasionally left tools and other gear adrift in the plant and did not consistently employ good contamination control techniques.

The control of maintenance troubleshooting activities was inconsistent. A detailed troubleshooting plan was developed and potential impacts on plant operation were evaluated prior to initiating work on an inoperable control rod position indicator. However, no plan of action was developed prior to initiating troubleshooting activities on an emergency feedwater control valve or on an inoperable inverter. The troubleshooting activities on the failed inverter resulted in an inadvertent de-energization of both of the 4160 V Engineered Safeguards busses and a reactor trip in March 1992.

Maintenance procedure compliance problems were noted in the previous SALP report. Procedural compliance was improved during the current assessment period. There was one example of inadequate procedure compliance in the failure to implement a refueling maintenance procedure for the storage of the refueling canal seal plate.

A weakness in the quality of maintenance procedures was noted in the previous assessment period. The quality of maintenance procedures was improved during this period as demonstrated by minimal instances of impact on plant operation directly related to the quality of maintenance procedures.

There was generally good interface between maintenance and other plant organizations, particularly Systems Engineering. This was exemplified by the success associated with joint efforts on projects such as the

emergency diesel generator engine overhauls. The joint efforts identified preventive maintenance practices to be performed on the fuel rack components which significantly improved diesel generator fast start time. Another example was the use of a mock-up of the Reactor Building cooling fans for troubleshooting.

The program for diagnostic testing and surveillance of safety-related motor operated valves was satisfactory. Strengths included the involvement of knowledgeable personnel in program development and site implementation; conservative valve sizing and switch setting calculations; and implementation of a motor operated valve diagnostic testing pilot project. However, there were insufficient personnel allocated to complete implementation of the Generic Letter (GL) 89-10 program on schedule and the criteria for selecting valves for testing at design differential pressure was inconsistent with GL 89-10 philosophy. The licensee took effective actions to address these deficiencies, including the dedication of additional resources, revision of the program to perform design basis differential pressure tests on all motor operated valves which are capable of being tested, and prioritization of differential pressure testing for motor operated valves based on calculated operating margin. Sufficient progress with design basis differential pressure testing was accomplished during the refueling outage to support program completion within the GL 89-10 time-frame. However, a failed differential pressure test of an emergency feedwater block valve was not resolved in a timely manner.

The scheduling of surveillances continued to be a strength. Overall, surveillances were reliably performed. Surveillance data was promptly reviewed and records were easily retrievable. One missed surveillance was identified during the startup from the mid-cycle refueling outage.

Surveillance procedure compliance and quality were noted as problems in the previous SALP report. Procedural compliance was improved during the current assessment period, with no noted instances of inadequate compliance with surveillance or calibration procedures. However, surveillance procedure quality continued as an area of weakness. Inadequate procedures for surveillance and calibration activities contributed to two operational events. In one case, a reactor trip was caused by performing an overpower trip setpoint adjustment with a failed nuclear instrumentation channel. In another instance, an inadequate procedure for engineered safeguards channel calibrations resulted in the inadvertent isolation of the decay heat removal system. Observations of activities in progress identified deficiencies in the quality of procedures. A significant number of minor procedure deficiencies were identified and resolved during the performance of the activity instead of during procedure development or pre-job planning meetings. Examples occurred during testing of the motor operated steam admission valve to the turbine driven emergency feedwater pump, testing of the main steam safety valve setpoints, and adjustment of the "A" emergency diesel generator voltage regulator. These observations also noted deficiencies in the consistency and quality of pre-job briefings.

The Inservice Inspection (ISI) and nondestructive examination (NDE) programs were managed by the Reliability Centered Maintenance organization and implemented by contractors, using contractor personnel, procedures, and QA controls. An adequate ISI program was in place with requirements to ensure adequate qualification of personnel. ISI examination personnel were performing good examinations. Good NDE pipe welding and inspection programs were in place and functioning. Documentation of ISI NDE examinations was good. However, instances of inadequate implementing procedures and drawings and untimely corrective actions for problems were identified. Also, weaknesses existed in the programs relative to the lack of FPC detailed technical involvement in the ISI program, no FPC technical review of ISI NDE procedures, weak control of revisions to the weld list in the ISI plan, and poor implementation of an Owner's Group recommendation. Weaknesses in the limited scope and calculational methodologies utilized for the Generic Letter 89-08 Erosion/Corrosion program also existed.

Eight violations were cited in the area of Maintenance/Surveillance during this assessment period.

2. Performance Rating

Category: 2

3. Recommendations

None

D. Emergency Preparedness

1. Analysis

This functional area includes activities related to the Emergency Plan and its implementing procedures, support for and training of onsite and offsite emergency response organizations, and licensee performance during exercises and actual events.

During the assessment period, the licensee continued to maintain a good emergency response organization, and demonstrated an effective response capability for dealing with site emergency situations.

Management's support of and involvement in the emergency preparedness program was evident as the licensee maintained a state of readiness for effectively implementing the Emergency Plan. Program upgrades during the period included an increase in the site EP staff by one specialist position specifically dedicated to improving the state and local government interface, and an upgrade of EP supervisory authority to a higher management level. These changes enhanced the overall effectiveness of the EP program.

The onsite emergency preparedness staff continued to provide comprehensive EP training to meet training program commitments during

this assessment period. Offsite support agency training for fire, ambulance, rescue, hospital, and local law enforcement agencies was conducted in accordance with commitments in the Emergency Plan and agreement letters with assisting agencies. Specific licensee training initiatives during this assessment period included dose assessment team training, offsite communications training, and increased emphasis on emergency action levels and protective action recommendations in Emergency Coordinator training.

The licensee maintained its emergency response facilities and equipment in a state of readiness during the assessment period through system functional tests, communicator drills, facility walkdowns, and equipment inventories. Improvements in the emergency response facilities included an upgraded emergency news center near the Emergency Operations Facility, upgrade to offsite communications capability with the State in the Technical Support Center, and commitment of the Control Room Simulator for future exercises and training. Quality assurance audits of the EP program were performed using detailed audit plans. The audits were found to be independent and detailed in scope, and they provided a thorough review of emergency preparedness activities. Areas of concern identified in audits received appropriate management attention and resulted in corrective actions which were generally effective.

The licensee demonstrated an effective response capability for dealing with site emergency situations during its full state and local participation exercise. The exercise scenario was challenging and fully exercised the licensee's onsite and offsite emergency organizations. During this full participation exercise the licensee demonstrated the capability to implement the Emergency Plan and its implementing procedures, as well as to take suitable actions to mitigate the consequences of the accident scenario. Exercise strengths included the scenario, detailed and well organized post exercise critique, integrated state and licensee emergency response activities, and emergency facilities and equipment. Overall, the exercise demonstrated an effective capability to protect the public health and safety in the event of a radiological emergency, despite the identification of one exercise weakness when protective action recommendations were not in accordance with procedural specifications for the given conditions. The licensee has committed to undertake corrective action in this area.

During this assessment period, the licensee's Emergency Plan was implemented three times in response to events, twice at the Notification of Unusual Event (NOUE) level and once at the Alert level. In one NOUE and the one Alert declaration, the event classification was prompt and correct, and offsite authorities were notified in accordance with applicable requirements. However, on December 8, 1991, a delayed unusual event classification for "valid ECCS actuation with injection into the core" resulted in untimely reporting to both the NRC and State of Florida authorities.

One cited violation was identified during the assessment period.

2. Performance Rating

Category: 1

3. Recommendations

None

E. Security

1. Analysis

The Security functional area addresses those safeguards measures associated with the protection of the plant's safety-related vital equipment, and with the assurance that personnel with access to the vital areas and equipment are fit for duty.

Overall, site management continued to effectively support the security program, resulting in a high level of performance by its staff and contract security force.

Effective management support was evident throughout the assessment period. There was a reduction in errors by personnel performing regulatory tasks. Turnover rates and absenteeism were minimized. Security Officer vacancies were expeditiously filled. The licensee improved quality in its security program when it initiated a specialist concept for such required duties as access control, alarm station operation and alarm response. Additionally, during this SALP period, security shift supervisors were permanently assigned to a security shift, thus encouraging continuity under a "team" concept. A security systems engineer was assigned to support maintenance of security systems and electronics.

Thorough and intensive quality assurance audits and other self-inspections were conducted. The security contractor also performed a self-audit of its program and personnel. This audit found that it was meeting all requirements. The licensee continued to trend its Safeguards Event Reports, thus monitoring personnel and equipment failures. As a result of that effort the licensee identified problems with vital area door locks. The licensee corrected this problem by installing redesigned locks.

To reduce compensatory measures, the licensee performed a Security Barrier Upgrade. A security consultant with nuclear power security expertise in such upgrades was contracted to monitor this two-year effort. Additionally, new personal search equipment and enhanced camera assessment capabilities were implemented during this SALP period.

The licensee exceeded NRC training criteria in that all officers were requalified with their assigned handguns semi-annually. A prior SALP identified a weakness in tactical training. The licensee greatly improved its contingency response capability with the issuance of new

weaponry, more realistic training (tactical and other) and greater interface with offsite law enforcement authorities.

The two weaknesses in the Fitness For Duty Program identified in the previous SALP report were successfully corrected. The program now meets or exceeds NRC criteria.

No violations or deviations were identified in this area.

2. Performance Rating

Category: 1

3. Recommendations

None

E. Engineering/Technical Support

1. Analysis

This functional area addresses those activities associated with the design of plant modifications, engineering and technical support for operations, outages, maintenance, procurement, testing and surveillance, and operator training.

Overall, performance in the Engineering/Technical Support area was effective during this assessment period. Strong support was provided by corporate engineering, and engineering support of modifications and post-modification testing was effective. Examples of strong performance by Systems Engineering were noted, but this level of performance was not consistently maintained. Continuing problems with the quality of surveillance procedures reflected adversely on the engineering support of operational, maintenance, and surveillance activities.

Effective corporate engineering support was demonstrated by continuation of the strong Configuration Management Program, and by the expansion of the Electrical Calculation Enhancement Program (ECEP). In response both to the need to assure adequate system design and to prepare for an expected Electrical Distribution System Functional Inspection, the ECEP was expanded and carried down to the component level. This phase of the ECEP resulted in the identification and correction of low voltage at the emergency feedwater turbine steam inlet valves in worst-case conditions, as well as certain other safety-related components. Also, by the end of the SALP period, 44 of the specified 45 Enhanced Design Basis Documents (EDBDs) had been developed and issued. The remaining document was the plant security EDBD which was postponed to coincide with the replacement of the existing security system. Of the 44 issued EDBDs, 31 had been field validated. As a continuation of these efforts, the Topical Design Basis Document (TDBD) program was initiated to develop documents which provided both the licensing and the design bases of specific topics such as Appendix R and single failure criteria. Engineering had

begun the Appendix R fire protection TDBD for the pilot phase of the program with a scheduled completion later this year. In response to deficiencies in cable separation identified by an NRC maintenance team inspection during the previous SALP period, enhanced cable separation criteria were prepared by the licensee. Implementation is in progress. This was a comprehensive effort indicating effective management support for a significant engineering task.

Engineering support for outage-related modifications and associated work was also effective. Site and corporate engineering organizations initiated and developed design documentation for numerous modifications to enhance plant safety. Examples included control logic changes to the emergency diesel generator standby lubricating oil circulating pumps to prevent upper crankcase overfill, upgrades and replacement of MOVs in safety related systems, plant relay and breaker setting corrections to provide proper coordination, rework of power supplies to the main feedwater pumps to improve trip reduction and transient response, and the installation of major modifications during a mid-cycle maintenance outage to enhance the capability of the electrical distribution system. The licensee completed the installation of a new non-safety-related DC electrical distribution system and rearranged safety-related electrical loads to address station blackout and the future addition of a new additional source of offsite power. The modification work packages were acceptable, calculations were referenced, new parts and drawings identified, and post modification testing requirements listed. Post modification testing was effective. In two cases, testing identified high vibration in the auxiliary feedwater pump motor and a design oversight in the replacement of engineered safeguards block loading timer relays.

The quality of technical support for operations and maintenance provided by the Nuclear Plant Systems Engineering group was inconsistent. The role of the System Engineers continued to evolve toward long-range goals of increased day-to-day involvement and greater responsibility for the assigned systems. Although the group was adequately staffed with knowledgeable and experienced engineers, performance in root cause analysis and timely resolution of issues was inconsistent. In some cases, system engineers' attention to detail and commitment to quality resulted in timely resolution of equipment deficiencies or enhanced equipment operation. For example, numerous improvements to the EDG maintenance program have resulted in improved reliability of the system and a significant reduction in the fast start time. In other cases, such as the inadequate root cause analysis of repeated failures of pressurizer spray valve RCV-14, performance weaknesses were noted. Some System Engineers were not spending enough time on functions such as walkdowns of their systems, monitoring system performance, component failure analysis, post-maintenance testing development, and maintenance planning activities. The licensee identified this deficiency and attributed it to heavy workload burdens involving procedure reviews and development, and vendor technical information reviews. Management efforts to bring performance to a consistently high level have included revising the Systems Engineer Manual to more accurately reflect

management expectations, development of a "Systems Manager" concept for specific projects, and implementing brainstorming methodology for root cause analyses. Time-management studies to support further program improvement were ongoing.

Operator training remained effective. Nine of the ten candidates taking the Generic Fundamentals Exam Section passed. Two initial license examinations were administered with all ten candidates passing. The requalification program was evaluated as satisfactory based on the one requalification examination administered during this cycle. Fourteen of the fifteen operators evaluated (93.3%) passed the examination.

Two violations were identified in the Engineering/Technical support functional area.

2. Performance Rating

Category: 2 Trend: Improving

3. Recommendations

None

G. Safety Assessment/Quality Verification

1. Analysis

This functional area addresses the licensee's implementation of safety policies; license amendments and relief requests; responses to Generic Letters, Bulletins, and Information Notices; resolution of safety issues; safety review committee activities; and the use of feedback from self-assessment programs and activities.

During this assessment period, the licensee's overall performance in the area of Safety Assessment/Quality Verification continued to be good. Good management involvement in addressing restart issues was noted, but weaknesses were identified in the Problem Report process, surveillance procedures, and the thoroughness of licensing submittals to the NRC.

Senior management actively supported improvements in safety-related activities. One example was the initiation of a quality programs evaluation of an emergency feedwater system outage to identify methods for reducing safety system outage time. Another example was the active participation in the Technical Specification Improvement Program as the lead B&W plant. The licensee's participation contributed positively toward the issuance of the Standard Technical Specifications for B&W plants.

Senior management was also actively involved in safety decisions. One example occurred in December, 1991, following the third reactor trip after the restart from the mid-cycle maintenance outage. The Senior Vice President, Nuclear Operations, placed a hold on the restart of the

unit pending the completion of an evaluation of the safety aspects of the three trips and the completion of identified immediate corrective actions. The evaluation team was lead by the Vice President, Nuclear Production, and included knowledgeable plant personnel who were not directly involved in the three trips. In addition to actions to be completed prior to restart, the evaluation team identified comprehensive long term improvements in the areas of operations, maintenance, training, and engineering.

Identification and resolution of safety issues was hampered by a weakness in the Problem Report process. Problem Reports lacked event details, safety consequence evaluations, and root cause analyses. Problem reportability and safety significance determinations were not clear. One example resulted in weak corrective actions for a main steam line water hammer. The Problem Report was misplaced, the engineering evaluation was narrow in scope, and operating evolutions prior to the water hammer were not reviewed. In another example, a Problem Report was not generated to document loose body-to-valve cover nuts on a safety-related makeup system valve. In addition, there were conditions contrary to current licensee administrative controls which were not consistently documented and evaluated at a sufficiently low threshold to allow for the identification of program and/or personnel performance weaknesses prior to their becoming significant issues. The licensee implemented a precursor trending program late in the assessment period to address this issue.

Plant management took initiatives to improve safety. Examples are described in the Plant Operations section, including: the use of an outside contractor to identify needed improvements in the Appendix R fire protection program, improvements in the control of scheduling of safety system outages, and improvements in closeout inspection of the Reactor Building.

The Nuclear General Review Committee was reorganized. This reorganization was initiated by a self-assessment questionnaire which led to the development of organizational changes centered on subcommittee responsibilities based on functional expertise versus activities required by Technical Specifications. The changes resulted in enhanced capability to identify trends in plant performance in a timely manner.

The procedure review process (Qualified Reviewers and Plant Review Committee) and resultant quality of procedures was an area of weakness. The previous SALP report noted weaknesses in the technical review process for procedures and in the quality of maintenance procedures. It also noted improvements in prior weaknesses in the quality of operations and surveillance procedures. During this SALP period, deficiencies in surveillance and operating procedures contributed to several plant transients (as discussed in the Plant Operations and Maintenance/Surveillance sections). In response to the procedural weaknesses noted above, a special NRC inspection of procedures was conducted late in the SALP period. That inspection noted deficiencies

in certain maintenance procedures and the poor quality of annunciator response procedures. The NRC noted that the licensee was in the process of revising the annunciator response procedures.

The effectiveness of the Quality Assurance (QA) program was satisfactory. During the early part of this SALP period, QA program revisions and enhancements were implemented including QA procedural improvements, relocation of audit staff to the site, certification of surveillance personnel as QA auditors, and rotational assignments of QA and line personnel to provide plant experience and cross training. Several evaluations of Quality Programs performed late in the SALP period were noted to be responsive to current plant issues, were performed in a timely fashion, and identified substantive areas for improvement. These evaluations addressed an emergency feedwater system outage, reliability of decay heat removal capabilities during plant shutdown, and repetitive inadequate control of a locked gate to a high radiation area.

The licensee generally maintained a current awareness of industry issues and operating experience and took action in a conservative manner to ensure continued operation of the facility within its design basis. Examples were the resolution of seismic configuration requirements for safety related instrument racks and the use of conservative assumptions in the motor operated valve sizing and switch setting calculations.

The last SALP evaluation noted that the licensee had contracted for a course of instruction in improving the quality of submittals to the NRC. Although the quality of submittals was generally good during the current period, there were examples of lack of thoroughness: 1) The original Technical Specification change request regarding a change to the method for controlling reactor building sump pH in the recirculation mode was not complete and required considerable supplementing; and 2) During Refueling Outage 8, it became apparent to the licensee that certain commitments previously made regarding reactor building equipment relocations and environmental qualification of electrical equipment modifications could not be completed during that outage. Although helpful in other ways, the letter requesting NRC staff concurrence in those schedule changes did not fully explain the problem or justify continued operation without accomplishing the commitment.

No violations or deviations were identified in the area of safety analysis and quality verification.

2. <u>Performance Rating</u>

Category: 2

in certain maintenance procedures and the poor quality of annunciator response procedures. The NRC noted that the licensee was in the process of revising the annunciator response procedures.

The effectiveness of the Quality Assurance (QA) program was satisfactory. During the early part of this SALP period, QA program revisions and enhancements were implemented including QA procedural improvements, relocation of the audit staff to the site, certification of surveillance personnel as QA auditors, and rotational assignments of QA and line personnel to provide plant experience and cross-training. Several evaluations of Quality Programs performed late in the SALP period were noted to be responsive to current plant issues, were performed in a timely fashion, and identified substantive areas for improvement. These evaluations addressed an emergency feedwater system outage, reliability of decay heat removal capabilities during plant shutdown, and repetitive inadequate control of a locked gate to a high radiation area.

The licensee generally maintained a current awareness of industry issues and operating experience and took action in a conservative manner to ensure continued operation of the facility within its design basis. Examples were the resolution of seismic configuration requirements for safety related instrument racks, and the use of conservative assumptions in the motor operated valve sizing and switch setting calculations.

The last SALP evaluation noted that the licensee had contracted for a course of instruction in improving the quality of submittals to the NRC. Although the quality of submittals was generally good during the current period, there were several examples of lack of thoroughness: 1) The original Technical Specification change request regarding a change to the method for controlling Reactor Building sump pH in the recirculation mode was not complete and required considerable supplementing; 2) The initial response to Bulletin 88-08, prepared before this SALP period, although pro-active in the sense that it described FPC's reaction to a similar earlier problem, did not address the Bulletin specifically. FPC's response to Supplement 3 during this SALP period did do so, but yet another submittal was required to integrate all the responses into a fully understandable document; and 3) During Refueling Outage 8, it became apparent to the licensee that certain commitments previously made regarding reactor building equipment relocations and environmental qualification of electrical equipment modifications could not be completed during that outage. Although helpful in other ways, the letter requesting NRC staff concurrence in those schedule changes did not fully explain the problem or justify continued operation without accomplishing the commitment.

No violations or deviations were identified in the area of Safety Assessment/Quality Verification.

2. <u>Performance Rating</u>

Category: 2

3. Recommendations

Additional management attention is recommended in the area of the Problem Report program.

V. SUPPORTING DATA AND SUMMARIES

A. Licensee Activities

Crystal River-3 began and ended the assessment period in an operational mode.

During the period from May 1991 through September 1991, the plant operated nearly uneventfully. There were no automatic reactor trips. The only plant shutdown was as the result of a large influx of seagrass into the intake canal on August 12. A number of power reductions were experienced due to condenser leaks, grass buildups and repairs to the debris filter system, and maintenance of condensate pumps.

On October 4, 1991, control rod 1-8 was dropped during the monthly rod movement surveillance test as a result of a failed stator. Power was reduced to less than sixty percent in accordance with Technical Specifications. The plant continued to operate at less than sixty percent power until the mid-cycle outage, during which the stator was replaced.

On October 11, 1991, the unit was manually shutdown to begin the planned mid-cycle maintenance outage, which was completed in 41 days. Outage activities included installation of a non-ES battery, installation of air conditioning for the reactor building, RCP seal replacement, teardown inspection of both emergency diesel generators, and integrated leak rate testing.

On November 24, 1991, reactor startup from the mid-cycle outage commenced. Difficulties with quadrant power in excess of Technical Specifications limits were encountered, and two temporary waivers of compliance were processed to allow power increase so that the tilt could be corrected.

Three reactor trips occurred during startup following the mid-cycle outage (See paragraph F of this report). Crystal River was returned to the grid on December 17, 1991. The unit ran at 100 percent of full power until January 22, 1992, after which time power was reduced to 75 percent on several occasions to search for and repair water box leaks. A fourth reactor trip occurred on March 27, 1992. The plant was initially returned to 100 percent power, but power was subsequently reduced to 85 percent for waterbox repairs and then to 65 percent due to failure of a condensate pump controller.

On April 28, 1992, the plant was manually shutdown for the Cycle 8 refuel outage. Major outage activities included expanded steam generator

Eddy Current inspection and tube pulls, relocation of several instruments and valves located in the reactor building to above the maximum postulated post-accident flood level, installation of reactor building chillers, retubing the main condenser, installation of a trisodium phosphate basket in the Reactor Building, complete rebuild of the fourth reactor coolant pump, and upgrades of the control rod drive mechanisms.

Following the refueling outage, the plant was returned to the grid on July 16, 1992. After about ten days of reduced power operation for repairs, the plant operated at full power for the remainder of the assessment period.

B. Direct Inspection and Review Activities

In addition to the ongoing routine resident inspections, 28 additional inspections were performed at the Crystal River facility by NRC regional and headquarters staff, including the following three special inspections:

91-15	July 22 - August 16, 1991	Allegation Followup
92-01	January 6 - 10, 1992	MOV Team Inspection
92-201	March 23-27, 1992	Procurement and Commercial Grade Dedication Programs

C. Escalated Enforcement Activities

Orders:

None

Civil Penalties:

Escalated enforcement, with a $50,000 civil penalty, was issued on April 9, 1992 for the December 8, 1991, operator action to bypass part of the Engineered Safety Features Actuation System.

D. Licensee Conferences Held During Appraisal Period

July 22, 1991:	Meeting held at NRC RII office to allow the licensee to make a presentation on Quality Assurance.
September 19, 1991:	Meeting held at NRC headquarters to discuss current issues.
September 24, 1991:	Meeting held at NRC RII office for licensee presentation on shutdown risk management.
December 4, 1991:	Meeting held at NRC headquarters to discuss electrical separation criteria, criteria for

	small MSL break locations in the intermediate building, emergency diesel generator performance, and electrical calculation enhancements.
December 6, 1991:	Meeting held at NRC RII office for licensee presentation on Crystal River's Mid-Cycle Outage.
December 13, 1991:	Meeting held at NRC headquarters for licensee presentation on reactor trips of November 25, December 3 and December 8, 1991.
January 13, 1992:	Enforcement Conference held at the NRC Region II office regarding December 8, 1991, reactor trip and safety injection.
March 30, 1992:	Meeting held at NRC headquarters to discuss resolution of Decay Heat Pump issue of Bulletin 88-04.
May 7, 1992:	Meeting held at NRC headquarters to discuss the electrical aspects of the reactor trip of March 27, 1992.
May 27, 1992:	Enforcement Conference held in NRC RII office to discuss inadequate corrective action associated with MOV testing.
May 18, 1992:	Meeting held at NRC RII office for licensee presentation on self-assessment activities.
May 20, 1992:	Meeting held at the Florida Power and Light office in Juno Beach, Florida, to discuss issues of common interest related to St. Lucie and Turkey Point sites. The Crystal River Manager of Nuclear Licensing made a presentation on the Technical Specification Improvement Program.
June 17, 1992:	Meeting held at NRC RII office to discuss recent electrical problems.
August 12, 1992:	Meeting held at NRC RII office for licensee to present recap of refuel outage activities.

E. Confirmation of Action Letters

None

F. Reactor Trips and Forced Outages

Reactor Trips:

November 25, 1991: Reactor trip from loss of both main feed pumps. An indicated low level in the deaerating feed tank tripped the feed booster pumps and this caused the main feed pumps to trip.

December 3, 1991: Reactor trip during adjustment of the high flux trip setpoint with a failed nuclear instrumentation channel. Major factors contributing to the trip included inadequate operator training on the nuclear power instrumentation averager/auctioneer circuit, and an inadequate procedure for performing the setpoint adjustment under the existing off-normal conditions.

December 8, 1991: Reactor trip from low pressure due to a stuck-open pressurizer spray valve and a related failure of its position indication.

March 27, 1992: Reactor trip as a result of an inadvertent de-energization of both engineered safeguards busses due to interaction between a DC control power circuit and troubleshooting activities on a failed inverter.

Forced Outages:

August 12, 1991: The unit was taken off line due to an influx of seagrass into the intake canal.

December 3, 1991: The licensee commenced a reactor shutdown to investigate nuclear instrumentation and cavity cooling problems. However, during the shutdown process, the reactor tripped from 50 percent power as described above.

G. Review of Licensee Event Reports

For the assessment period, 30 Licensee Event Reports (LERs) were analyzed. The distribution of these events by cause as determined by the NRC staff was as follows:

Cause	Total
Component Failure	12
Design/Construction	8
Personnel	
- Operating Activity	1
- Maintenance Activity	0
- Test/Calibration Activity	4
- Other	5
Total	30

Notes:

1. With regard to the area of personnel, the NRC considers lack of procedures, inadequate procedures, and erroneous procedures to be classified as personnel error.

2. The above information was derived from a review of LERs performed by the NRC staff and may not completely coincide with the licensee's cause assignments.

H. Licensing Activities

During the assessment period, the staff completed 14 license amendments, one exemption, three reliefs, and 15 other licensing actions, including responses to Generic Letters and Bulletins.

I. Enforcement Activity

	Number of Deviations and Violations in Each Functional Area					
	Dev.	V	IV	III	II	I
Plant Operations			2	1		
Radiological Controls	1		2			
Maintenance/Surveillance			8			
Emergency Preparedness			1			
Security						
Engineering/Technical Support			2			
Safety Assessment/Quality Verification						
TOTALS	1		15	1		

ENCLOSURE 3

MEETING SUMMARY

A. A meeting was held at 9:00 a.m. on November 20, 1992, with Florida Power Corporation (FPC), at the Crystal River facility, to discuss the Systematic Assessment of Licensee Performance (SALP) Report. Slides presented at the meeting are provided in Enclosure.

B. NRC Attendees

S. D. Ebneter, Regional Administrator, Region II (RII)
A. F. Gibson, Director, Division of Reactor Safety, RII
M. V. Sinkule, Chief, Reactor Project Branch 2, Division of Reactor Projects, RII
H. N. Berkow, Director, Project Directorate II-2 (PD II-2), Office of Nuclear Reactor Regulation (NRR)
H. Silver, Project Manager, Crystal River, PD II-2, NRR

C. Licensee Attendees

A. J. Keesler, President, Florida Power Corporation
P. M. Beard, Jr., Senior Vice President, Nuclear Operations
G. L. Boldt, Vice President, Nuclear Production
W. L. Conklin, Jr., Director, Nuclear Operations Materials and Controls
P. F. McKee, Director Quality Programs
P. R. Tanquay, Director, Nuclear Operations Engineering and Projects
B. J. Hickle, Director, Plant Operations
R. E. Widell, Director, Site Support
L. C. Kelly, Director, Training
K. R. Wilson, Manager, Nuclear Licensing
E. E. Froats, Manager, Compliance
R. W. Davis, Manager, Nuclear Plant Maintenance
G. H. Halnon, Manager, Nuclear Plant Systems Engineering
W. M. Marshall, Manager, Nuclear Plant Operations
G. A. Longhouser, Nuclear Security Superintendent
J. D. Stephenson, Manager, Radiological Emergency Planning
S. G. Johnson, Nuclear Chemistry and Radiation Protection Superintendent

D. Local Official Attendees

Harlan Keaton, Manager, Environmental Radiation Control Program, State of Florida Office of Radiation Control

Bill Kicklighter, Assistant Emergency Operations Director, Citrus County Sheriff's Department

Jim Soukup, Emergency Operations Director, Citrus County Sheriff's Department

William Hunt, Radiological Emergency Planning Coordinator, Citrus County Sheriff's Department

ENCLOSURE 4

UNITED STATES NUCLEAR REGULATORY COMMISSION

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE (SALP)

FLORIDA POWER CORPORATION

SALP CYCLE 10

APRIL 28, 1991
THROUGH
AUGUST 22, 1992

CRYSTAL RIVER UNIT 3

NOVEMBER 20, 1992

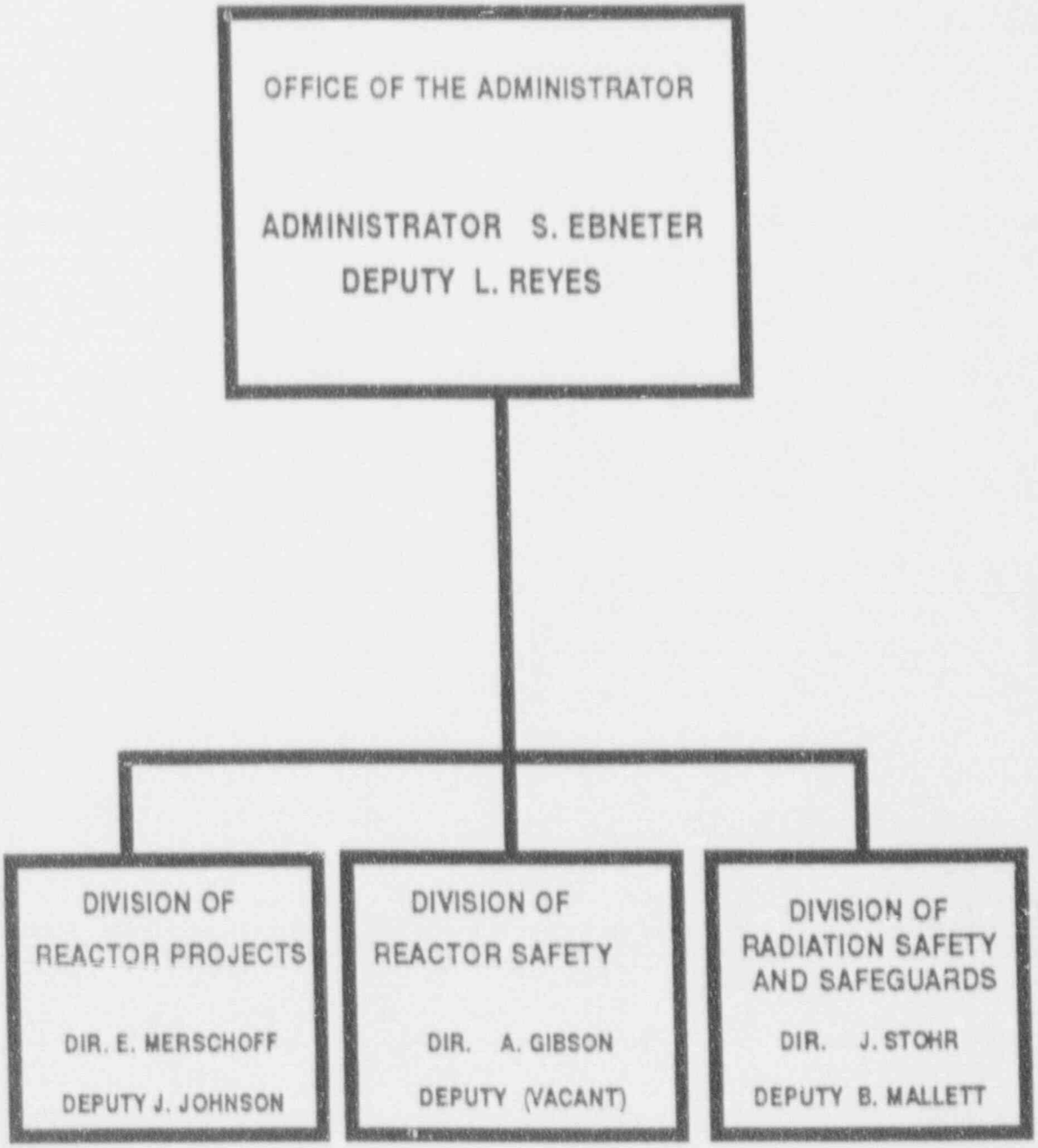
SALP PROGRAM OBJECTIVES

1. IDENTIFY TRENDS IN LICENSEE PERFORMANCE

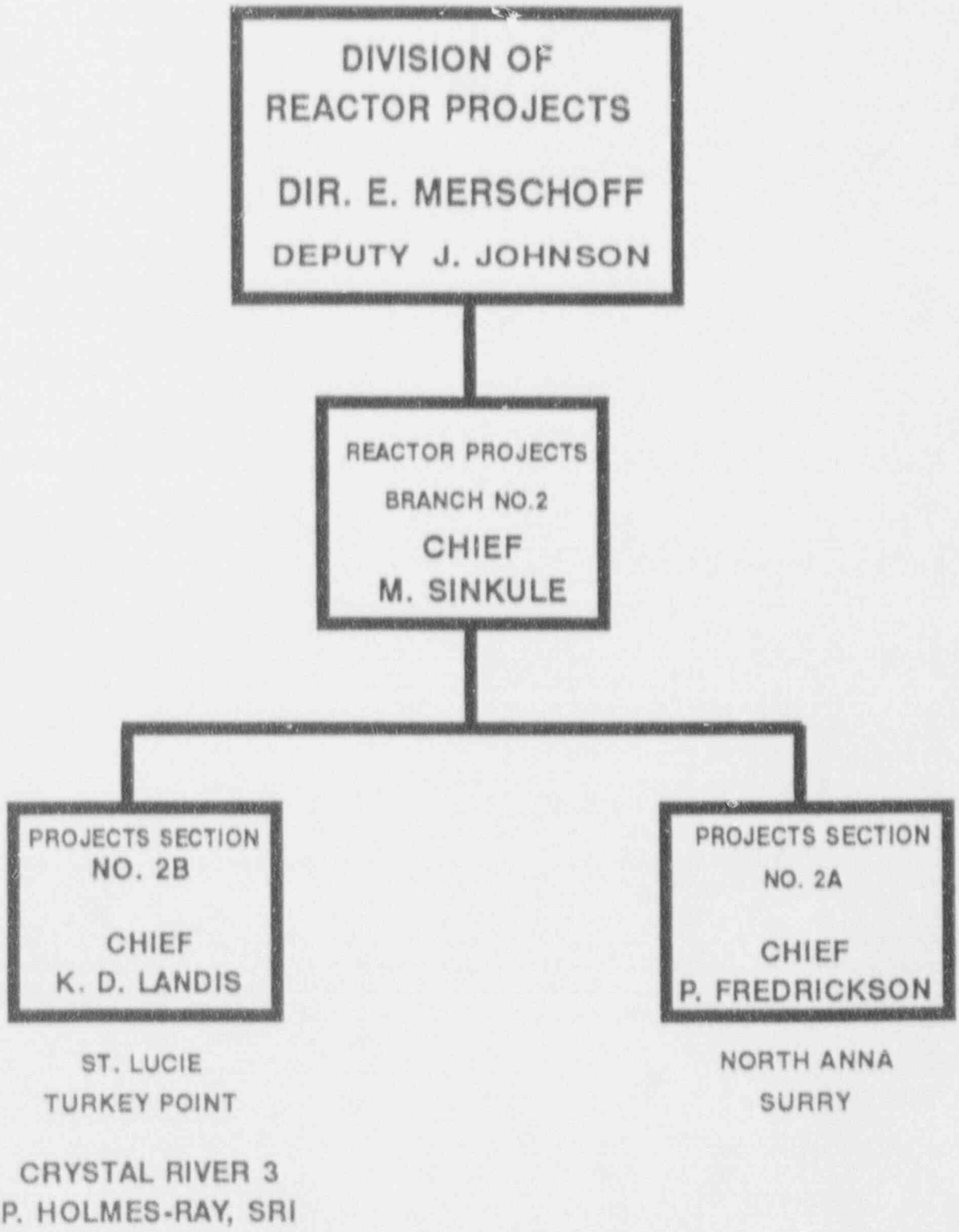
2. PROVIDE A BASIS FOR ALLOCATION OF NRC RESOURCES

3. IMPROVE NRC REGULATORY PROGRAM

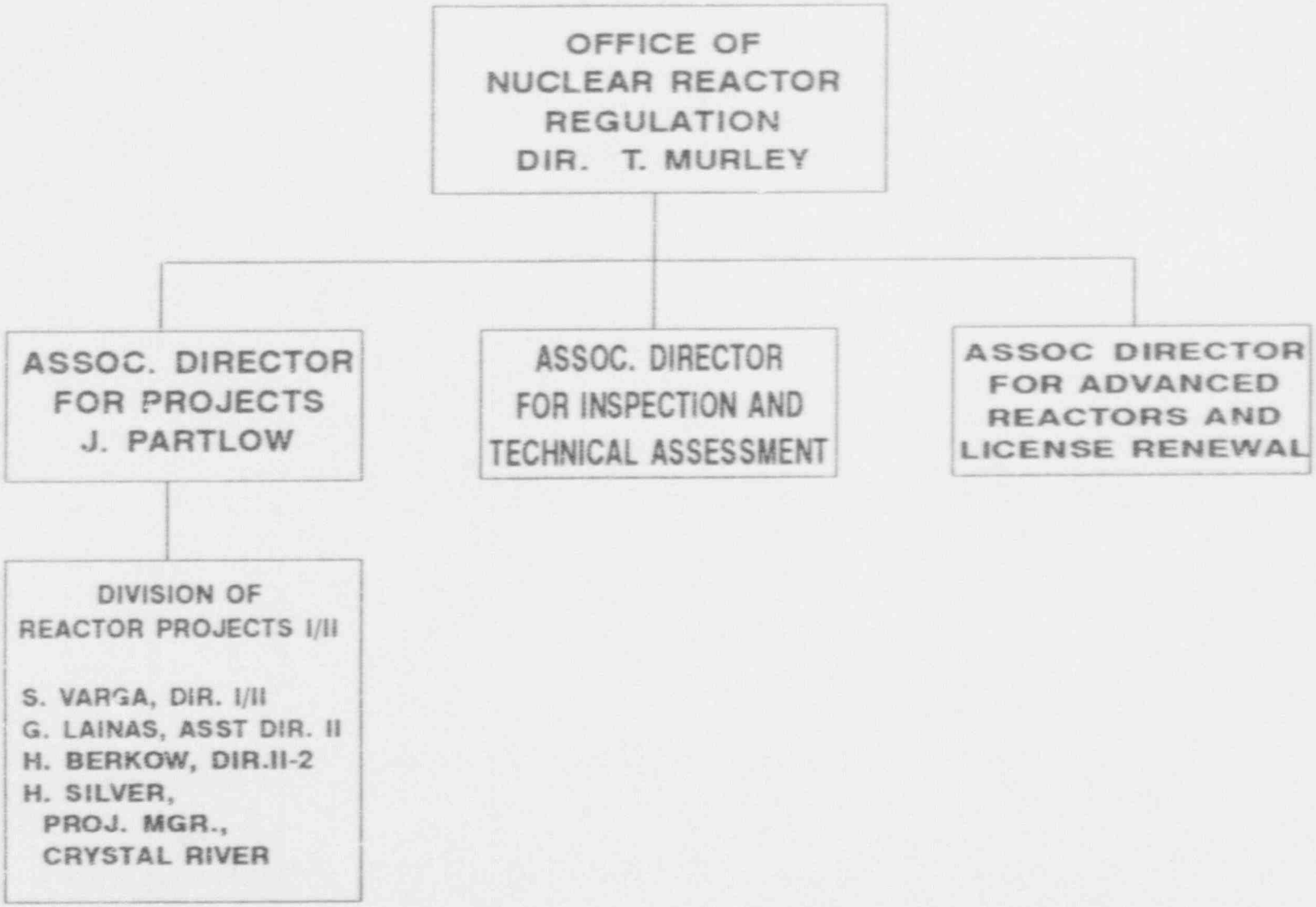
REGION II ORGANIZATION



DIVISION OF REACTOR PROJECTS ORGANIZATION



NRR ORGANIZATION



PERFORMANCE ANALYSIS AREAS FOR OPERATING REACTORS

A. PLANT OPERATIONS

B. RADIOLOGICAL CONTROLS

C. MAINTENANCE/SURVEILLANCE

D. EMERGENCY PREPAREDNESS

E. SECURITY

F. ENGINEERING/TECHNICAL SUPPORT

G. SAFETY ASSESSMENT/QUALITY VERIFICATION

AREA PERFORMANCE

CATEGORY 1

LICENSEE MANAGEMENT ATTENTION TO AND INVOLVEMENT IN NUCLEAR SAFETY OR SAFEGUARDS ACTIVITIES RESULTED IN A SUPERIOR LEVEL OF PERFORMANCE. NRC WILL CONSIDER REDUCED LEVELS OF INSPECTION EFFORT.

AREA PERFORMANCE

CATEGORY 2

LICENSEE MANAGEMENT ATTENTION TO AND INVOLVEMENT IN NUCLEAR SAFETY OR SAFEGUARDS ACTIVITIES RESULTED IN A GOOD LEVEL OF PERFORMANCE. NRC WILL CONSIDER MAINTAINING NORMAL LEVELS OF INSPECTION EFFORT.

AREA PERFORMANCE

CATEGORY 3

LICENSEE MANAGEMENT ATTENTION TO AND INVOLVEMENT IN NUCLEAR SAFETY OR SAFEGUARDS ACTIVITIES RESULTED IN AN ACCEPTABLE LEVEL OF PERFORMANCE; HOWEVER, BECAUSE OF THE NRC'S CONCERN THAT A DECREASE IN PERFORMANCE MAY APPROACH OR REACH AN UNACCEPTABLE LEVEL, NRC WILL CONSIDER INCREASED LEVELS OF INSPECTION EFFORT.

EVALUATION CRITERIA

1. MANAGEMENT INVOLVEMENT AND CONTROL IN ASSURING QUALITY

2. APPROACH TO IDENTIFICATION AND RESOLUTION OF TECHNICAL ISSUES FROM A SAFETY STANDPOINT

3. ENFORCEMENT HISTORY

4. REPORTING, ANALYSIS AND CORRECTIVE ACTION OF REPORTABLE EVENTS

5. STAFFING (INCLUDING MANAGEMENT)

6. TRAINING EFFECTIVENESS AND QUALIFICATION

PLANT OPERATIONS

(CATEGORY 2)

STRENGTHS

- MANAGEMENT SUPPORT
- RISK MANAGEMENT
- ROUTINE OPERATIONS
- FIRE PROTECTION

CHALLENGES

- EVENT RESPONSE
- OPERATOR REVIEW OF PLANNED ACTIVITIES
- ATTENTION TO DETAIL

PLANT OPERATIONS

(CATEGORY 2)

RECOMMENDATIONS:

- The Board notes a decline in operator performance during off-normal and transient plant conditions. The Board acknowledges the licensee's corrective actions and encourages continued management attention in this area.

RADIOLOGICAL CONTROL

(CATEGORY 1 - DECLINING TREND)

STRENGTHS

- CONTROL OF RADIATION EXPOSURE
- CONTAMINATION CONTROL
- WASTE MANAGEMENT
- CHEMISTRY CONTROL
- CORRECTIVE ACTIONS

CHALLENGE

- OUTAGE WORK PRACTICES

RADIOLOGICAL CONTROL

(CATEGORY 1 - DECLINING TREND)

RECOMMENDATIONS:

- The Board notes a decline in performance associated with control of work practices during outages and recommends that additional management attention in that area may be warranted.

MAINTENANCE/ SURVEILLANCE (CATEGORY 2)

STRENGTHS

- MANAGEMENT SUPPORT
- CORRECTIVE ACTIONS
- SCHEDULING
- HOUSEKEEPING/MATERIAL CONDITION

CHALLENGES

- MAINTENANCE WORK QUALITY
- SURVEILLANCE PROCEDURES
- ISI

EMERGENCY PREPAREDNESS

(CATEGORY 1)

STRENGTHS

- ORGANIZATION AND STAFFING
- TRAINING
- FACILITIES AND EQUIPMENT
- PLAN IMPLEMENTATION
- SELF - ASSESSMENT

CHALLENGES

- CONTINUED MANAGEMENT SUPPORT

SECURITY

(CATEGORY 1)

STRENGTHS

- FACILITIES AND EQUIPMENT
- TRAINING
- SELF - ASSESSMENT/ CORRECTIVE ACTION
- MANAGEMENT SUPPORT

CHALLENGES

- CONTINUED MANAGEMENT SUPPORT

ENGINEERING/ TECHNICAL SUPPORT

(CATEGORY 2 - IMPROVING TREND)

STRENGTHS

- CORPORATE SUPPORT
- MODIFICATION DESIGN
- OPERATOR TRAINING

CHALLENGES

- SUPPORT TO OPERATIONS AND MAINTENANCE

SAFETY ASSESSMENT/ QUALITY VERIFICATION (CATEGORY 2)

STRENGTHS

- MANAGEMENT INVOLVEMENT
- SAFETY INITIATIVES
- QUALITY PROGRAM PERFORMANCE
- SELF - ASSESSMENT

CHALLENGES

- PROBLEM REPORT PROCESS
- CORRECTIVE ACTIONS

SAFETY ASSESSMENT/ QUALITY VERIFICATION (CATEGORY 2)

RECOMMENDATIONS:

- Additional management attention is recommended in the area of the Problem Report program.

ENCLOSURE 5

93 JAN 5 P3:16

Florida Power
CORPORATION

January 4, 1993
3F0193-01

Mr. Stewart D. Ebneter
Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Atlanta, Ga 30323

Subject: Inspection Report No. 92-21
Systematic Assessment of Licensee Performance (SALP)

Dear Sir:

Florida Power Corporation (FPC) provides this letter as a response to the subject inspection report and your presentation of the report at Crystal River Unit 3 on November 20, 1992. While we are generally in agreement with the overall rating in each of the areas, our perspective on trends in some areas and on some of the specific observations differ from the report as discussed in the meeting and as reflected in the comments below. We believe that the overall posture of our nuclear organization, including management structure, programs, procedures, personnel attitude and culture, and the material condition of the plant, is improved compared to the end of the previous SALP period. Nonetheless, we recognize the need to continue to strive for improved performance and will do so including addressing the deficient areas noted in the report.

Your presentation was effective and the dialogue during the meeting was beneficial in giving us a better understanding of your views on Crystal River Unit 3 performance. We recommend that the format used in the verbal presentation (i.e., a summary of key strengths and items for improvement by SALP area) be used also in the written text of future SALP reports. Having such a summary at the beginning of each area in the report would provide a better perspective for the subsequent specific comments. Also, we recommend that the specific comments in each area be presented such that favorable comments are grouped together separately from comments that reflect deficiencies in performance.

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In addition, the meaning of a performance "trend" (i.e., declining or improving) needs to be clarified. During the meeting, it was stated that a trend, when noted, referred to performance during the SALP period (which, if continued, would likely lead to a different rating in the subsequent SALP period). However, on page three of the report, it is stated that "Plant Operations declined relative to the previous assessment period". This is a different meaning of trend. It is recommended that trend only be used in this latter context and that this meaning be explained in all SALP reports.

The following are specific comments on selected areas of the report:

Plant Operations: FPC recognizes the decline in plant operations. We have taken actions that will improve the areas that showed a decline and will further strengthen the other areas. These actions are based primarily on the assessment performed following the three reactor trips after the mid-cycle outage; however, monitoring and assessment have continued and further actions have been identified. Two of the most significant actions taken are implementation of the shift manager concept (three individuals are currently performing this role); and the placement of Operations Technical Advisors on shift rotation. The remaining two shift manager positions should be filled by mid 1993 with successful completion of SRO licensing. We will schedule further discussions with you on operations in the near future.

Radiological Controls: The "declining" trend noted for this area does not appear to be supported by the analysis provided. We have had follow-up discussions with your staff and understand the basis for the assignment of this trend. We agree that the practices of our radiation workers can be enhanced, but do not consider overall radiological controls performance to have declined. In balance, the inclusion of both a midcycle outage and a refueling outage in the same SALP period should be given due consideration relative to the noted deficiencies and their significance. Also, we believe credit should have been given in the report for our efforts and results achieved in improving fuel integrity. Efforts to create an enhanced radiation worker training program have been under way since the last refuel outage. The initial step of this program is aimed at enhancing our radiation worker's plant specific knowledge of radiological work practices. In addition, we will focus on strengthening the involvement of plant line management in establishing and implementing ALARA goals.

Maintenance/Surveillance: FPC considers the trend of performance in the maintenance area to be improving over this SALP period. In addition to the favorable comments in the report, significant progress was made in the scheduling and planning of maintenance work, work controls, and measuring maintenance effectiveness. Also, as you are aware, we made several organizational changes which included maintenance as a key area of focus

for continued improvement. We believe these changes will also contribute to improvement in the Surveillance and ISI areas.

FPC does not agree that significant weaknesses in scope and in analytical technique exist in CR-3's Erosion/Corrosion (E/C) program. We consider the CR-3 approach to be comprehensive. The program utilizes V. H. Keller's empirical relationships for the purpose of developing relative rankings in large bore susceptible piping systems. Program inspections are based on these line susceptibility rankings, previous line inspection data, industry reports, engineering judgement, and plant maintenance history. In addition, numerous system improvements have been accomplished resulting in reduced wall thinning rates. These include piping material upgrades, feedwater pH increases, and amine changes (ammonia to morpholine). The culmination of all of these factors provides the basis for a strong E/C program. They also contribute toward CR-3 being considered a low susceptibility facility, thus a correspondingly low inspection base requirement, when compared to other PWRs. EPRI's working group (CHUG) concurs that all of these components are necessary for establishing an effective E/C program. FPC is closely monitoring the ongoing improvements of other analytical methods, such as the EPRI CHECMATE software, with plans to enhance the current E/C approach with supplemental analysis when the validation effort for this research grade software is complete.

Safety Assessment/Quality Verification: We believe the trend in performance in this area was improving over the SALP period and as reflected in the comments in the report. Weaknesses in the Problem Report process, surveillance procedures and licensing submittals appear to have been given more weight than warranted. FPC made enhancements to the Problem Report process during this SALP period but recognizes that further improvement is needed. Activities have begun to address the identified issues. With regard to quality and thoroughness of NRC submittals, FPC does not consider it unusual or indicative of a lack of thoroughness when questions arise on submittals. Many submittals address highly technical issues where increased amounts of written information do not necessarily ensure there will not be further questions. We do not believe the first and third examples of submittals noted in the report are indicative of a lack of thoroughness and the second example was inappropriate since the referenced submittal did not occur during this SALP period. However, we will continue to strive to provide a sound basis for all the items we request the NRC to review and plan to keep requests for supplemental information to a minimum.

In conclusion, we appreciate the opportunity to share our views on the SALP report and the SALP process. FPC places a high priority on maintaining and strengthening the communications established with all levels of the NRC. We look forward to future meetings with NRC Region and Headquarters management and consider these meetings an essential element in the overall success of our nuclear program.

Sincerely,

P. M. Beard, Jr.
Senior Vice President
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RLM:mag

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