
SOUTH TEXAS PROJECT

HL&P OPERATIONAL READINESS PLAN

Revision 0



SERVICE, TEAMWORK, PRIDE

South Texas Project
Electric Generating Station
OPERATIONAL READINESS PLAN
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Operational Readiness Plan Action Summary

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OPERATIONAL READINESS PLAN

I. Introduction and Purpose

South Texas Project (STP) Units 1 & 2 were removed from service by Houston Lighting & Power (HL&P) in February, 1993, because of continuing problems with the Turbine Driven Auxiliary Feedwater Pumps. HL&P committed not to resume power operation until the problems had been corrected. On February 5, 1993, the Nuclear Regulatory Commission (NRC) acknowledged this commitment by issuing a Confirmatory Action Letter. Subsequently, in April, 1993, STP was the subject of a NRC Diagnostic Evaluation. To support resumption of power operation and to fully address issues identified by station personnel and the NRC, STP is responding in two phases. First is this Operational Readiness Plan which describes the actions HL&P is taking to improve STP hardware, programs, and personnel performance prior to the safe and reliable resumption of power operation. The second step will be the finalization of the STP Business Plan which will address the longer term actions being taken to ensure the root causes of STP's performance problems are corrected.

STP has initiated a number of actions to improve the station's overall material condition, to improve the allocation and quality of personnel resources and to improve overall management effectiveness. These actions are described in this plan. Specifically, this Operational Readiness Plan describes:

- 1) the processes by which readiness to resume power operation will be assessed;
- 2) the methods that will be used during startup and power ascension to return the units to service safely and reliably;
- 3) the initiatives underway to improve management effectiveness, problem identification, plant operations, and the material condition of the facility.

The majority of issues addressed in this plan require action prior to returning either unit to service and include actions to address issues described in the NRC's Confirmatory Action Letter of February 5, 1993 and its May 7, 1993 supplement, selected items from the NRC Diagnostic Evaluation Report (DER) of June 10, 1993, and assessments and reviews conducted by STP management.

STP management has identified a number of issues that will be addressed to achieve long-term improvements at STP, including a number of issues described in the DER. In order to assure sustained focus on long-term improvements, activities in the Operational Readiness Plan which require further action beyond the time of resumption of power operation are also addressed in the STP Business Plan.

STP management will be deliberate and conservative in implementing the Operational Readiness Plan and will not return either unit to service until it is satisfied that the unit can be returned to power and operated safely and reliably over the long-term. It should be noted that a number of the specific criteria and procedures contemplated by this plan are under development and will evolve over time. The NRC will be kept informed of progress in the development of these procedures and the implementation of this plan through regularly scheduled status meetings and as appropriate, through the Senior Resident Inspector's Office.

II. Integrated Schedule for Resumption of Power Operation

A logic based, resource levelized, critical path schedule is being used to manage the activities to return Unit 1 to power operations. This schedule addresses current outage activities, core reload, and the ascension from Mode 5 to full power operation. This schedule displays significant outage activities, applicable test activities, appropriate readiness assessments, management evaluation periods and decision points. A milestone schedule of the above activities is provided as Figures 1 and 2. Specific detailed (Level 2) schedules to support these milestones are under development. These schedules are expected to be completed in September 1993. Periodic updates of these schedules will be made available to the NRC.

Maintenance activities are controlled by the Operations Work Control Group (OWCG) established during the recent changes to the STP work control process. This group is headed by a Senior Reactor Operator (SRO) and is staffed with qualified personnel from other functional areas. Outage Management provides 24-hour coverage to support outage activities and schedule changes. OWCG and Outage Management work closely to resolve work, schedule and resource issues.

Power ascension will be coordinated by Power Ascension Test Sponsors who will report directly to the Plant Manager. Additionally, Senior Shift Managers will provide continuous management representation and presence during selected evolutions throughout the power ascension program. The Senior Shift Manager's primary function will be to ensure that the exercise of command and control authority of licensed operators is not diluted by the increased level of activities. The Senior Shift Manager will also be responsible for assessing the conduct of Operations, Maintenance and other support groups. The basic structure of the operating organization during power ascension is shown in Figure 3.

III. Material Condition and Equipment Readiness

This section describes the process to certify key systems as being ready for operation, maintenance backlogs, engineering backlogs, and specific hardware issues.

A. System Certification Program

The South Texas Project is using a process involving station personnel from appropriate technical disciplines to certify plant systems or components important to safety or that have had performance problems in the past. This process will be essential to demonstrating the operational readiness of the plant. Material readiness of the plant systems or components will be compared to objectives and measurable criteria throughout the process.

The selection methodology for including systems or portions of systems in the certification process will be based on criteria established by plant staff and engineering personnel. The important elements of the criteria include:

- Use of Probabilistic Risk Assessment tools
- Use of a Failure Mode Analysis on systems that could cause plant trips
- Defining systems with known past performance deficiencies

As an initial step in the selection process, meetings were held with Senior Reactor Operators, Non-licensed Operators, personnel from Mechanical, Electrical, and I&C Maintenance, Outage Management, Planning, System Engineering, Risk and Reliability Engineering, and STP Management. These meetings were used to identify systems to be included in the certification process. All systems were reviewed. A preliminary set of key systems, subsystems, and components has been developed. The final certification population and the selection process will be documented in an Engineering Report.

The certification and acceptance process will be procedurally controlled and documented by two procedures. One procedure will require a comprehensive package that demonstrates that each selected system or subsystem has been adequately reviewed and that any outstanding items have been appropriately evaluated and dispositioned prior to start up. A second procedure will be developed that will require a comprehensive walkdown followed by acceptance of the system by the Plant Manager prior to resumption of power operation. The system readiness concept will be carried through to the completion of power ascension testing by assuring that systems are ready for identified plateaus. Feedback from system operating experience during this period will be used to redirect any necessary Engineering or Maintenance actions to resolve system performance deficiencies or execute other corrective measures.

As part of the initial development of this certification effort, South Texas Project managers have conducted site visits to Carolina Power & Light Company's Brunswick Nuclear Project (BNP). The trip was to review the methodology used in their recent successful startup and evaluate its potential for applicability to South Texas.

In addition, during the July, 1993, Unit 1 heatup to Mode 3 for plant testing, STP conducted pilot walkdowns, using existing system walkdown criteria, for the Auxiliary Feedwater and Essential Cooling Water systems. The results of the pilot effort were favorable and the experience gained is being used in developing the STP system certification program.

B. Maintenance Backlog Management

1. General

A comprehensive review of the maintenance backlog has been initiated and will continue until station goals in this area are achieved. This issue has been approached from several perspectives. Some of these are:

- a. Recognizing this issue as a long-term backlog management issue rather than only a short-term backlog reduction effort.
- b. Evaluation of all Service Requests (SRs) to categorize and provide focus on SRs that potentially impact safety and reliability.
- c. Characterization of SRs to whether they directly relate to power block system performance. This includes the development of a new methodology to properly characterize the existing backlog and newly generated SRs. STP has revised the priority system for SRs to be consistent with practices found to be successful at other nuclear stations.
- d. Control of the work process through the newly implemented Operations Work Control Group (OWCG) that will provide more effective allocation of resources and focus to optimize safe and reliable unit operations.
- e. Enhancement of the capability to effectively schedule SRs in system and train outages.

The early results show that Unit 1 and common SRs have been reduced from approximately 3,000 in January 1993 to approximately 1,800 in August. This was accomplished while encouraging identification of equipment problems, to ensure continuous plant material condition improvements. To this end, approximately 140 SRs are being generated each week. While initial emphasis on backlog management is being placed on Unit 1, a similar process is planned for Unit 2.

2. Criteria for Resumption of Power Operation

Streamlining of the overall process through the implementation of the OWCG has been accomplished. Other initiatives such as improvements in the scheduling process, improved coordination between planners and spare parts engineers, the evaluation of each SR for characterization, and increased management emphasis will be required prior to and continuing after resumption of power operation.

Backlog management must include overall numbers reduction, while at the same time keep plant personnel motivated to identify deficiencies. One vehicle for management oversight is the analysis of the overall numbers. This will be accomplished with support for continuing SR generation to encourage continuous improvement in overall plant material condition.

Specific criteria and performance indicators for measuring maintenance effectiveness have been developed and are discussed in Section V.B.2.f. & g. These criteria are being monitored on a weekly basis by the Vice President, Nuclear Generation and his staff and include:

- Inoperable automatic functions
- Main control board deficiencies
- Ratio of preventative to corrective maintenance
- PM deferral rate
- Service Request generation rate
- Service Request workoff rate

Target values or trends for each indicator have been established and will continue to be evaluated as the unit prepares for the resumption to power operation.

3. Backlog Reduction Goals

Progress toward goals for backlog management will be measured by analysis of the input rates, proper characterization, the overall workoff rates, the types of work being accomplished and input from plant personnel.

The current goal for Unit 1 and Common power block SRs is below 1,000 prior to resumption of power operation. For Unit 2, the goal is below 850 prior to resumption of power operation. There will be no outstanding SRs that adversely affect plant safety or reliability (Priority 1 and 2).

C. Engineering Backlog

1. General

Engineering backlogs are being thoroughly evaluated pursuant to a formalized process to ensure that open items will not restrain the safe or reliable operation of the plant. To accomplish this goal, definitive criteria for the resumption of power operation have been established and all existing open items are being reviewed against the criteria. Sufficient resources are being assigned to achieve the backlog targets. In accordance with initiatives to be included in the Business Plan, management will continue to focus on these issues following resumption of power operation through establishment of long-term performance criteria and goals for each backlog type.

STP Engineering management will periodically review with the NRC the status of the backlog management program and of any backlog items not meeting the criteria for resumption of power operation.

2. Criteria for Resumption of Power Operation

Backlog items in all engineering categories are being screened and tracked to performance parameters specific to that backlog type. Open engineering work items have been analyzed to identify and address significant Operations or Maintenance work-arounds. The following general criteria have been established to apply to the current engineering backlogs to verify that:

- a. Open engineering work items do not adversely affect plant material condition as determined by the size and age of the particular backlog.
- b. Open engineering work items have no significant impact on safety related equipment or system operability.

All backlog items that do not meet these general criteria will be completed prior to resumption of power operation.

In addition to completion of all engineering backlog reduction work for items not meeting these criteria, STP management has established backlog reduction goals to be met prior to resumption of power operation as described in Section C.3.

3. Backlog Reduction Goals by Engineering Category

Engineering backlogs have been identified in the following categories:

a. Design/Physical Changes

This category of backlog items consists of design and physical changes to plant hardware that require the issuance of engineering design changes. This category includes the following specific items: modifications, non-conforming Plant Change Forms, and beneficial Plant Change Forms.

Additional, backlog reduction goals for resumption of power operation established for this category are:

- Reduction in the number of undispositioned non-conforming Plant Change Forms (PCFs) to less than 50 which are greater than 30 days old.

- Reduction of 15 Temporary Modifications from the current level of 24 installed for greater than six months for Unit 1 and Common.

b. Engineering Evaluations

This category of backlog items consists of items that require engineering review to determine applicability of generic issues, areas of concern as determined by field inspections or analyses, or general inquiries of engineering. This category includes the following specific items: Operational Experience Reports (OERs), Station Problem Reports (SPRs), non-design change Plant Change Forms (PCFs), Document Change Notices (DCNs), and Design Change Requests (DCRs).

Additional backlog reduction goals for resumption of power operation established for this category are:

- Demonstrate progress on completing a general backlog reduction to 600 items from a peak value of approximately 1400 by the end of 1993.

- No OERs, SPRs, DCRs, DCNs, or non-design change PCFs greater than one year old without an engineering evaluation.

c. Administrative/Programmatic Changes

This category of backlog items consists of required changes (exclusive of design/physical plant changes) to a controlled document, program or data base as a result of an engineering disposition or other activity. This category includes the following specific items: design drawings, vendor drawings, vendor manuals, Preventive Maintenance/Service Request (PM/SR) histories, and Master Parts List (MPL) Change Forms.

Additional backlog reduction goals for resumption of power operation established for this category are:

- Update the 311 vendor documents with five or more open amendments that have been identified by Operations and Maintenance as impacts on their performance.
- Update key control room design drawings.
- No Master Parts List Change Forms open greater than 60 days.
- Demonstrate progress on reducing PM and SR history backlogs from 6100 to 200 by the end of 1993 (i.e. to steady state workload).

d. Carryover Items from Past Programs

This category of backlog items consists of various engineering review items that represent discontinued engineering work programs. This category includes the following specific items: Requests for Assistance (RFA), Field Change Requests (FCR), and Construction Change Packages (CCP).

Additional backlog reduction goals for resumption of power operation for this category are:

- Either complete the engineering work product or
- Convert the item to a current work program.

D. Specific Equipment Issues

The following are examples of actions being taken for equipment issues from the Confirmatory Action Letter and its Supplement and the NRC Diagnostic Evaluation Report.

1. Turbine Driven Auxiliary Feedwater Pump

Problems associated with the overspeed tripping of the turbine driven auxiliary feedwater pumps in February 1993 have been corrected. Corrective measures included the refurbishment and modification of the trip throttle valves, refurbishment of the governor valves, optimization of governor setup and operation, enhancement of the system's drainage capability, and removal of defective steam traps from the drain systems.

These actions were demonstrated to be effective during testing in Unit 2 and the partial testing accomplished in Unit 1 during recent Mode 4 and Mode 3 activities. The remainder of Unit 1 Mode 3 testing to validate the corrective actions is factored into the integrated schedule.

Upon resumption of power operation, the turbine driven auxiliary feedwater pumps will be subjected to an augmented surveillance program that will confirm the reliability of the equipment. Furthermore, permanent changes have been made to the affected surveillance procedures to provide for verification of start capability from rest, and an acoustic leak detection program has been initiated to monitor fluid leakage past the trip throttle valves.

Other actions taken to help ensure the reliability of the auxiliary feedwater pumps include the availability of a vendor representative during governor, governor valve, trip throttle valve, and turbine system setup changes during initial return to operation, and revision of preventative maintenance instructions to enhance routine inspection, prevention, and verification activities.

2. Essential Chillers

Essential Chiller operation during cold weather conditions is being evaluated for reliable automatic response to design basis accidents. Engineering is performing calculations, related to the Essential Chilled Water System, which will provide the basis for evaluation and analysis of minimum and maximum chilled water loads under a range of weather related conditions and postulated design basis accidents. Strategies will be developed to operate and test the system, and an evaluation of proposed chiller enhancements will be completed. It is anticipated that the analysis will be completed and available for NRC review prior to the end of September 1993. The above actions will ensure that the essential chillers are capable of performing their design function prior to resumption of power operation.

3. Molded Case Circuit Breakers

STP identified a problem involving the overcurrent settings on several Unit 1 and Unit 2 molded case circuit breakers (MCCBs) with adjustable magnetic trips. A review of the safety-related MCCBs with adjustable magnetic trip settings was completed and appropriate actions were taken to address the operability concerns. As a part of the same review, selected non-safety related MCCBs were also evaluated and actions as required were completed.

The problem was attributed to a lack of clarity in the instructions for setting the magnetic adjustable elements leading to inconsistent application of setpoint criteria. Contributing to the deficiency was training material that also was unclear in this area. Training materials were upgraded and training provided. In addition, the Electrical Setpoint Index and affected test procedures have been revised to provide clarification for setting of these circuit breakers.

4. Technical Support Center (TSC) Diesel Generator

Recent completion of open work requests has improved the material condition of the TSC diesel generator equipment. Reliability of the power distribution breakers and exposure to the environment of the skid-mounted equipment will be addressed by planned modifications to the equipment. Modifying the diesel generator to improve environmental protection requires enclosing the skid area and will be completed within 18 months.

STP has initiated an enhancement program to further improve the reliability of the TSC diesel generator. A Diesel Generator Project Team headed by a team leader and which includes the system engineer has been formed. The team is conducting more frequent walkdowns to inspect for material and equipment degradation. The team is also establishing more detailed system performance indicators. Future installation of load banks to permit full load testing and increased frequency of functional testing from a quarterly basis to monthly will further improve reliability. The status of the TSC diesel will be evaluated as part of the assessment process prior to the resumption of power operation.

5. Inoperable Automatic Functions

Service Requests (SRs) are being screened to identify those that involve inoperable automatic functions. Prior to resuming power operation, all SRs involving automatic functions will be evaluated and necessary work performed to ensure that no significant impact on system operability or operator burden exists. Any remaining inoperable automatic functions will be analyzed in the aggregate to ensure safe, reliable plant operation will not be unacceptably impacted.

6. Target Rock Solenoid Valves

A Solenoid Operated Valve (SOV) Task Force was established in June 1992. A Plan of Action (POA) was formulated to address the generic issues concerning SOVs identified in Generic Letter 91-015 and NUREG 1275. Activities associated with the findings of the SOV task force and the Plan of Action are being addressed as part of the Business Plan. The status of the SOV issues will be evaluated as part of the assessment process prior to resumption of power operation.

7. Components on Increased Test Frequency

Efforts are underway to reduce the burden on Operations and Maintenance caused by the number of components included in the ASME Section XI test program that are on increased testing frequency. Many of these components are on an increased frequency because they either exceeded the trending limits due to stroke times or because the ability to achieve repeatable test results was hampered by the available system design and instrumentation. No apparent physical deficiency exists with these components. To remove these components from increased testing frequency, an evaluation of the historical and current test results is being performed to assess whether the material condition of the component can support decreased testing frequency. Evaluation guidelines were prepared in June 1993. To date, the total number of components has been reduced by six valves and one pump. The number of components on increased testing frequency is being tracked and reported to management on a weekly basis. Prior to resumption of power operation, management will review the number of components on increased testing frequency to ensure that the burden on Operations and Maintenance relating to the testing of these components will not adversely affect the safe operation of the plant.

8. Surveillance Flow Instruments

A contributing factor to the burden of surveillance testing on Plant Operations has been the lack of acceptable instrumentation for certain systems to support ASME Section XI testing. To help address this situation, a plant modification for permanent flow instrumentation in the Auxiliary Feedwater system will be installed prior to resumption of power operation. The design change for permanent differential pressure gages on the Residual Heat Removal Pumps has been installed. In addition, precision calibrations are being performed on the installed flow instruments in the Component Cooling Water Heat Exchanger outlet to the Essential Cooling Water system to preclude having to use temporary flow instruments. This work will also be completed prior to resumption of power operation.

Design Changes or Plant Change Forms have been initiated to eliminate the use of temporary flow instruments or temporary pressure gages in the surveillance tests for the following systems: Essential Chilled Water, High Head Safety Injection, Spent Fuel Pool Cooling, and Screen Wash Booster Pumps. These changes will reduce some of the surveillance burden currently being experienced by Plant Operations. The status of these changes will be evaluated as part of the assessment prior to the resumption of power operation.

9. Emergent Equipment Issues

Emergent equipment issues are being promptly evaluated to identify any requiring action prior to resumption of power operation. For example, action plans are already developed to improve the material performance of the Power Operated Relief Valves (PORVs) on the main steam lines, Residual Heat Removal system isolation valves, and Feedwater Isolation Bypass Valves which were identified as problems during the July heatup.

IV. Assessment Process

The assessment process will evaluate and determine the acceptability of continued operation at specific milestones including: prior to Mode 4; prior to criticality; power ascension above 50 percent power; completion of the first week of full power operation, and as determined necessary thereafter. The process will include involvement of line and senior management, station assessment oversight groups (Nuclear Assurance (NA), Independent Safety Engineering Group (ISEG), Plant Operation Review Committee (PORC), Nuclear Safety Review Board (NSRB), Planning & Assessments (P&A)), Operational Readiness Review Panel (ORRP), outside consultants, and industry groups such as INPO, as determined by STP executive management.

In order to assure a consistent and integrated approach to the internal assessment process, a Line Management Assessment Plan will be prepared by line management and approved by the Group Vice President, Nuclear prior to core reload. Conceptually, the plan will consist of the following elements:

- Line managers with assessment responsibilities associated with resumption of power operation will be defined.
- Assessment points or plateaus will be defined from core reload to 100% reactor power.
- Line managers designated above will prepare self-assessment checklists/plans for their functional area for each of the assessment milestones. These checklist/plans will address the hardware, program and performance issues described in this Operations Readiness Plan, including issues described in the NRC's Confirmatory Action Letter and its Supplement and appropriate issues from the DER. The checklists will both review performance to date and readiness to proceed to the next plateau.
- Prior to advancing beyond any assessment milestone, the checklists for that plateau will be completed and reviewed. The PORC will review the checklists for those functions that directly report to or support the Plant Manager's organization. The ORRP will review the results of the PORC review and checklists from functions that are outside the Plant Manager's organization, e.g. Nuclear Licensing.
- Collectively, the Plant Manager and ORRP will report to the Vice President, Nuclear Generation and the Group Vice President, Nuclear on performance to date and readiness to proceed to the next plateau. They will also provide a recommendation on whether or not to proceed to the next plateau.
- The Vice President, Nuclear Generation will recommend and the Group Vice President, Nuclear will approve proceeding to the next plateau.
- After reaching 100% power, an overall critique of the process will be conducted by the Vice President, Nuclear Generation. Lessons learned and recommendations from that critique will be factored into the plan for the follow-on unit.

In addition to the Line Management Assessment Plan, an Independent Assessment Plan will also be prepared and approved prior to core reload. Conceptually, this plan will address the following:

- An integrated surveillance/observation plan for internal, e.g. QA, Assessments, and ISEG, and external groups, e.g. INPO, for specific plant events. This process will be managed and coordinated by Nuclear Assurance Department.

- A review of the Line Management Assessment Process at each assessment plateau. The plan will contain specific criteria for the assessment of the process. The General Manager -Nuclear Assurance will give the Group Vice President, Nuclear an independent opinion on readiness to proceed to the next plateau as an input on each plateau decision.

- Prior to ascending to Mode 4 and prior to criticality, the independent members of the NSRB will conduct a review of the decision/assessment process to date and provide that input to the General Manager-Nuclear Assurance.

- After reaching 100% power, the General Manager-Nuclear Assurance will conduct a critique of the independent assessment process and provide a report on the lessons learned and recommendations on improvements for the follow-on unit.

V. Specific Operational Readiness Issues

A. Management Structure and Effectiveness

STP is committed to correcting performance deficiencies and laying the foundation for sustained excellent performance. The following discussions outline the plans and actions to assure the proper structure, makeup and performance to demonstrate overall management effectiveness in resuming power operation in Units 1 and 2.

1. Management and Organizational Changes

STP recognizes that one of the keys to sustained excellent performance is an effective management team that provides strong leadership and clear expectations to the organization. Since April 1993, HL&P has made a number of changes in order to provide that strong team.

Mr. W.T. Cottle was hired as Group Vice President, Nuclear in April 1993. Mr. Cottle brings a proven track record of leadership in the commercial nuclear industry to STP. Mr. Cottle has made a number of organizational changes including the hiring of new Vice Presidents of Nuclear Generation and Nuclear Engineering, and new General Managers of Nuclear Assurance, Plant Services, and Nuclear Licensing. Some functional rearrangements were also made. STP has been provided with a senior management team with industry experience, management skills, and strong leadership. Figure 4 details the organization in place at the end of March 1993, and Figure 5 details the organization in July 1993. The new functional arrangements are shown on Figure 6.

In addition to changes in the senior management team, major changes are also underway within the operational organizations in Nuclear Generation. The thrust of these changes is to unitize the Operations and Maintenance organizations to provide more organizational focus and to shorten communication chains within the organization. These changes within the generation organization will be completed and implemented prior to returning each unit to service. The new structure is shown in Figure 7.

2. Management Commitment and Communication Initiatives

STP management's vision for the facility is to be recognized as "World Class" in the areas of safety, reliability, and cost effectiveness. This vision can only be attained through long-term continuous improvements. Achievement of the actions described in the Operational Readiness Plan and the Business Plan, will demonstrate that commitment.

In order to communicate expectations and to receive feedback from employees, STP management has undertaken a number of initiatives. Some of the more prominent ones are listed below:

a. Development of a Comprehensive Business Plan

The Business Plan will be a management tool that provides for top down communication of high level strategies and expectations in the form of the facility Vision, Mission and Objectives. Additionally, it provides bottom up communication of the methods that will be used to attain world class performance and horizontal communication between departments to develop the action plans necessary to implement the desired improvements. The goals being established in the Business Plan will be characterized by high standards of performance, individual accountability and effective planning. The Business Plan is a comprehensive improvement plan for STP and will incorporate and supersede outstanding items from the Master Operating Plan that was used previously at STP.

b. Meetings with employees

The Group Vice President, Nuclear has met with all Senior Reactor Operators to convey to them his expectations and his view of the crucial role that they play at the facility. Additionally, he has initiated an ongoing series of meetings with employees called "2 C's" meetings. In these meetings, which provide the opportunity for candid discussion, employees are invited to address Compliments and Concerns to the Group Vice President, Nuclear. This is an ongoing program.

The Vice President, Nuclear Generation has sent letters to each of the employees in his organization which express his expectations, and has invited employees to share opinions and ideas with him. Additionally, he has conducted a series of meetings with employees in small groups to discuss problems and ideas for improvements. During these meetings the need for improving individual performance to reduce the significance and frequency of human error was stressed. A second round of meetings has started to ensure this line of communication remains functional.

The Vice President, Nuclear Engineering holds "All Hands" meetings approximately once each month for personnel in Nuclear Engineering. These meetings emphasize the need for, and methods to, provide effective engineering support to the plant.

The General Manager, Nuclear Assurance has initiated a series of "brainstorming" sessions with Nuclear Assurance personnel to promote intra-organizational communication, identify any problem areas and discuss potential solutions for improving organizational and station effectiveness and overall quality.

c. Written communications

Greater use of written material, such as the "STP On Line" publication, is being made to keep employees informed on management philosophy, plans and events at the site. This is a specific strategy to assure that all employees have the opportunity to obtain the same information at the same time. Further, the Vice President, Nuclear Generation regularly publishes an information bulletin titled "Management by Walking Around" that addresses pertinent plant issues.

d. Video tapes

A video tape of the Group Vice President, Nuclear and the Chairman/CEO of Houston Industries has been prepared that describes the commitment of HL&P to improvements at STP, details a number of the changes that have been made, and solicits employee feedback on issues and concerns. This tape was mailed directly to each employee's home to be shared with the employee's family. This was a pilot effort and employee feedback indicates that the video has been very well received. Accordingly over the next several months, a series of videos is planned to inform employees of key efforts underway as well as management goals and expectations.

e. Formation of Site Management and Department Management Teams

These teams were formed primarily to support the development of the Business Plan. However, they are proving to be an important means for vertical communications between senior and middle management, and for horizontal communications between departments and, therefore, will remain in effect and be utilized for other purposes in the future. The Department Management Team has developed a charter to support its ongoing role and function, and a similar effort is being undertaken by the Site Management Team. The effectiveness of these Teams will be periodically evaluated by STP senior management.

Communication and teamwork are a major focus area in the Business Plan. The initiatives described in the Business Plan are designed to ensure that the short-term progress made in communications between employees and management is captured and built upon for the future.

3. Management Effectiveness

STP has developed a strong management team to clearly communicate expectations and to provide mechanisms for candid and free communications among all levels of the organization. Additionally, strong actions have been taken to demonstrate management's commitment to sustained improvement and excellent performance. The final measure of the effectiveness of these efforts will be in the performance of STP and its employees.

To assure a high level of performance by STP employees there is an ongoing commitment by STP management to continuing organizational development and training. This is exemplified by the selection of nine individuals outside Plant Operations for SRO licensing. These candidates were added to the SRO class which began in August, 1993. Following successful licensing by the NRC, these individuals will spend one to two years in Operations to gain experience and will then be available for transfer to station support organizations to upgrade the level of operational experience.

To provide additional operations expertise, STP has initiated an SRO certification program that can be conducted once or twice a year. This course is based on a survey of other utilities and INPO. The course will provide the opportunity to infuse operational knowledge into the organization. The first of these classes will begin during the fall of 1993. Other specific training commitments, such as the commitment to Maintenance training, are discussed in other parts of this plan.

Also, STP management is committed to providing the appropriate level and mixture of resources to assure that the station's long-term objectives are achieved. There have been a number of short-term efforts to meet critical resource needs, such as in Operations, which are detailed in other portions of this plan. Also, long-term initiatives have been developed to assure that proper staffing levels are developed and maintained to adequately support the facility. These initiatives are described in the Business Plan. Additionally, where appropriate, short-term contract resources have been obtained to augment HL&P employees to deal with work loads or projects that are beyond the ability of the HL&P staff. At the same time, substantial effort has been expended in areas such as Engineering to categorize what types and levels of resources are needed. The Business Plan will address the HL&P resources necessary for the sustained, safe operation of STP.

B. Organizational Readiness

1. Operations

STP is committed to providing an environment that supports the safe and efficient operation of its nuclear units and to this end has taken several actions to reduce the previous burden placed on the Operations staff. The more significant are:

a. Staffing Initiatives

One of the keys to successful operation of STP is to have alert, responsive, well supported, and well trained personnel. This means that there should be sufficient numbers of personnel to maintain individual workloads at a reasonable level while on shift without the need of routine overtime, and to allow for continued, uninterrupted training of Operations personnel.

To achieve this initiative, a six crew operating schedule will be implemented prior to resumption of power operation of each unit. Each crew will consist of five licensed and five non-licensed operators. This is an addition of one non-licensed operator per crew. To support this goal, License Class #6 will be completed in October, adding six Reactor Operators (ROs), six Senior Reactor Operators (SROs), and relicensing two SROs who were previously licensed at STP. Also in progress is License Class #7, with nine SRO candidates from other departments, six RO candidates from Plant Operations, and three Shift Technical Advisor candidates. An additional two SRO candidates will be entering the program in September from Nuclear Training and six more Upgrade SRO candidates from Plant Operations will be entering the program in December.

Other staffing increases include an additional twenty experienced non-licensed Operators (10 per unit) who will be trained and qualified prior to resumption of power operation in each unit. To provide additional support, experienced operations support contract personnel will be retained. To ensure the continued success of the above initiatives, the Business Plan will provide for the development of a long-range staffing and development plan. This plan will address optimum staffing levels, definition and establishment of an "operator pipeline", and the establishment of inter-departmental rotation opportunities for Operations personnel.

b. Reduction in Administrative Burden

STP is committed to assure that administrative duties on the shift crews do not dilute their ability to monitor the operation of the reactor and power generation system and support systems. Of particular concern is distraction of the Shift Supervisors from their primary duty of maintaining an overview to allow proper coordination of activities. To alleviate these burdens the following actions have been or are being taken:

- (1) An Operations Work Control Group (OWCG) has been established in each unit. This group has significantly reduced the burden on the Control Room staff, particularly the Shift Supervisor, by assuming the majority of work process functions assigned to Operations.
- (2) A Senior Reactor Operator Certification course has been developed to provide personnel from other departments with a better understanding of the operation of the facility and the challenges faced in the day to day operation of the units.

- (3) Improvements are in place to address Fire Protection Computer nuisance alarms which has been a distraction in the past. The number of nuisance alarms has been significantly reduced and a trending program put in place to ensure timely resolution of future problems. Additionally, mechanical relays for over 180 Fire Detection System data acquisition computer points (a historic source of nuisance alarms) have been replaced. To better equip the operators to respond to fire alarms, a program modification revising over 1000 alarm messages to a more user friendly format which provides the type and location of each alarm device and automatically provides a hard copy printout of the associated Fire Pre-Plan document number for ease of reference will be installed prior to resumption of power operation.

Longer term improvements in connection with the Fire Protection Computer will be addressed in the Business Plan which will provide adequate assurance of system reliability and usability until the scheduled replacement of the Fire Detection Computers.

- (4) To aid in daily routine, the Operations staff developed Personal Computer (PC) based software programs to track Limiting Conditions for Operation (LCO) and to develop Equipment Clearance Orders (ECO). Each of these systems has now been verified. To fully comply with software quality assurance requirements, a project has been initiated to validate the Operations software and associated databases prior to April 1994. In addition, a Station Software Quality Assurance procedure is being developed.

c. Initiatives to Focus Operations on the Power Block

The Plant Operations Department is currently responsible for operation of site systems with the exception of Acid and Caustic Systems, Demineralized Water System, Condensate Polishing System, Chemical Feed System, and Liquid Waste Processing Systems, which are the responsibility of the Technical Services Department. To enhance operational emphasis on safety-related and power block systems and to further reduce the burden on the operators, particularly during resource intensive evolutions, the responsibility for non-safety related support systems outside the protected area will be transferred to the Technical Services Department. This transfer of responsibility will be complete prior to resumption of power operation in Unit 1. Also, additional personnel from the Technical Services Department will be qualified as Fire Brigade Leaders to reduce the dependence on Plant Operators to fulfill this responsibility.

d. Operator Training Initiatives

To assure operator proficiency after an extended outage, Operators will receive specific training which, as a minimum, will consist of :

- (1) Performance, on the simulator, of a reactor startup and a plant startup from Mode 4 to turbine roll, with performance of surveillances and malfunctions. At power casualties will also be included.
- (2) Training on modifications made during the outage.

Training has been conducted on the modifications made to the Auxiliary Feedwater System, Toxic Gas Analyzers, and Steam Generator Feedwater Pump Control system.

Additionally, the Plant Operations Manager has visited Brunswick Nuclear Project (BNP) to observe and participate in reassessment actions in preparation for returning BNP Unit 1 to service.

2. Maintenance

Actions are underway to improve: clarity of performance expectations for Maintenance personnel; effectiveness of the work control process; controls on the use of overtime; the self-checking program, and training of personnel.

a. Performance expectations

Two initiatives are planned to improve communication of performance expectations:

- (1) Basic expectations are being promulgated within a single, user friendly document. This document will form a cornerstone for work within the Maintenance Department.
- (2) It is HL&P's plan to typically assign two supervisors to each maintenance crew. This will allow one supervisor to provide enhanced field management of the crew while the other supervisor plans the work for the next week. The supervisors will then exchange roles, with the supervisor who had been planning, managing the work for the week which was just planned and the other supervisor planning the work for the next week. This change in crew structure and operation will be implemented prior to resumption of power operation in each unit.

b. Work Control Process

Over the years, the work control process became complex and administratively burdensome. To address this issue, STP revised its work control process which resulted in a significant change to procedure OPGP03-ZA-0090, "Work Process Program". The procedure was reduced from approximately 160 pages to a more workable document of around 40 pages. Training on this procedure, prior to its implementation in August, was completed. Additionally, the planners have been provided with new computer software that allows quicker access to planning data and improvements in the work planning process.

c. Overtime

Overtime is being closely monitored in the Maintenance Department and, as a result, a substantial reduction in overtime has been realized. To aid in the effort to effectively manage workhours, STP is realigning its operational structure such that each unit is effectively self-sufficient with its own operations, maintenance, and work control groups; improving the scheduling process; and making work assignments with the concept of "one job-one crew", whereby tasks are scheduled so that the same crew does all the work, regardless of the number of shifts involved.

d. Self-Checking

The self-checking program at STP has also been recently revised in an attempt to improve overall personnel performance. The new program is based upon the INPO self checking program and utilizes the acronym STAR, which stands for:

Stop	Think	Act	Review
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This simple program will make it easier for personnel to incorporate self-checking into their daily routine. Personnel have been introduced to this new program through "STP On Line" articles and specific training sessions. The station is evaluating an interactive video training tool acquired from INPO that reinforces the STAR concept.

c. Maintenance Training

Significant changes have been implemented in Maintenance Training. This effort can be summarized in the broad categories of Technical and Supervisor Training.

(1) Technical Training

The training and qualification requirements associated with journeyman qualification were evaluated. This resulted in changes to the basic qualification requirements to bring them more in line with current industry practices. Using this information, an evaluation process referred to as the Maintenance Proficiency Evaluation (MPE) has been developed and subsequently used to determine the basic skill and knowledge level of both direct hire and apprentice graduate craft. When it is determined that an individual has a weakness in basic knowledge or skill, that person's certification is suspended and the individual is not allowed to work independently. The individual is then assigned remedial training. Upon completion, and upon recommendation of both line management and instructors, the individual is allowed to retest to have certification reinstated.

Maintenance Training has also adopted and implemented a process referred to as "Design a Curriculum" (DACUM), which is a recognized systematic approach for validating job task analyses to ensure that they accurately reflect tasks performed in the field. Additional enhancements have been made to the training program as a result of performing this process.

Two additional personnel weaknesses identified during the evaluation of technical training were a less than adequate understanding of plant systems and an insufficient number of certified journeymen to accomplish routine tasks. To address both needs, an aggressive training schedule to be completed by the end of December 1993 has been implemented. This schedule presently has averaged more than 50 maintenance personnel in training each day.

(2) Supervisory Training

To address weaknesses in performance of Maintenance Supervisors, a supervisor training program has been developed to ensure full compliance with ACAD 90-10, "Guidelines for Maintenance Supervisor Selection and Development". Training using this program has been completed for Mechanical Supervisors and is scheduled to be complete for Electrical and I&C Supervisors by the end of 1993. This training is further enhanced by the participation of line management in course presentations and a panel discussion with Senior Management at the end of each class.

Several other mechanisms have been instituted to ensure that the quality of the training program is maintained. These include participation of line management in the continuing training program, the establishment of appropriate review committees, and the establishment of an effective feedback system.

(3) Contractor Support

The effectiveness of contract labor and their supervisors for maintenance activities is being continually evaluated. A schedule for reduction in numbers of contract laborers has been prepared and is being monitored by management. Overhaul of the emergency diesel generators, a task assigned to contract labor during the last few outages, is being conducted by STP employees with a small augment of contract personnel.

f. Performance Measures Used to Monitor Maintenance Effectiveness

Performance statistics for Maintenance are reviewed weekly by the Vice President, Nuclear Generation, and his staff. Performance indicators have been designed to enable the Vice President, Nuclear Generation and his staff to assess Maintenance effectiveness and overall plant material condition.

Indicators to be used to monitor station material condition are:

- Inoperable automatic functions. (Goal: none that in the aggregate adversely impact operations)
- Main Control Board deficiencies. (Goal: less than 10)
- Ratio of preventive/corrective maintenance. (trend analyzed)
- PM deferral rate. (Goal: less than 20)
- Total Open Service Requests. (Goal: less than 1000 - Unit 1 and Common)
- Service Request Generation Rate. (trend analyzed)
- Service Request Workoff Rate. (trend analyzed)

This data will continue to be evaluated and the monitored indicators refined in accordance with that analysis. Indicators that exceed established goals or have adverse trends trigger additional analysis to understand the trend, and, as appropriate, initiate corrective action.

g. Resumption of Power Operation - Criteria for Maintenance Effectiveness and Material Condition

- No outstanding SRs that affect unit safety or reliability - No Priority 1 and 2's.
- Demonstrate ability to manage maintenance workload - Total open SRs meets goal and workoff rate trend remains positive.
- Changes in SR generation rate are evaluated and understood to ensure threshold for deficiency identification is acceptable - Generation rate is consistent with plant condition.
- PM deferrals analyzed and corrective actions in progress - Goal met and trend remains positive.
- Main Control Board deficiencies - Goal met and trend remains positive.
- Inoperable automatic control functions - Aggregate does not adversely affect Operations ability to perform quality rounds and handle normal work load. Positive trend continuing in resolving inoperable functions.

3. System Engineering

STP is initiating improvements in the System Engineer Program across a wide spectrum of short- and long-term initiatives. These initiatives are focused on improving engineering support of the operations and maintenance of the station. The improvements are categorized in four major areas:

- restructuring System Engineer responsibilities,
- improving the training and qualification of System Engineers,
- reducing the existing burden on System Engineers, and
- improving the information support tools for the System Engineers.

These improvements will result in both short-term and long-term improvements in supporting the safe resumption of power operation. Specific short-term actions discussed below provide assurance that System Engineers will be fully capable of supporting the plant. Longer-term issues are also identified and will be fully developed, tracked, and managed as part of the long-term improvements outlined in the STP Business Plan.

a. Restructuring of System Engineer Responsibilities

System Engineer responsibilities have been evaluated and clarified using a customer participation process and incorporation of lessons learned from other nuclear utilities and industry organizations. Specific actions in this area include the following:

- (1) System Engineering self assessments have been performed, and will continue to be performed in the future, to facilitate a process of continuing self improvement. These assessments have involved a systematic review of the overall health of assigned systems with individual System Engineers and Engineering management. The assessments include review of system open items, system walkdowns with management and the assigned System Engineers, discussion of standards to be applied to system health, and coaching on methods to be used to improve system performance and condition. The assessments also include interface with Operations personnel to factor in their concerns and requests with regard to system performance improvements.
- (2) Action Planning Teams were assembled to address System Engineering performance improvements. This process is intended to fully integrate worker and customer participation in the issue identification and resolution process. These teams have developed a set of implementing actions that will effect longer term improvements. The improvements include action plans to develop the expectations for System Engineers as described in a System Engineering Responsibilities document (described below), establish systems that will be included in the program, provide necessary resources to meet program requirements, and improve management and supervisory practices and priorities to facilitate System Engineer performance.
- (3) Expectations and performance measures for System Engineers have been established. These expectations are described in a System Engineering Responsibilities document (approved August 1993). In addition to this written description of the division of responsibilities, System Engineering responsibilities are reinforced through manager/supervisor meetings with the System Engineers to discuss specific program implementation activities as discussed above.

- (4) A field visit to the Grand Gulf Nuclear Station was made to evaluate their experience in System Engineering program upgrades and to supplement data available from INPO. This information was used as input to the initial improvements in the System Engineer program and external information will continue to be used in the continuous improvement of the program. A subsequent visit to the Brunswick Nuclear Project provided information that will be used to supplement program upgrades further.
- (5) The System Engineering Guidelines will be revised to incorporate the newly defined division of responsibilities document. This is scheduled for completion in September 1993.
- (6) The System Walkdown and Health Report Guidelines will be revised consistent with the System Engineer Responsibilities document to clarify the scope and frequency of system walkdown and health reports. This is scheduled for completion in September 1993.

The result of these initiatives is that the roles, responsibilities, and expectations for the System Engineer will be firmly established and be the basis for performance effectiveness review and evaluation. Management focus on this area will be maintained to ensure that the expected long-term performance results are achieved.

b. Training and Qualification of System Engineers

Substantial improvements in the training and qualification level of System Engineers have been initiated to ensure that the individual System Engineers are capable of fulfilling their roles and responsibilities and of meeting the defined performance expectations. Specific actions in this area include the following:

- (1) The Engineering Support target audience was tested to determine the need for orientation training. As a result of this testing, orientation training has been scheduled for System Engineering personnel with identified knowledge deficiencies. This training will be complete in December 1993 for incumbents.
- (2) INPO guidelines for Engineering Support Personnel (ESP) were used to modify the existing Manager and Technical Staff program and to establish the framework for position specific training, including System Engineer.
- (3) Position-specific qualification cards have been developed and will be used, with the training program in general, to ensure that the System Engineer meets minimum qualification standards. Incumbent System Engineers (as of January 31, 1993) will be evaluated using the new qualification card criteria in December 1993. Personnel assigned after January 1993 will qualify as System Engineers in accordance with the ESP program.

- (4) System Engineer Training Guidelines will be issued in September 1993. This document will outline the implementation and development guidelines for establishing a "system-expert" level of qualification. The implementation process will begin immediately with full implementation across the entire System Engineering organization. This includes specific training, both onsite and offsite, which has been identified and budgeted in 1994.

These completed and continuing initiatives ensure that the level of knowledge and skills necessary to fulfill the System Engineer roles and responsibilities effectively will be defined, and a qualification card method will be used to ensure that the System Engineers have received the corresponding training. Training effectiveness criteria are being incorporated into the ESP training plan and will include monitoring the training provided, evaluation of course performance, evaluation of job performance, and review of station events with performance causes or contributors.

c. Reducing the Burden on System Engineers

Consistent with the evaluation and definition of System Engineer roles and responsibilities, the work load burden on the System Engineering staff was evaluated to ensure that sufficient resources are available to fulfill the performance expectations. As a result of this review, organizational changes have occurred to expand the Mechanical Fluid Systems Division from three to five supervisors (effective August 1993) to better equalize the span of responsibilities and ensure effective supervision of System Engineer performance. In addition, five new System Engineering positions have been approved and staffing of these positions is in progress.

These additional resources, when coupled with the effectiveness and efficiency improvements achieved from the clarification of roles, responsibilities and performance expectations, additional training, and improvements in the information systems area as described below, will ensure that System Engineers will not be unduly burdened and will be focused on their job requirements, have adequate training to fulfill those requirements, and have information tools necessary to effectively perform their jobs.

d. Improving Information Support Systems

System Engineer information needs were evaluated to ensure that information required to perform the System Engineer function effectively is readily available. Specific actions completed and continuing in this area include the following:

- (1) System Engineers received an allotment of personal computers purchased at the end of 1992. Since then an additional 82 personal computers have been purchased and are being distributed to Plant Engineering personnel (including System Engineers). This will result in each System Engineer having a personal computer to assist in trending system performance data, tracking open system action items and issues, and performing specific, system-based analyses.
- (2) Access to the Local Area Network system has been established for the System Engineers to ensure that Station Problem Report and Plant Change Form information is available for input to the performance of the System Engineer functions. STP's current project to implement an improved plant information system includes the provision for access by the System Engineers.
- (3) Customized software to support system performance monitoring, including acquisition and processing of plant performance data, is scheduled for implementation in December 1993. A test system is expected to be initialized onsite prior to resumption of power operation.

These improvements in data access and processing capability will provide expanded information in a more timely manner, thereby allowing the System Engineers to fulfill their defined functions more efficiently.

4. Overall Nuclear Engineering Support

HL&P has taken actions and established planned initiatives to assure that the Engineering organization's ability to support Operations and Maintenance prior to, during and subsequent to resumption of power operation is significantly enhanced. These actions include addressing three fundamental performance areas:

- organizational and management performance,
- performance of engineering work, and
- overall performance improvement initiatives.

The following specific areas address Nuclear Engineering's ability to provide adequate and timely support.

(1) Organizational and Management Performance

- (a) The overall ability of Nuclear Engineering Management to manage the required work load effectively has been enhanced through assignment of a new Vice President, Nuclear Engineering, with further improvement following a comprehensive realignment of the Engineering organization to be completed prior to resumption of power operation. This reorganization will reassign the most qualified people to management positions and will eliminate overlaps and duplication of responsibilities. This realignment will be performed in the larger context of developing a long-range Engineering Business Plan congruent with the site Business Plan. This will assure that the level of engineering support provided will meet station needs.

In addition, in the longer term, the Engineering Business Plan provides for continuing emphasis on management development including ERO licensing or certification, as appropriate.

- (b) During the plant startup, Engineering will provide 24-hour on-shift support to facilitate effective interface between Operations, Maintenance and Engineering. This will be accomplished by 24-hour staffing of the Technical Support Engineering organization which was established to provide better support to Operations, Maintenance, and interface with Engineering. The on-shift staff will have direct access to Design Engineering and other components of the Engineering organization on an as-needed basis throughout the startup phase.
- (c) To complement the existing Technical Support Engineering function, STP has enhanced the System Engineer's performance through clear definition of standards and expectations as described in other parts of this plan. These improvements are expected to materially improve Engineering support of Operations and Maintenance.

- (d) Engineering has augmented its staff through contractor support to reduce backlogs and other engineering workload. This additional support has provided Engineering with assurance that it can adequately support the demands of the startup and power ascension schedule while continuing to manage its workload to reduce the backlogs in accordance with STP's longer-term Business Plan goals. Engineering has budgeted sufficient resources to assure that the necessary level of support can be provided to Operations and Maintenance now and for long-term operation.

(2) Performance of Engineering Work

In conjunction with improvements in management capability, Engineering has undertaken initiatives to reduce the current engineering workload and to improve the overall capability of Engineering to manage the work. These initiatives are focused in two areas:

- short-term initiatives to characterize, manage and reduce the engineering backlogs to acceptable levels prior to resumption of power operation, and
- improvement in the engineering work management, planning and scheduling process to better prioritize, plan, schedule and complete important work.

Reduction in the Engineering backlogs to meet specified plant criteria for resumption of power operation is addressed in other parts of this Plan. The results achieved will demonstrate the capability of Engineering to manage the workload and provide the appropriate level of support to Operations.

(3) Overall Performance Improvement Initiatives

- (a) Dependence on Architect Engineers will be reduced by ensuring that proper actions are taken to develop a more self-sufficient Engineering organization
- (b) The specific initiatives to be addressed in the Business Plan, in addition to improving the Engineering work management processes, include improving the modification process (major, minor and temporary modifications), project management, corrective action process, plant work control and engineering interface, and configuration management.

5. Technical Services

As part of the effort to reduce the burden on the Operations staff and to allow them to focus on the power block prior to resumption of power operation in Unit 1, the Technical Services Department, specifically Chemical Operations, will be assuming the responsibility for certain tasks that are performed outside the protected area. Technical Services will further support Operations by qualifying more personnel as Fire Brigade Leaders.

Technical Services also reviewed Fire Brigade Leader Training to address questions regarding its adequacy and conformance to regulatory requirements. To accomplish this task the following actions were taken. Lesson plan objectives for Licensed Operator Training and Fire Brigade Leader Training were compared to ensure Fire Brigade Leaders had adequate system knowledge to assess the potential consequences of a fire and fire suppression on the safe shutdown of the plant. The UFSAR, FHAR, Technical Specifications, and appropriate procedures were reviewed to confirm compliance with regulatory requirements. Past concerns from Station Problem Reports, NRC Inspection Reports, audit reports and assessment reports were reviewed to ensure those concerns were adequately addressed. STP's training program was compared with other nuclear utilities to ensure consistency with current industry practices. Additionally, a survey of Fire Brigade Leaders was conducted to determine areas where the training program could be enhanced and no generic weaknesses were identified. These actions confirm that the training program is adequate and meets regulatory requirements.

C. Other Program Enhancements

1. Station Problem Reporting

The Station Problem Report (SPR) is the principal mechanism by which station personnel identify non-material problems or deficiencies to management. Significant changes in this process were implemented over the past 18 months which caused significant backlogs and some loss of confidence in the system. While this area is one of the key issues to be addressed in the Business Plan, several key actions have been implemented and are planned to support the readiness of the facility to resume power operation.

- a. The Corrective Action Group (CAG) and responsible department managers independently evaluated open SPR issues identified prior to the July heatup for potential effect on equipment operability and safe operations. Issues important to safe operation and equipment reliability were identified and resolved.
- b. Several actions have been taken in order to make the SPR process more efficient and effective and to ensure appropriate department and personnel involvement. Responsibilities for SPR evaluation, prioritization, and disposition have been realigned; clarification has been provided regarding use of SPRs with regard to hardware deficiencies; and a graded approach to root cause analysis has been provided. Action has also been taken to streamline the SPR form and to reduce duplicate tracking of corrective actions.

Involvement of the Plant Manager and respective Department Manager(s) is obtained early in the resolution process of significant SPRs. This is accomplished, in part, by a multi-disciplined screening group that meets daily during the normal work week. This group is responsible for assigning significance, priority, and proposed responsibility for investigations. If an SPR is determined to be significant, a responsible manager is assigned. The Plant Manager, or the assigned senior station manager will meet with the investigator(s) to discuss investigation scope, possible generic implications, schedules for investigation completion and management feedback on status. Upon completion of the investigation, the Department Manager responsible for the investigation discusses the results with affected managers to ensure corrective actions are effective.

- c. Other significant process improvements include the initiation of a process to screen Service Requests for potential significance and SPR generation if a root cause analysis is necessary and a process allowing departments to more realistically integrate SPR corrective actions into existing work schedules by allowing the department responsible for implementing a corrective action to assign the priority of the item.
- d. Specific performance measures have been identified to monitor the effectiveness of the corrective action process. These include the number and age of:
 - SPRs (total and by department) awaiting corrective action implementation.
 - SPRs (total and by department) awaiting investigation.
 - SPR reopened investigations because of inadequate root cause determinations.
 - SPR by cause code.

Graphs of these performance measures are provided weekly to senior management.

- e. Prior to resumption of power operation, STP will ensure that:
 - line management ownership of the corrective action process is established.
 - necessary enhancements to the Station Problem Report process are implemented and proven.
 - any existing backlog of SPR actions are assessed for potential impact on equipment operability and safe plant operation.

2. Equipment Labeling

A comprehensive relabeling program incorporating the guidelines of INPO Good Practice OP-208, "System and Component Labeling" and EPRI NP-6209, "Effective Plant Labeling and Coding" is being implemented. The program will encompass valves, major components, electrical distribution, piping, and various miscellaneous components and will result in labeling that will reduce errors by the use of color coding, consistent nomenclature, bar coding (future applications) and identification of special functions.

Because this will be a long-term (estimated completion in December 1995), resource intensive project, it will be headed by an STP Project Manager, but will be primarily staffed by contract personnel. Program requirements will be in place and a pilot program involving the Standby Diesel Generators will be completed by the end of 1993. Until this project is completed, the current label maintenance program ensures that identified labeling deficiencies having an impact on the safe operation and maintenance of the plant are addressed in a timely manner.

3. Locked Valves

Changes to the locked valve program are currently being implemented. Current changes are based upon recommendations made after an INPO assisted root cause analysis of problems encountered. The new program will involve approximately 800 fewer valves. These changes are scheduled for completion by the end of 1993.

4. Preventive Maintenance (PM) Program

A Business Plan strategy has been developed to address plant reliability improvements. The strategy will assess the existing Preventive Maintenance and Reliability Centered Maintenance (RCM) programs to foster the development of a comprehensive reliability-based, predictive/preventive maintenance program with a documented basis. The strategy will also provide for the review of all existing PMs to ensure they are applicable and effective, and an evaluation of the PM program process, including software, to identify elements that require enhancement. This effort will be accomplished through an integrated approach composed of the performance of detailed EPRI style RCM on approximately 10 systems, streamlined RCM on approximately 40 systems, and a comprehensive review of PM tasks to develop a complete PM basis. The scope of the action plan also includes the disposition of a large portion of the current PM feedback workload, the evaluation of organizational and procedural changes to consolidate station PM related activities, and the expanded use of predictive maintenance and operator logs to facilitate the use of condition directed tasks based on observed equipment condition. This effort will result in an optimized PM program that focuses maintenance on the structures, systems and components that are critical to the availability and reliability of the plant.

5. Station Information Systems

STP computerized information systems have evolved to meet the emerging needs of the station since construction. As a result several non-integrated platforms for handling information have developed. STP is currently conducting a major effort to improve the management information systems that support the facility. To this end the following actions are being or have been taken:

- a. Seven local area networks have been consolidated into one. Further action is being taken to extend the network into the power block to improve its overall access and performance.
- b. Plans have been developed to implement an integrated mainframe database and associated application software to support station work processes. A plan for conversion to this system will be available by the fourth quarter of 1993. This plan will address data validation as appropriate.

The majority of changes that need to be made to the STP information systems will not be, nor need to be in place prior to resumption of power operation. This will be a major focus area in the Business Plan.

6. Surveillance Procedure Enhancement Program

A program has been developed to enhance the quality of surveillance procedures at STP. Elements of the enhancement program include the application of human factors principals, verification that the design bases are adequately reflected and the intended function of the procedure can be accomplished. Completion of this program is scheduled for 1996. A prioritized select group of high impact procedures will be upgraded before the end of 1993.

7. Post Maintenance Test Program

Changes in the work control process have placed the responsibility for reviewing and coordinating Post-Maintenance Tests (PMTs) with the OWCG. This transfer of responsibility from the control room staff to a group specifically charted with reviewing and controlling work activities increases the level of assurance that the stated PMT requirements will be sufficient to demonstrate successful completion of maintenance activities. The PMT program is also being restructured to consolidate program information and to better define and communicate testing requirements. Changes to the program will be accomplished by the end of September 1993.

8. Spare Parts Program

Several steps have been taken or are underway to increase spare parts availability and reduce maintenance delays and disruptions caused by unavailable, incorrect, or degraded spare parts. These include:

- Changed policy on parts procurement to buy when jobs are planned; previous policy waited for jobs to be scheduled.
- Increased inventory on soft parts (o-rings, gaskets, etc.)
- Provided additional Material Engineers to Planning to address material issues more quickly.
- Enhanced Maintenance Job Familiarization Course by focusing on current areas of concern in the materials area.
- Initiated training of Planning personnel on tools available for parts sourcing and how they work.
- Streamlined procurement process to reduce processing time.
- Performance measures are being established to measure success in making parts available.
- A plan for enhancing technical database information is being developed (Begin implementation by December 1993).
- In-storage maintenance on warehouse inventory is being evaluated.

Longer term plans that will be addressed in the Business Plan on an ongoing basis include:

- Continue to identify and implement improvements on parts availability.
- Establish a comprehensive station critical spares list and appropriate availability.
- Provide improved information to the station on materials to support requirements.

These actions will assist in maximizing equipment availability and contribute to reduction of the maintenance backlog.

9. Operations Policies and Practices

Changes have been made to the Operations Policy and Practices Manual administrative procedure to establish better controls on the use of memoranda for establishing operating policy. These changes require that:

- a. Information that could potentially be a Technical Specification Interpretation (TSI) shall not be approved as policy until the information is formally routed through the TSI evaluation process.
- b. Memoranda (from whatever source) that are potentially TSIs shall be formally routed, by the initiating authority, through the TSI evaluation process
- c. The Operations Policies and Practices Manual is routinely reviewed and appropriate memoranda are incorporated. The Memorandum and Night Orders sections are also reviewed and appropriate items are incorporated into the Policies and Practices section of the manual.

10. Employee Concerns and SPEAKOUT

Several steps have been taken or are underway to assure that South Texas Project employees are encouraged to bring forward any safety concerns that they may have and that those concerns are appropriately responded to. These include:

- promulgation of an upgraded site policy regarding the obligation to bring forth concerns and ensuring an appropriate response (completed).

- providing site supervisors and managers with training on their responsibility to properly address concerns and avoid any action that might create a perception that concerns should not be raised (completed).

- conduct of a seminar for site supervisors and managers by the Group Vice President, Nuclear to reinforce HL&P policies regarding responsiveness to concerns and avoidance of any real or potential "chilling effects" (completed).

- communication to site personnel through "Compliments and Concerns" meetings, site newspaper articles, and videotapes of HL&P's policy that those who bring forward safety concerns are contributors who have the full support of site and corporate management (ongoing).

- performing a third-party evaluation of the South Texas Project employee concern program, SPEAKOUT, to determine whether improvements might be made to make the program more effective (evaluation commenced August 1993; final report due in October 1993).

It is expected that communication and training to reinforce HL&P's policies with respect to raising and responding to safety concerns will continue to be addressed through actions described in the Business Plan.

Figures

UNIT 1 REFUELING ACTIVITIES UP TO POWER ASCENSION

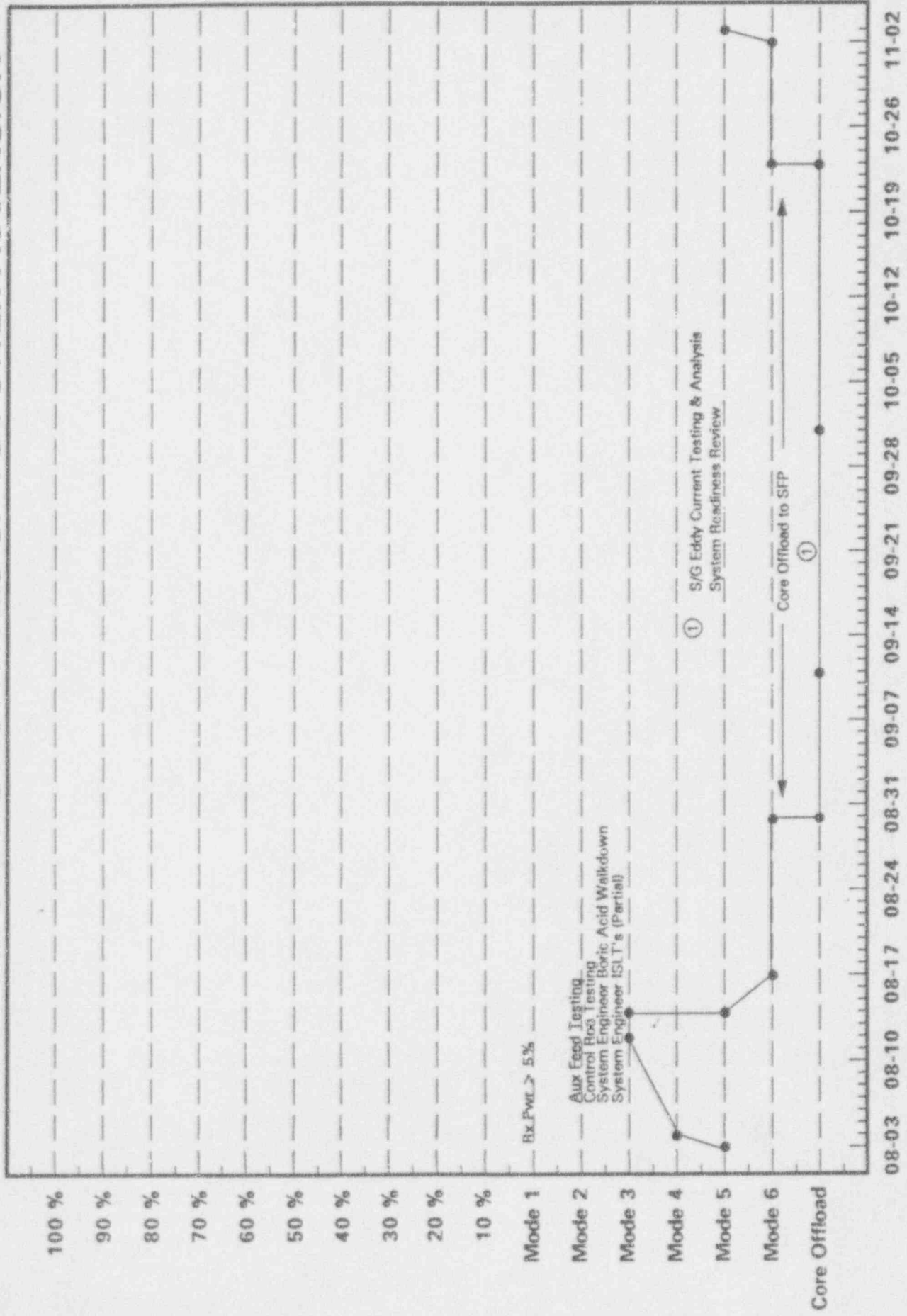


FIGURE 1

UNIT 1 POWER ASCENSION

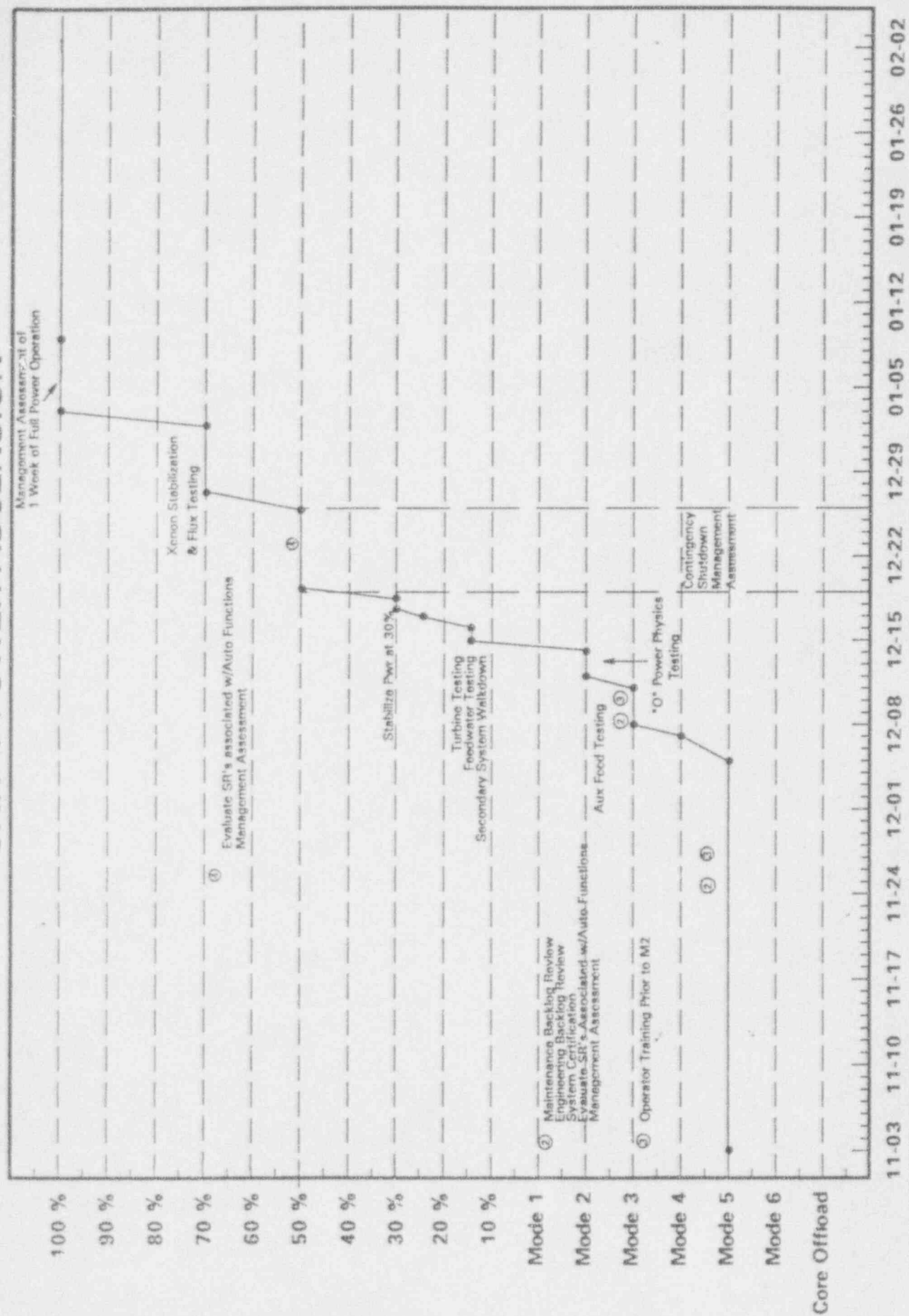
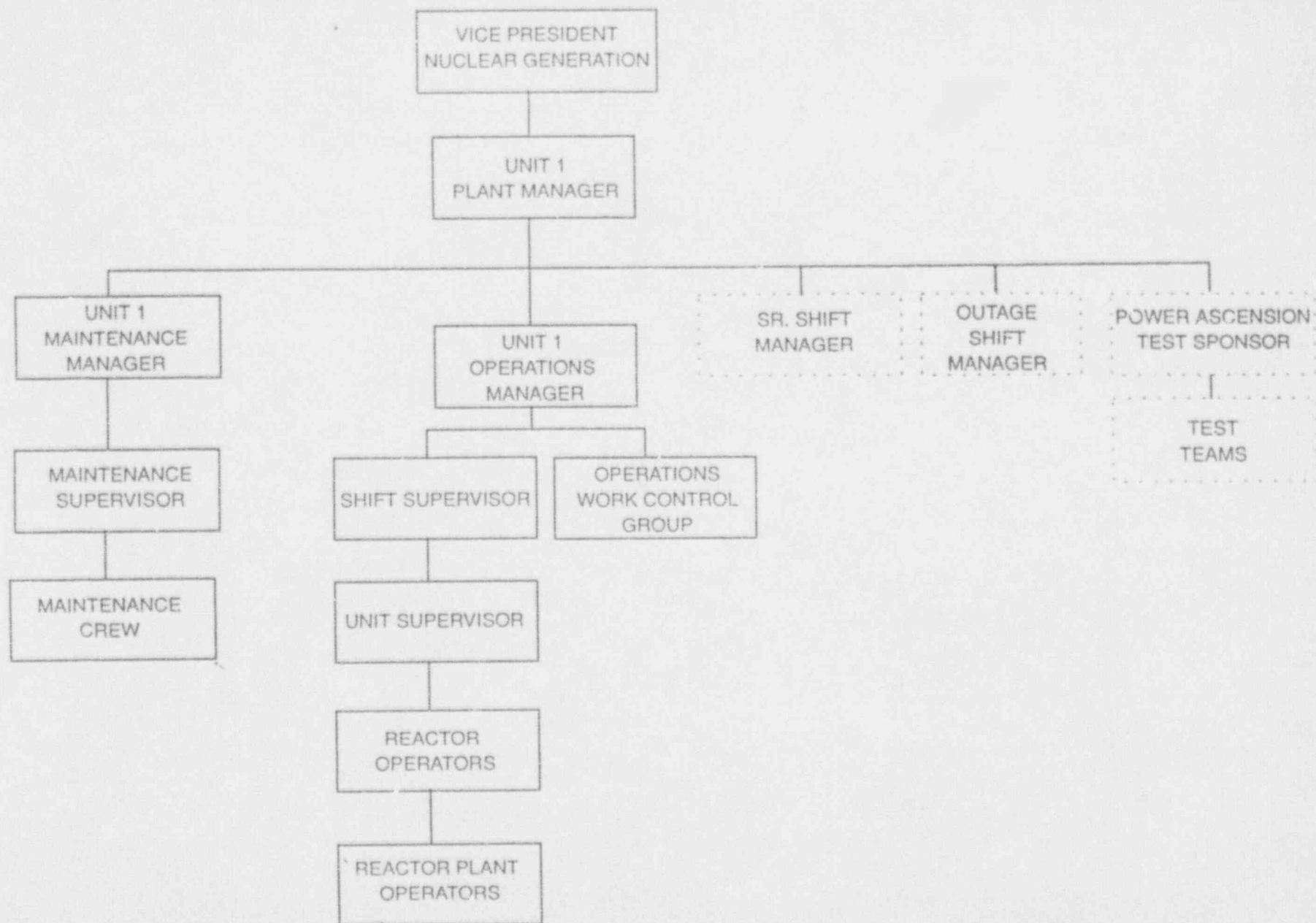


FIGURE 2

UNIT 1 POWER ASCENSION ORGANIZATION



— Permanent Positions
- - - Start-up Augmentation

FIGURE 3

SOUTH TEXAS PROJECT NUCLEAR GROUP ORGANIZATION March 31, 1993

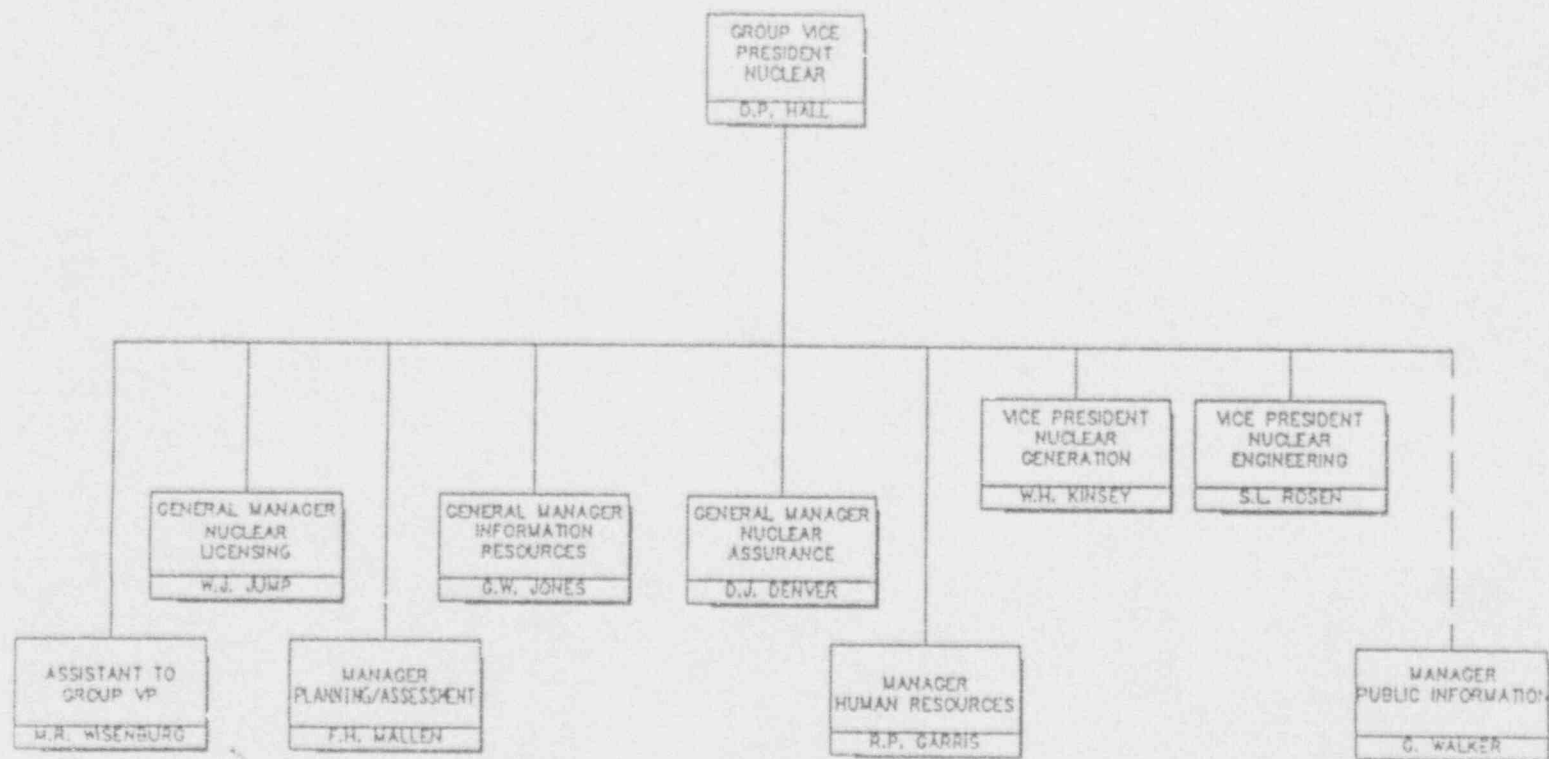
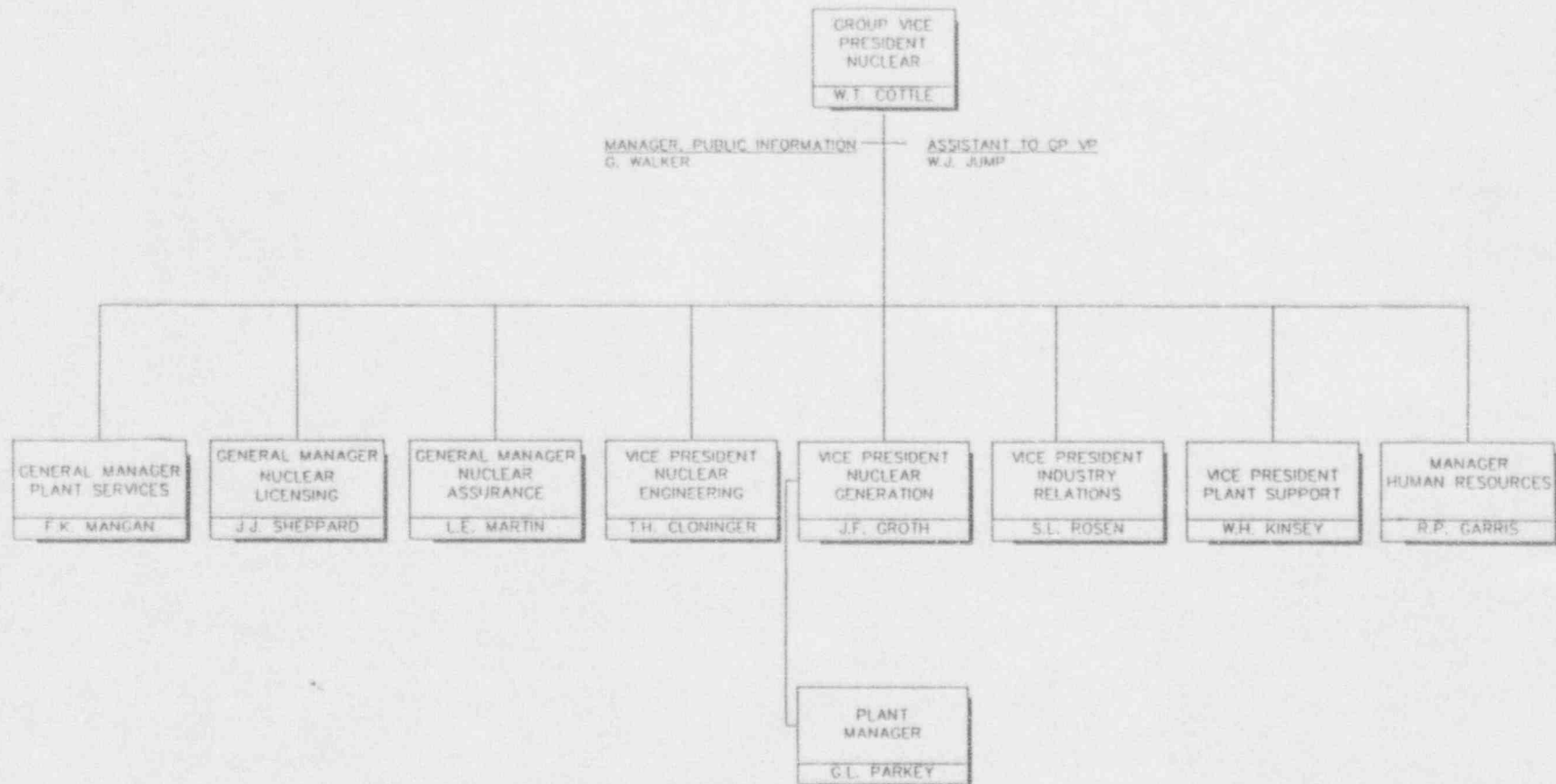


FIGURE 4

SOUTH TEXAS PROJECT
NUCLEAR GROUP ORGANIZATION
August 3, 1993

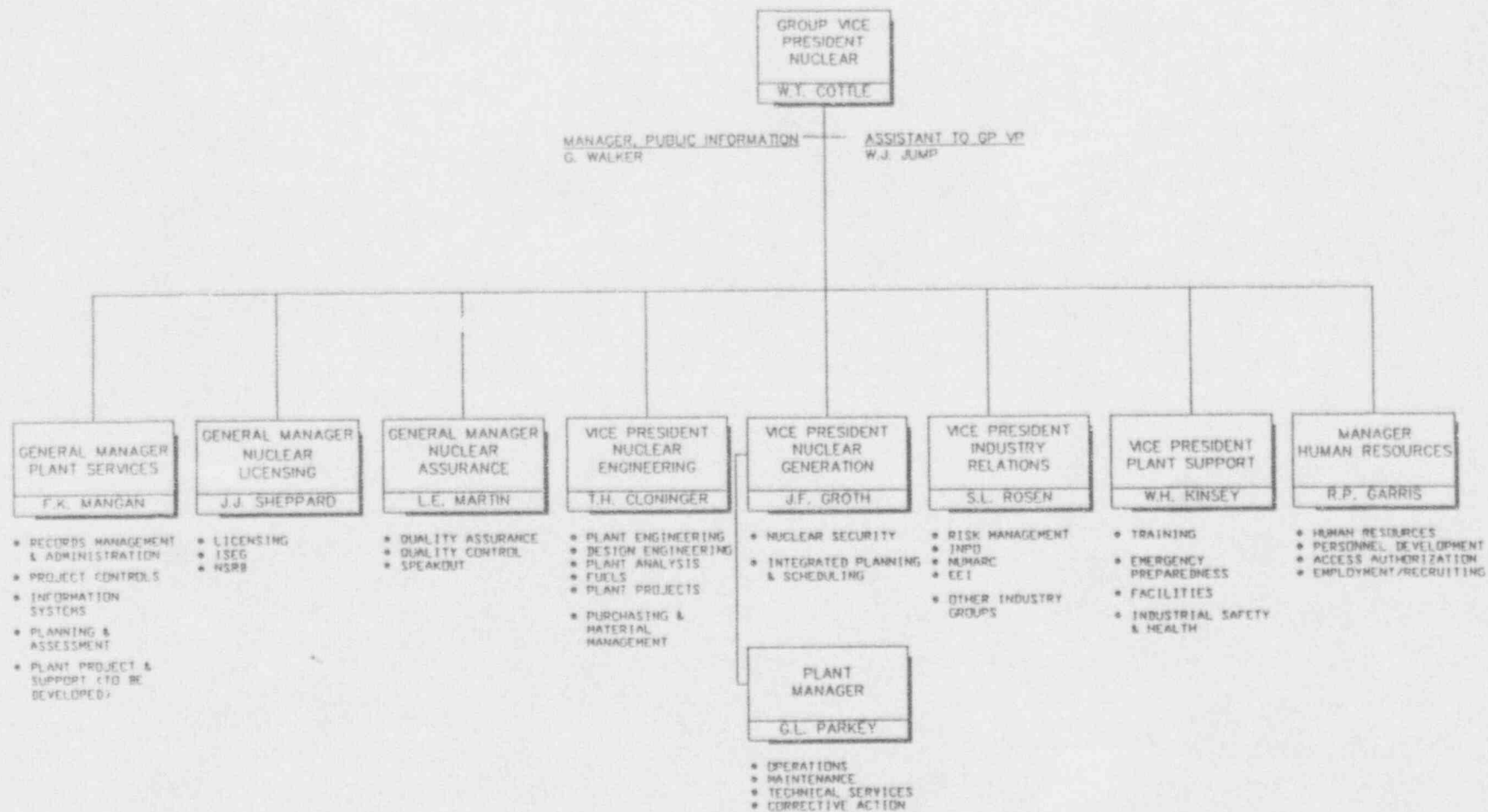


STP 0-0717C.DWG
REV 13

FIGURE 5

SOUTH TEXAS PROJECT NUCLEAR GROUP ORGANIZATION

August 3, 1993



STP 0-0717C.DWG
REV 12

FIGURE 6

NUCLEAR GENERATION

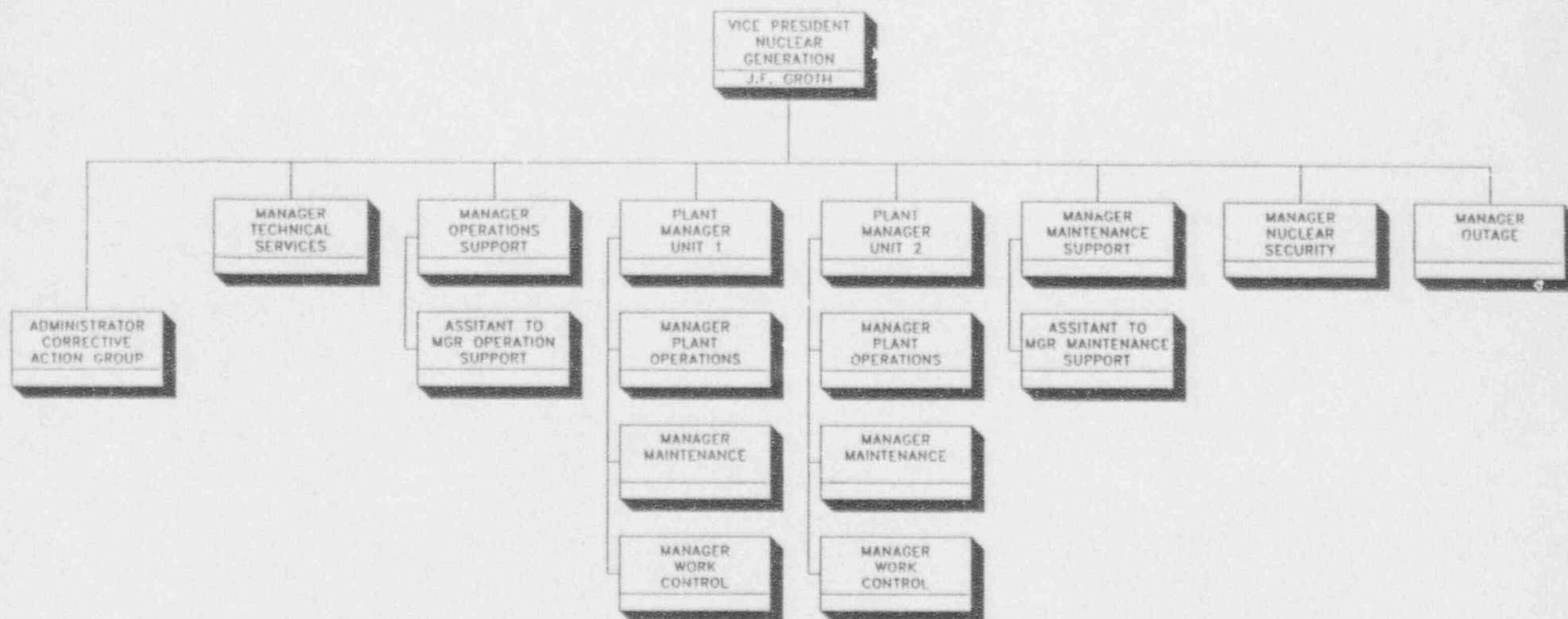


FIGURE 7

Operational Readiness Plan

Action Summary

OPERATIONAL READINESS PLAN ACTION SUMMARY

I. INTRODUCTION AND PURPOSE

- | | |
|---|--------------|
| 1. The STP Business Plan will address the longer term actions being taken to ensure the root causes of STP's performance problems are corrected. | October 1993 |
| 2. In order to assure sustained focus on long-term improvements, activities in the Operational Readiness Plan which require further action beyond the time of resumption of power operation are also addressed in the Business Plan. | October 1993 |
| 3. STP management will be deliberate and conservative in implementing the Operational Readiness Plan and will not return either unit to service until it is satisfied that the unit can be returned to power and operated safely and reliably over the long-term. | Ongoing |
| 4. The NRC will be kept informed of progress in the development of these procedures and the implementation of this plan through regularly scheduled status meetings and, as appropriate, through the Senior Resident Inspector's office. | Ongoing |

II. INTEGRATED SCHEDULE FOR RETURN TO POWER OPERATIONS

- | | |
|---|-----------------------------------|
| 5. Specific detailed (Level 2) schedules to support the critical path schedule milestones are under development. These schedules are expected to be completed in September 1993. | September 1993 |
| 6. Power ascension will be coordinated by Power Ascension Test Sponsors who will report directly to the Plant Manager. | Required prior to power ascension |
| 7. Senior Shift Managers will provide continuous management representation and presence during selected evolutions throughout the power ascension program. The Senior Shift Manager's primary function will be to ensure that the exercise of command and control authority of licensed operators is not diluted by the increased level of activities. The Senior Shift Manager will also be responsible for assessing the conduct of Operations, Maintenance and other support groups. | Required prior to power ascension |

III. MATERIAL CONDITION AND EQUIPMENT READINESS

A. SYSTEM CERTIFICATION PROGRAM

- | | |
|---|---------|
| 8. Material readiness of the plant systems or components important to safety or that have had performance problems in the past will be compared to objectives and measurable criteria throughout the certification process. | Ongoing |
|---|---------|

9.	The selection methodology for including systems or portions of systems in the certification process will be based on: <ul style="list-style-type: none"> Use of Probabilistic Risk Assessment tools Use of a Failure Mode Analysis on systems that could cause plant trips Defining systems with known performance deficiencies 	Required prior to system walkdown
10.	A preliminary set of key systems, subsystems, and components has been developed. The final certification population and the selection evaluation will be documented in an Engineering Report.	October 1993
11.	The certification and acceptance process will be procedurally controlled and documented by two procedures. One procedure will define a comprehensive package that demonstrates that each key system has been adequately reviewed and that any outstanding items have been appropriately evaluated and dispositioned. A second procedure will be developed that will require a comprehensive walkdown followed by acceptance of the system by the Plant Manager.	October 1993
12.	The system readiness concept will be carried through to the completion of power ascension testing by assuring that systems are ready for identified plateaus. Feedback from system operating experience during this period will be used to redirect any necessary Engineering or Maintenance actions to resolve system performance deficiencies or execute other corrective measures.	Ongoing
B. MAINTENANCE BACKLOG MANAGEMENT		
13.	A comprehensive review of the maintenance backlog will continue until station goals in this area are achieved.	Ongoing
14.	A new methodology will be developed to properly characterize the existing maintenance backlog and newly generated SRs.	September 1993
15.	Improvements in the scheduling process, improved coordination between planners and spare parts engineers, the evaluation of each SR for characterization, and increased management emphasis will be required to and continuing after resumption of power operation.	Ongoing
16.	One vehicle for management oversight is the analysis of the overall numbers. This will be accomplished with support for continuing SR generation to encourage continuous improvement in overall plant material condition.	Ongoing
17.	Target values or trends for each indicator for measuring maintenance effectiveness will continue to be evaluated as the unit prepares for the resumption of power operation.	Ongoing
18.	Progress toward goals for maintenance backlog management will be measured by analysis of the input rates, proper characterization, the overall workoff rates, the types of work being accomplished and input from plant personnel.	Ongoing
19.	The current goal for Unit 1 and common power block SRs is below 1000.	Required prior to resumption of power operation
20.	The current goal for Unit 2 power block SRs is below 850.	Required prior to resumption of power operation
21.	There will be no outstanding SRs that adversely affect plant safety or reliability (Priority 1 and 2).	Required prior to resumption of power operation

C. ENGINEERING BACKLOG MANAGEMENT

22.	In accordance with initiatives to be included in the Business Plan, management will continue to focus on Engineering backlog issues following resumption of power operation through establishment of long term performance criteria and goals for each backlog type.	Ongoing
23.	STP Engineering management will periodically review with the NRC the status of the engineering backlog management program and of any backlog items not meeting the criteria for resumption of power operation.	Ongoing
24.	All Engineering backlog items that do not meet these general criteria will be completed: <ul style="list-style-type: none"> a. Open engineering work items that do not adversely affect plant material condition as determined by the size and age of the particular backlog. b. Open engineering work items that have no significant impact on safety-related equipment or system operability. 	Required prior to resumption of power operation
25.	Additional backlog reduction goals for resumption of power operations established for design/physical changes are: <ul style="list-style-type: none"> Reduction in the number of undispositioned non-conforming Plant Change Forms (PCFs) to less than 50 that are greater than 30 days old. Reduction of 15 Temporary Modifications from the current level of 24 installed for greater than six months for Unit 1 and Common. 	Required prior to resumption of power operation
26.	Additional backlog reduction goals for resumption of power operation established for engineering evaluations are: <ul style="list-style-type: none"> Demonstrate progress on completing a general backlog reduction from a peak value of approximately 1400 items down to 600 items by the end of 1993. No OERs, SPRs, DCRs, or non-design change PCFs greater than one year old without an engineering evaluation. 	December 1993
27.	Additional backlog reduction goals established for administrative/programmatic changes are: <ul style="list-style-type: none"> Update the 311 vendor documents with five or more open amendments that have been identified by Operations and Maintenance as impacts on their performance. Update key control room design drawings. No Master Parts List Change Forms open greater than 60 days. Demonstrate progress on reducing PM and SR history backlogs from 6100 to 200 by the end of 1993. 	December 1993
28.	The additional backlog reduction goal established for carryover items from past programs is to either complete the engineering work product or convert the item to a current work program.	Required prior to resumption of power operation

D. SPECIFIC EQUIPMENT ISSUES

29. The TDAPW pumps will be subjected to an augmented surveillance program that will confirm the reliability of the equipment.
Resumption of power operation
September 1993
30. Engineering is performing calculations, related to the Essential Chilled Water System, which will provide the basis for evaluation and analysis of minimum and maximum chilled water loads under a range of weather-related conditions and postulated design basis accidents. Strategies will be developed to operate and test the system, and an evaluation of proposed chiller enhancements will be completed.
31. Ensure that the essential chillers are capable of performing their design function.
Required prior to resumption of power operation
March 1995
32. Reliability of the TSC diesel generator power distribution breakers and exposure to the environment of the skid-mounted will be addressed by planned modifications to the equipment. Modifying the TSC diesel generator to improve environmental protection requires enclosing the skid area, and will be completed within 18 months.
33. The status of the TSC diesel will be evaluated as part of the assessment process prior to the resumption of power operation.
Required prior to resumption of power operation
34. All SRs involving automatic functions will be evaluated and necessary work performed to ensure that no significant impact on system operability or operator burden exists. Any remaining inoperable automatic functions will be analyzed in the aggregate to ensure safe, reliable plant operation will not be unacceptably impacted.
Required prior to resumption of power operation
35. The status of the solenoid-operated valve issues will be evaluated as part of the assessment process.
Required prior to resumption of power operation
36. Management will review the number of components on increased surveillance testing frequency to ensure that the burden on operations and maintenance relating to the testing of these components will not adversely affect the safe operation of the plant.
Required prior to resumption of power operation
37. The plant modification for permanent flow instrumentation in the APW system will be installed.
Required prior to resumption of power operation
38. Precision calibrations are being performed on the installed flow instruments in the component cooling water heat exchanger outlet to the essential cooling water system to preclude having to use temporary flow instruments.
Required prior to resumption of power operation
39. Design Changes or Plant Change Forms have been initiated to eliminate the use of temporary flow instruments or temporary pressure gages in the surveillance tests for the following systems: Essential Chilled Water, High Head Safety Injection, Spent Fuel Pool Cooling, and Screen Wash Booster Pumps. The status of these changes will be evaluated as part of the assessment.
Required prior to resumption of power operation

IV. ASSESSMENT PROCESS

40. The assessment process will evaluate and determine the acceptability of continued operation at specific milestones including: prior to Mode 4, prior to criticality; power ascension above 50% power; completion of the first week of full power operation; after maintaining full power for one month; as determined thereafter. The process will include involvement of line and senior management, station assessment oversight groups (e.g. NA, ISEG, PORC, NSRB, P&A) the Operational Readiness Review Panel, outside consultants, and industry groups (such as INPO), as determined by STP executive management.

Ongoing
41. In order to assure a consistent and integrated approach to the internal assessment process, a Line Management Assessment Plan will be prepared by line management and approved by the Group Vice President, Nuclear prior to core reload. Conceptually, the plan will consist of the following elements:
 - Line managers with assessment responsibilities associated with resumption of operations will be defined.
 - Assessment points or plateaus will be defined from core reload to 100% reactor power.
 - Line managers designated above will prepare self-assessment checklists/plans for their functional area for each of the assessment milestones. These checklists/plans will address the hardware, program and performance issues described in this Operations Readiness Plan, including issues described in the NRC's Confirmatory Action Letter and its Supplement and appropriate issues for the DER. The checklists will both review performance to date and readiness to proceed to the next plateau.
 - Prior to advancing beyond any assessment milestone, the checklists for that plateau will be completed and reviewed. The PORC will review the checklists for those functions that directly report to or support the Plant Manager's organization. The ORRP will review the results of the PORC review and checklists from functions that are outside the Plant Manager's organization, e.g. Nuclear Licensing.
 - Collectively, the Plant Manager and ORRP will report to the Vice President, Nuclear Generation and the Group Vice President, Nuclear on performance to date and readiness to proceed to the next plateau. They will also provide a recommendation on whether or not to proceed to the next plateau.
 - The Vice President, Nuclear Generation will recommend and the Group Vice President, Nuclear will approve proceeding to the next plateau.
 - After reaching 100% power, an overall critique of the process will be conducted by the Vice President, Nuclear Generation. Lessons learned and recommendations from that critique will be factored into the plan for the follow-on unit.

Required prior to core reload
42. In addition to the Line Management Assessment Plan, an Independent Assessment Plan will also be prepared and approved prior to core reload. Conceptually, this plan will address the following:
 - An integrated surveillance/observation plan for internal, e.g. QA, Assessments, and ISEG, and external groups, e.g. INPO, for specific plant events. This process will be managed and coordinated by Nuclear Assurance Department.
 - A review of the Line Management Assessment Process at each assessment plateau. The plan will contain specific criteria for the assessment of the process. The General Manager-Nuclear Assurance will give the Group Vice President, Nuclear an independent opinion on readiness to proceed to the next plateau as an input on each plateau decision.
 - Prior to ascending to Mode 4 and prior to criticality, the independent members of the NSRB will conduct a review of the decision/assessment process to date and provide that input to the General Manager-Nuclear Assurance.
 - After reaching 100% power, the General Manager-Nuclear Assurance will conduct a critique of the independent assessment process and provide a report on the lessons learned and recommendations on improvements for the follow-on unit.

Required prior to core reload

V. SPECIFIC OPERATIONAL READINESS ISSUES

A. MANAGEMENT STRUCTURE AND EFFECTIVENESS

- | | | |
|-----|---|---|
| 43. | Major changes are underway within the operational organizations in Nuclear Generation. The thrust is to utilize the Operations and Maintenance organizations to provide more organizational focus and to shorten communication chains within the organization. | Required prior to resumption of power operation |
| 44. | The Business Plan will be a management tool that provides for "top down" communication of high level strategies and expectations in the form of the facility Vision, Mission and Objectives. The Business Plan is a comprehensive improvement plan for STP and will incorporate and supersede outstanding items from the Master Operating Plan that was used previously at STP. | Ongoing |
| 45. | The Group Vice President, Nuclear has initiated an ongoing series of meetings with employees called "2 C's" meetings. In these meetings, which provide the opportunity for candid discussion, employees are invited to address Compliments and Concerns to the Group Vice President, Nuclear. | Ongoing |
| 46. | Over the next several months, a series of videos is planned to inform employees of key efforts underway as well as management goals and expectations. | Ongoing |
| 47. | The Site Management and Department Management Teams were formed primarily to support the development of the Business Plan. However, they are proving to be an important means for vertical communications between senior and middle management, and for horizontal communications between departments and, therefore, will remain in effect and be utilized for other purposes in the future. | Ongoing |
| 48. | The effectiveness of the Department Management Team and the Site Management Team will be periodically evaluated by STP senior management. | Ongoing |
| 49. | To provide additional operations expertise, STP has initiated an SHG certification program that can be conducted two or three times per year. | September 1993 |
| 50. | The Business Plan will address the H&LP resources necessary for the sustained safe operation of STP. | Ongoing |

B. ORGANIZATIONAL READINESS

- | | | |
|-----|--|---|
| 51. | A six-crew operating schedule will be implemented. Each crew will consist of five licensed and five non-licensed operators. | Required prior to resumption of power operation |
| 52. | The Business Plan will provide for the development of a long-range staffing and development plan. This plan will address optimum staffing levels, definition and establishment of an "operator pipeline," and the establishment of interdepartmental rotation opportunities for Operations personnel. | October 1993 |
| 53. | A program modification to the Fire Protection Computer revising over 1000 alarm messages to a more user friendly format which provides the type and location of each alarm device and automatically provides a hard copy printout of the associated Fire Pre-Plan document number for ease of reference will be installed. | Required prior to resumption of power operation |

54.	Longer term improvements in connection with the Fire Protection Computer will be addressed in the Business Plan which will provide adequate assurance of system reliability and usability until the scheduled replacement of the Fire Detection Computers.	December 1996
55.	To fully comply with software QA requirements, a project has been initiated to validate the Operations software and associated databases.	April 1994
56.	To enhance operational emphasis on safety-related and power block operations and to further reduce the burden on the operators, the responsibility for non-safety related support systems outside the protected area will be transferred to the Technical Services Department.	Required prior to resumption of power operation
57.	Additional personnel from the Technical Services Department will be qualified as Fire Brigade Leaders to reduce the dependence on Plant Operations to fulfill this response duty.	March 1994
58.	Operators will receive specific training which, as a minimum, will consist of: 1) Performance on the simulator of a reactor startup and a plant startup from Mode 4 to turbine roll with performances of surveillances and malfunctions. At power casualties will be included. 2) Training on modifications made during the outage	Required prior to resumption of power operation
59.	Typically assign two supervisors for each maintenance crew: one supervisor to provide enhanced field management of the crew and the other to plan the work for the next week.	Required prior to resumption of power operation
60.	An aggressive training schedule for Maintenance personnel has been implemented to address two weaknesses: less than adequate understanding of plant systems and an insufficient number of certified journeymen to accomplish routine tasks.	December 1993
61.	Training using ACAD 90-10, "Guidelines for Maintenance Supervisor Selection and Development," has been completed for Mechanical supervisors and is will be completed for Electrical and I&C Supervisors.	December 1993
62.	Criteria for Maintenance Effectiveness and Material Condition No outstanding SRs that affect unit safety or reliability - No Priority 1 and 2's. Demonstrate ability to manage maintenance workload - Total open SRs meets goal (less than 1000 in Unit 1) and workload rate trend remains positive. Changes in SR generation rate are evaluated and understood to ensure threshold for deficiency identification is acceptable - (SR generation rate is consistent with plant condition). PM deferrals analyzed and corrective actions in progress - Goal (less than 20) met and trend remains positive. Main Control deficiencies - Goal (less than 10) met and trend remains positive. Inoperable control functions - Aggregate do not adversely affect operations ability to perform quality rounds and handle normal work load. Positive trend resolving inoperable functions.	Required prior to resumption of power operation
63.	The System Engineering Guidelines will be revised to incorporate the newly defined division of responsibilities document.	September 1993
64.	The System Walkdown and Health Report Guidelines will be revised consistent with the System Engineer Responsibilities document to clarify the scope and frequency of system walkdown and health reports.	September 1993

65.	As a result of the Engineering Support target audience testing, orientation training has been scheduled for System Engineering personnel with identified knowledge deficiencies. This training will be complete for incumbents.	December 1993
66.	Position-specific qualification cards have been developed and will be used with the training program in general to ensure that the System Engineer meets minimum qualification standards. Incumbent System Engineers will be evaluated using the new qualification card criteria.	December 1993
67.	Personnel assigned after January 1993 will qualify as System Engineers in accordance with the ESF program.	Ongoing
68.	System Engineer Training Guidelines will be issued. This document will outline the implementation and development guidelines for establishing a "system expert" level of qualification. The implementation process will begin immediately with full implementation across the entire System Engineering organization. This includes specific training, both onsite and offsite, which has been identified and budgeted in 1994.	September 1993
69.	A qualification card method will be used to ensure that the Systems Engineers have received the appropriate training.	Ongoing
70.	Training effectiveness criteria are being incorporated into the training plan and will include monitoring the training provided, evaluation of course performance, evaluation of job performance, and review of station events and performance causes or contributors.	Ongoing
71.	Customized computer software to support system performance monitoring, including acquisition and processing of plant performance data.	December 1993
72.	A test system for the system performance software will be initialized onsite.	Required prior to resumption of power operation
73.	The overall ability of Nuclear Engineering Management to manage the required work load has been enhanced through assignment of a new Vice President, Nuclear Engineering with further improvement following a comprehensive realignment of the Engineering organization to be completed prior to resumption of power operation.	Required prior to resumption of power operation
74.	During the plant startup, Engineering will provide 24-hour on-shift support to facilitate effective interface between Operations, Maintenance, and Engineering. This will be accomplished by 24-hour staffing of the Technical Support Engineering organization. The on-shift staff will have direct access to Design Engineering and other components of the Engineering organization on an as-needed basis throughout the startup phase.	Required prior to startup
75.	Dependence on Architect Engineers will be reduced by ensuring that proper actions are taken to develop a more self-sufficient Engineering organization.	Required prior to resumption of power operation
76.	As part of the effort to reduce the burden on the Operations staff and to allow them to focus on the power block, the Technical Services Department will be assuming the responsibility for certain tasks that are outside the protected area.	Required prior to resumption of power operation
77.	Technical Services will further support Operations by qualifying more personnel as Fire Brigade Leaders.	March 1994

C. OTHER PROGRAM ENHANCEMENTS

78. STP will ensure that line management ownership of the corrective action process is established, necessary enhancements to the SPH process are implemented and proven, and any existing backlog of SPH actions are assessed for potential impact on equipment operability and safe plant operation.

79. Relabeling program requirements will be in place and a pilot program involving the Standby Diesel Generators will be completed.
December 1993
80. A comprehensive relabeling program incorporating the guidelines of INPO Good Practice OP-208, "System and Component Labeling," and EPRI NP-6209, "Effective Plant Labeling and Coding," is being implemented. The program will encompass valves, major components, electrical distribution, piping, and miscellaneous components and will result in labeling that will reduce errors by the use of color coding, consistent nomenclature, bar-coding (future applications) and identification of special functions. Because the relabeling program will be a long-term, resource-intensive project, it will be headed by an STP Project Manager, but will be primarily staffed by contract personnel.
December 1995
81. Changes to the locked valve program are being implemented. Changes are based on recommendations made after an INPO-assisted root cause analysis. The new program will involve approximately 800 fewer valves.
December 1993
82. A business plan strategy has been developed to address plant reliability improvement. The strategy will assess the existing PM and Reliability Centered Maintenance (RCM) programs to foster the development of a comprehensive reliability-based predictive/preventive maintenance program with a documented basis. The strategy will also provide for a review of all existing PMs to ensure they are applicable and effective and the PM program process, including software, to identify elements that require enhancement. This effort will be accomplished through an integrated approach composed of the performance of detailed EPRI-style RCM on approximately ten systems, streamlined RCM on approximately forty systems, and a comprehensive review of PM tasks to develop a complete PM basis.
October 1993
83. The scope of the PM action plan also includes the disposition of a large portion of the current PM feedback workload, the evaluation of organizational and procedural changes to consolidate station PM-related activities, and the expanded use of predictive maintenance and operator logs to facilitate the use of condition-directed tasks based on observed equipment condition. This effort will result in an optimized PM program that focuses maintenance on the structures, systems and components that are critical to the availability and reliability of the plant.
October 1993
84. STP is currently conducting a major effort to improve the management information systems that support the facility. To this end the following actions are being taken:
December 1993
 - 1) Action is being taken to extend the local area network into the power block to improve its overall access and performance.
 - 2) Plans have been developed to implement an integrated mainframe database and associated application software to support station work processes. A plan for conversion to this system is in progress. This plan will address data validation as appropriate.
85. A select group of high impact surveillance procedures will be upgraded before the end of the year.
December 1993
86. A program has been developed to enhance the quality of surveillance procedures. Elements of the program include the application of human factors principles, verification that the design bases are adequately reflected, and the intended function of the procedure can be accomplished.
December 1996
87. The Post-Maintenance Test program is being restructured to consolidate program information and to better define and communicate testing requirements.
September 1993
88. A plan for enhancing the spare parts technical database information is being developed.
December 1993
89. Longer term plans for the spare parts program that will be addressed in the Business Plan on an ongoing basis include:
October 1993
 - Continue to identify and implement improvements on parts availability.
 - Establish a comprehensive station critical spares list and appropriate availability.
 - Provide improved information to the station on materials to support Station requirements.
90. A third-party evaluation of the STP employee concern program, SPEAKOUT, will be performed to determine whether improvements might make the program more effective (evaluation commenced August 1993).
October 1993