

CP&L

Carolina Power & Light Company

P. O. Box 1551 • Raleigh, N. C. 27602

JUL 23 1992

SERIAL: NLS-92-160

R. A. WATSON
Senior Vice President
Nuclear Generation

Mr. Stewart D. Ebnetter
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BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REPLY TO NRC INSPECTION REPORT NOS. 50-325/90-12 AND 50-324/92-12

- REFERENCES:
1. Letter from Mr. S. D. Ebnetter (NRC) to Mr. R. A. Watson (CP&L) dated May 27, 1992, Inspection Report Nos. 50-325/92-12 and 50-324/92-12.
 2. Letter from Mr. S. D. Ebnetter (NRC) to Mr. Sherwood H. Smith, Jr. (CP&L) dated June 23, 1992.
 3. Letter from Mr. Sherwood H. Smith, Jr. (CP&L) to Mr. James M. Taylor (NRC) dated September 27, 1989.
 4. Letter from Mr. R. A. Watson (CP&L) to Mr. S. D. Ebnetter (NRC) dated June 26, 1992.

Dear Mr. Ebnetter:

This letter addresses the issues raised in your letters dated May 27 and June 23, 1992. It is also consistent with our presentations to the NRC on May 12 and May 15, 1992 and the contents of our letter of May 29, 1992.

Included are: 1) a statement of CP&L's commitment to improve the Brunswick Nuclear Plant, 2) a description of the Brunswick Plant startup plan, and 3) a description of the Company's long-term improvement program. The enclosures specifically address the four topics outlined in the enclosure to your letter of June 23, 1992.

IMPROVEMENTS COMMITMENT

We are committed to the successful implementation of an improvement program for the Brunswick Plant. This program includes our goals of higher standards for the maintenance and operation of the Brunswick Plant and it establishes the foundation for sustainable levels of good performance over the long term. Resources are being provided to achieve reductions in the backlog of work and to improve substantially the material condition of the plant and its

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equipment. Further, aggressive steps are being taken to establish the correct philosophy of operations and to strengthen work control processes.

In April 1992, after the significance of the structural deficiencies was apparent, CP&L voluntarily removed the plant from service. While making the various structural inspections, we have undertaken a comprehensive review of Brunswick's improvement needs. We are pursuing a rigorous effort to identify necessary repair and modification work needed at the plant. We expect to demonstrate that the plant's material condition has been markedly improved and that the backlog of work has been reduced by completion of our structural reviews which are currently targeted for October 1, 1992 for Unit 2 and November 15, 1992 for Unit 1.

As you know, substantial improvements in several areas were started before the April 1992 structural inspection outage. For example, about 18 months ago, we began a full-scope design basis reconstitution. Also, engineering activities were initiated during the past year to upgrade the electrical distribution system (two startup transformers and a fifth diesel generator). Further, managerial changes were made that strengthened our corporate and site teams. A Supervisory Development Program has been established and construction of a large, permanent office facility on-site is well underway. The improvement initiatives outlined in this report, and others in place and planned, will significantly improve performance and provide the foundation to sustain the improvements.

The improvement program at Brunswick is both an aggressive short-term effort and a comprehensive long-term effort. Successful implementation will require management commitment and follow-through. We have demonstrated a corporate commitment by providing an additional \$200 million to \$225 million over the next five years for improvements, in addition to those included in our five-year business plans. We know changes in managerial effectiveness are required for a long-term solution to challenges at Brunswick. We believe the initiatives set forth in the enclosed Pre-Startup Plan and in the Corporate Improvement Program (CIP) demonstrate our total commitment to improve the material condition of the plant, our business processes and the effectiveness of our work force. In order to assure total corporate involvement, our improvement efforts will be directed by department heads who will be accountable to CP&L's Senior Vice President - Nuclear Generation for the full implementation of action plans and, most importantly, for the achievement of the intended benefits of improvement initiatives. In addition to senior line management, CP&L's Senior Nuclear Advisory Committee (which consists of the Executive Vice President - Power Supply, Executive Vice President - Finance and Administration, Senior Vice President - Legal and Regulatory Services, and the Senior Vice President - Nuclear Generation) will receive periodic reports on the progress and results of the improvement initiatives.

In order to increase the success of this improvement program as compared to the Integrated Action Plan (IAP), a review and analysis of the IAP was conducted with the intent of identifying lessons learned and applying them to the design of the Corporate Improvement Program. The results of this

Mr. Stewart D. Ebnetter
NLS-92-160 / Page 3

assessment will be presented along with further details of our Corporate Improvement Program by the end of August. Enclosure 1 compares our current approach with the approach used for the IAP.

We acknowledge the value of the NRC's current ongoing monitoring of our improvement initiatives, and we will cooperate fully in establishing assessment methodologies that will meet NRC oversight needs.

PRE-STARTUP PLAN

Enclosure 2 outlines our methodology and criteria for defining the work that will be completed prior to startup. The process calls for placing identified work efforts which are not already scheduled for completion during the current outage or new emergent work items into one of seven possible categories and then applying a set of criteria to determine if the work effort should be a pre-startup condition. We have established a multi-disciplined team at the site to implement this process. Work not completed within the pre-startup period will be completed while the plant is on line or during future outages.

Enclosure 3 lists specific work efforts that will be completed prior to startup. The items in the Pre-Startup Plan are either commitments we have made or items that will be managed through application of the methodology and criteria set forth in Enclosure 2. In addition, emerging work and needs identified during the inspections and walkdowns specified in the Pre-Startup Plan will be processed according to the methodology in Enclosure 2.

We have categorized the pre-startup work efforts into the categories identified in the enclosure to your June 23, 1992 letter. Those categories are: 1) equipment corrosion problems, 2) backlogs of deferred maintenance work, 3) potential structural deficiencies related to steel, block walls, and supports, 4) backlog of temporary work-around conditions, and 5) equipment deficiencies discovered during walkdowns. In addition, we have added a sixth category -- other work efforts -- to reflect additional work not covered by the five categories.

More than 600 CP&L and contract personnel have been added to ensure these initiatives are successfully completed. Major staff augmentations are detailed below:

- Three (3) additional CP&L traveling maintenance crews (20 mechanics and 10 I&C personnel) have returned to the Brunswick Plant following work on the H. B. Robinson Plant outage. These crews are home-based at Brunswick, are experienced with Brunswick procedures and routine surveillance testing, and are expert on certain equipment. They are resolving Work Requests/Job Orders and performing surveillance tests.
- Technical support has added six (6) contract engineers to support maintenance activities.

- Approximately 160 contract personnel are either currently on-site or will be shortly to support mechanical, I&C and electrical maintenance, E&RC, Corrective Action Program (CAP), and Operations staff personnel.
- Outage management and modification resources have been augmented by adding approximately 200 craft workers, 34 I&C Technician and 100 general laborers.
- Approximately 125 contract personnel have been brought in to date to support the Nuclear Engineering Department (NED). This supplements the normal staffing level of NED Brunswick Engineering Section personnel, which is approximately 190 people (site and corporate).

Many of the work items listed in Enclosure 3 have already been completed. Also, many work items which could be performed post-startup will, in fact, be completed before startup. Completion of the work items listed in Enclosure 3 will represent a significant improvement in the material condition of the plant. We recognize, however, that a backlog of deferred maintenance and modification work will remain. We will establish an organization dedicated solely to the reduction of this remaining backlog. Prior to startup from the current outage, the backlog items to be assigned to this organization will be specifically identified, and this organization will remain in place until the work items assigned to it are satisfactorily addressed.

CORPORATE IMPROVEMENT PROGRAM

Clearly, the actions required to achieve sustained higher performance levels at the Brunswick Plant are complex and interrelated. In order to fully address this issue, we have initiated the development of a long-term performance improvement plan which is conceptually shown in Figure 1. The primary purpose of the Corporate Improvement Program is to create the foundation for a sustained level of good performance. CP&L's corporate and site management recognizes the degree of change that must occur at the Brunswick Plant to establish this foundation for substantial improvement. The specific objectives of this Corporate Improvement Program represent, in our view, the results this program must achieve. These objectives are:

- Reduce the backlog of work at Brunswick and maintain equipment in accordance with design and operating standards so that the permanent plant staff has the opportunity to focus on managing the safe and reliable operation of the plant.
- Establish and instill a new philosophy of operations in which all employees perform to the high standards necessary to achieve an attitude of continuous improvement in performance.
- Redesign work management processes in order to remove impediments to working efficiently and effectively.

As shown on Figure 1, this program is built on four key initiatives which will guide improvements in management processes, philosophy of operations, and other actions needed to sustain improved performance of the Brunswick Plant. When fully implemented, these improvements will 1) demonstrate management's commitment to high standards for material condition of the Brunswick Plant, 2) illustrate management's strong leadership and support for improving plant performance, and 3) create a strong self-assessment work climate which recognizes problems and implements effective corrective action.

The four key initiatives of the improvement program are described below:

1. We will develop and implement corporate and site standards for the Brunswick Plant, and our other nuclear units, which are higher and more specific than current standards. We will effectively communicate these standards throughout the Nuclear Generation Group organization, integrate them into the work practices of our employees, and monitor performance against them.
2. We will improve and strengthen our planning and action monitoring processes. This will provide heightened visibility as to the accomplishment of planned work and as to the level of effort needed to perform in accordance with standards. We are modifying the processes for identifying, planning, and monitoring improvement projects to support an Integrated Schedule Program (ISP). The initial Brunswick ISP will be submitted in October 1992.
3. We will strengthen the linkage between the planning and budgeting processes to ensure that resources necessary to carry out our plans, and thereby achieve our standards, are clearly identified and provided over the long term. For 1992, we have authorized funds, in addition to the approved budget, for improvements which can proceed immediately. For 1993, we are budgeting our performance improvement projects separately from our routine operations. This enables us to evaluate and fund, as appropriate, an improvement project on its own merits. New direction for our budgeting process has encouraged identification and documentation of additional improvements.
4. Finally, we are also identifying -- and will undertake -- other actions to establish a work climate which consistently encourages effective, critical self-assessment, the identification and resolution of problems by all employees, and secures the commitment of all employees to the achievement and maintenance of the established quality standards. The commitment to more aggressive identification and correction of problems is illustrated by the extensive inspections, repairs, and modifications currently underway. The actions during this current outage are reinforcing the communications to employees that higher standards will be set and achieved, that deviations will be identified, and that resources will be provided to implement prompt corrective actions. In addition, senior management at the site and at corporate will communicate the importance of the timely resolution of problems, hold

Mr. Stewart D. Ebnetter
NLS-92-160 / Page 6

the responsible line and support organizations accountable for meeting commitments to resolve problems, and demand increased monitoring of plant performance and ownership of identified problems by support groups.

Based on these four key initiatives, the Corporate Improvement Program (CIP) for the Brunswick Nuclear Plant consists of 22 specific improvement projects. An executive summary of these projects is presented in Enclosure 4. We recognize that the CIP must reflect our thorough assessment of the root causes of the performance deficiencies at Brunswick. Your reports and our own assessments currently lead us to root causes which are addressed by the four key initiatives discussed above. As a result, we have identified the improvement projects outlined in Enclosure 4. We believe, however, that an additional effort must be made to verify and confirm that we have fully addressed all +. e needs at Brunswick. Therefore, an improvement project to verify root causes has been included in the Corporate Improvement Program. The objectives of this project are to ensure consensus on the root causes at the corporate and site level and to identify and ensure the development and implementation of specific strategies to address those root causes. When the verification is complete, the Corporate Improvement Program will be modified as needed to address additional root cause problems. Other needs may be identified as we proceed with implementation of these projects. We are committed to make other modifications to the improvement program when needed to ensure that we remain focused on the actions required to achieve our objectives.

The Corporate Improvement Program is a corporate initiative. Its successful implementation is the responsibility of the Senior Vice President of the Nuclear Generation Group. We recognize that to sustain a high level of system nuclear performance, we must have a comprehensive program that is implemented consistently in the organizations involved in CP&L's nuclear operations. Thus, while the focus of this letter is on the Brunswick Plant, the Corporate Improvement Program will apply to each of our plants and to the rest of the Nuclear Generation Group.

In addition, steps will be taken to ensure that each project achieves the benefit intended. The Nuclear Assessment Department will provide independent oversight as to the effectiveness of the Corporate Improvement Program. Further, the final step in closing out each project will be a presentation by the manager responsible for the project to the Senior Nuclear Advisory Committee. This presentation will define benefits and will identify the means for ongoing monitoring to ensure that the desired results are maintained.

One of the improvement projects -- the implementation of the Integrated Schedule Program (ISP) -- bears special mention in this letter. The ISP will contain the schedule and resource commitment for Level 1 regulatory commitments, Level 2 commitments in excess of \$250,000, for plant modifications over \$250,000, and for other substantial improvement efforts. The ISP will be updated every six months and provided to the NRC. Overall, the ISP will permit corporate management and the NRC to monitor the completion

of commitments and other initiatives. The ISP will be implemented at all three plants.

An overview of our Corporate Improvement Program is contained in Enclosure 4. By the end of August, a comprehensive presentation will be available to you and your staff on this Corporate Improvement Program. This presentation will cover the administration of this program and will provide specific details on each of the improvement projects.

We are confident that this program will be successful in producing the results which are needed to achieve and sustain a high level of performance. The expected results are:

1. Communication of management expectations and standards through specific work management policies and standards and development of a disciplined oversight program to ensure that corporate management closely monitors efforts to implement and sustain these standards.
2. Increased corporate and site management involvement and oversight with particular emphasis on past chronic performance concerns and on improved communication between plant management and corporate management.
3. Improved management effectiveness at the Group and Department level, especially with respect to communications, positive leadership, and the establishment of a clear hierarchy of administrative policies and procedures.
4. Improved work control processes resulting from the near-term implementation of recommendations of the Staff Assistance Team and the longer term redesign of the maintenance management process and the engineering analysis and modification process.
5. An improved self-assessment and corrective action program. The improvements will be built upon a root cause analysis to determine why the existing procedures have not been effective and the implementation of appropriate changes based upon that assessment.
6. Improved plant material condition through the significant reduction of existing backlogs, the establishment of an organization for further reductions of the current backlog, and the establishment of appropriate standards to facilitate the future management and control of backlogs.
7. Improved personnel development and training which will increase the effectiveness and capability of management and non-management personnel. This result will flow from the implementation of a Supervisory Assessment Center to identify candidates for supervisory positions, the continued implementation of a Supervisory Development Program to provide supervisory candidates training in the skills needed to be effective, and the restructuring of the technical training program to increase the effectiveness of the skills and hands-on training activities.

SUMMARY

CP&L is committed to provide the resources necessary to implement promptly and effectively the improvements which are necessary to achieve sustained, high levels of performance at the Brunswick Plant and to meet all regulatory requirements. Over the next five years, the Company has committed over \$200 million to improve the Brunswick Plant, over and above the substantial financial resources previously approved in the Brunswick Plant business plan for this period.

We believe that the actions described above will enable the Brunswick Plant to achieve a long-term, superior operating performance. We look forward to meeting with you and others in the NRC to review our plans, schedules, and progress.

Yours very truly,



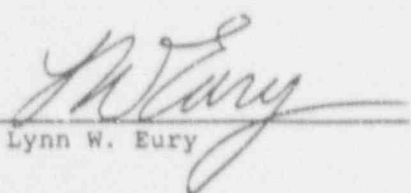
R. A. Watson

PS/ecc

Enclosures

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Sherwood H. Smith, Jr.

CAROLINA POWER & LIGHT COMPANY

JULY 23, 1992

RESPONSE TO NRC

LETTER OF JUNE 23, 1992

CAROLINA POWER & LIGHT COMPANY

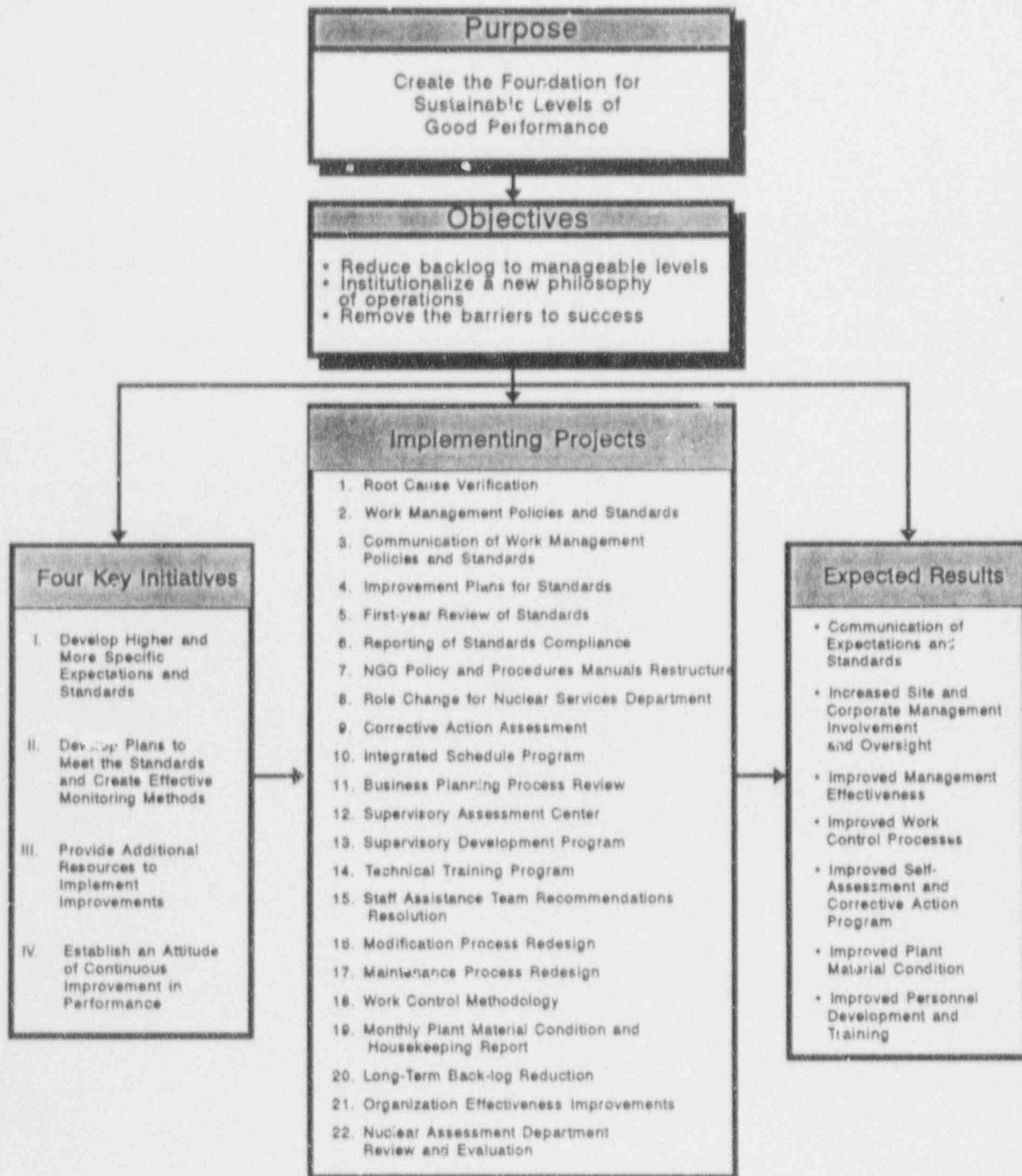
JULY 23, 1992

RESPONSE TO NRC

LETTER OF JUNE 23, 1992

Corporate Improvement Program Brunswick Nuclear Plant Program Overview

Figure 1



ENCLOSURE 1

COMPARISON OF APPROACHES FOR
THE INTEGRATED ACTION PLAN
TO THE CORPORATE IMPROVEMENT PROGRAM

ENCLOSURE 1

COMPARISON OF APPROACHES FOR
THE INTEGRATED ACTION PLAN
TO THE CORPORATE IMPROVEMENT PROGRAM

The Integrated Action Plan (IAP)

The Integrated Action Plan (IAP) was developed by CP&L in 1989 to provide a plan for actions to be taken to correct a variety of issues identified by the Diagnostic Evaluation Team (DET) and by CP&L-initiated audits. While some improvements attributable to the IAP have been noted, the continuing problems described in the NRC letters of May 27, 1992 and June 23, 1992 are evidence that the IAP has not been fully effective in achieving its objectives.

The Corporate Improvement Program For the Brunswick Nuclear Plant (CIP)

The Corporate Improvement Program (CIP) is a broad corporate initiative to address the need for an improved philosophy of operations, a strengthening of corporate involvement, and more effective work control processes to facilitate sustained improvement in operations. The CIP has been structured and designed and will be implemented in a manner that will overcome the identified reasons for the ineffective implementation of some of the initiatives in the IAP.

Key Differences Between the IAP and CIP

Listed below are the essential differences between the IAP and the CIP in their structure and in their implementation approach. CP&L expects that these differences will help to assure that the CIP is totally successful.

- Implementation Approach - The IAP consisted of a large number of individual action plans, and these plans were assigned, typically, to managers within the Brunswick Nuclear Plant. Status reports on implementation usually addressed the completion of tasks but were not necessarily correlated back to the broad root issues. With respect to the CIP, there will be a significantly fewer number of individual projects than was the case for the IAP; but these projects will be, generally, much broader in scope, with much better defined objectives. Also, the projects will be assigned to a department manager or Group Executive, and the projects will not be accepted by CP&L as complete until it has been demonstrated that the desired broad-based result has been achieved. Plant line management will be directly involved in the development of the action plans.
- Corporate involvement - Many of the IAP initiatives addressed Nuclear Generation Group and corporate infrastructure issues, such as policies, standard practices, and generally accepted ways of doing business. Since the action plans were typically the responsibility of managers at the Brunswick Nuclear Plant, it was

difficult to create corporate- or group-level involvement in the solution to issues. Since the CIP will be a corporate initiative with corporate officer responsibility and accountability, the need for corporate involvement is addressed.

- Individual Project Funding - The individual initiatives of the IAP were, from a funding perspective, integrated into ongoing work efforts and budgets of Brunswick Nuclear Plant. In order to ensure that the correct level of resources is made available to support the CIP, individual projects requiring an annual investment over \$250,000 will be identified and will be funded separately. This funding will be over and above the funding for normal operations.
- Dedicated Staff - Implementation of the IAP action plans was, for the most part, a collateral duty for Brunswick Nuclear Plant managers and staff. Significant work efforts in the CIP will receive not only separate funding, but they will have full-time teams and dedicated project managers assigned who have the necessary time to devote to the project.
- Scope, Results Orientation, and Communication - The measures of effectiveness were not defined in advance for the IAP action items. For the CIP, the desired results will be made clear at the outset. This better definition of expected results will then provide the opportunity for improved communication as to the status of the individual improvement projects.

ENCLOSURE 2

METHODOLOGY FOR ESTABLISHING CORRECTIVE ACTIONS
AS PRE- OR POST-STARTUP

ENCLOSURE 2

METHODOLOGY FOR ESTABLISHING CORRECTIVE ACTIONS
AS PRE- OR POST-STARTUP

- A. Outstanding corrective actions are identified and included in a list of work items. Many of these items are scheduled for resolution during the current outage. Some are considered mandatory and are included in the pre-startup list. (Enclosure 3)

- B. Items (such as maintenance, design or structural deficiencies, etc.) which are not currently scheduled on the pre-startup list, or new emergent items, are screened and placed in one of the following seven categories: (See Exhibit E2-1)
 - 1. Actions to meet operability requirements in Technical Specifications
 - 2. Actions to materially improve safety system availability
 - 3. Actions to restore the design bases of the plant
 - 4. Actions to comply with docketed commitments related to the current outage
 - 5. Actions to address operator "work arounds"
 - 6. Actions to materially improve plant operating reliability
 - 7. Other

- C. The screening criteria to determine whether item is pre-startup or post-startup are outlined below:
 - 1. Pre-startup
 - a. Category 1 items.
 - b. Category 2 through 6 actions are pre-startup with the following exceptions:
 - (1) Refueling operational configuration (OPERATIONAL CONDITION 5) is required to implement the action.
 - (2) Engineering is unavailable to support implementation within the established work closeout dates of October 1, 1992 for Unit 2 and November 15, 1992 for Unit 1.
 - (3) Materials are unavailable to support implementation within the established work closeout dates of October 1, 1992 for Unit 2 and November 15, 1992 for Unit 1.
 - (4) Items which cannot be physically accomplished within the established work closeout dates of October 1, 1992 for Unit 2 and November 15, 1992 for Unit 1.

2. Post-startup

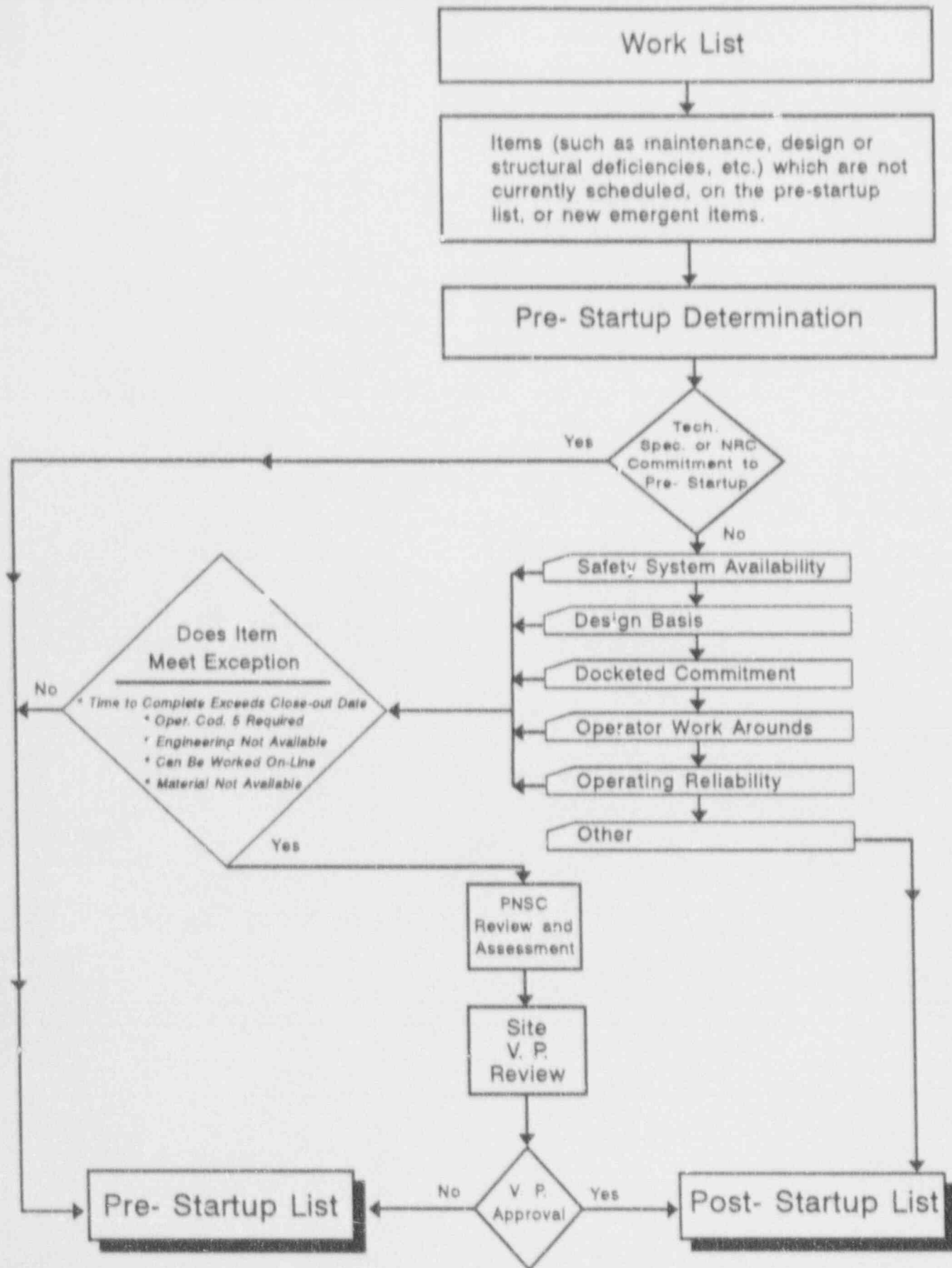
Category 7 items and Category 2 through 6 items by exceptions identified above.

- D. The Plant Nuclear Safety Committee (PNSC) reviews Category 2 through 6 exceptions to evaluate if changes in (a) plant condition, (b) engineering and/or procurement schedules, or (c) planned start-up dates are warranted to complete the action item prior to start-up. Recommendations from PNSC are forwarded to the site Vice President for final approval.

Category 4 recommendations which deviate from docketed commitments related to the current outages will be reviewed with NRC for concurrence.

Logic Process For Distinguishing Pre- and Post- Startup Work Items

Exhibit E2-1



ENCLOSURE 3

PERFORMANCE IMPROVEMENT PROGRAM
SHORT TERM ACTIONS
(REQUIRED PRE-STARTUP)

ENCLOSURE 3

PERFORMANCE IMPROVEMENT PROGRAM
SHORT TERM ACTIONS
(REQUIRED PRE-STARTUP)

The following is a list of actions which will be completed prior to start-up. The list includes work items that are the subject of previous docketed commitments and which have been identified and will be managed using the methodology listed in Enclosure 2. CP&L has identified a significant number of work items that are not considered mandatory but will be done prior to startup.

ENCLOSURE 3

PERFORMANCE IMPROVEMENT PROGRAM
 SHORT TERM ACTIONS
 (REQUIRED PRE-STARTUP)

ITEM NO.	DESCRIPTION	COMPLETION SCHEDULE
A - Equipment Corrosion Problems		
A1	Complete corrosion repairs to existing service water lubrication water piping supports.	Prior to Start-up
A2	Perform a third-party walkdown of non-pipe support short term structural integrity items and pipe supports in areas with high corrosion potential to validate design assumptions. Address any identified deficiencies in accordance with the methodology in Enclosure 2.	Prior to Start-up
A3	Address corrosion repairs of seismic instrument racks in accordance with the methodology in Enclosure 2.	Prior to Start-up
B - Deferred Equipment Maintenance Issues		
B1	Correct the 480 VAC emergency bus feeder breaker spring tension.	Prior to Start-up
B2	Repair the Unit 1 UPS primary inverter.	Complete
B3	Complete the Unit 1 battery discharge tests.	Complete
B4	Complete the Unit 2 turbine exciter coupling changeout and alignment.	Complete
B5	Install modifications to enhance Unit 2 turbine partial arc operation.	Installation Complete
B6	Complete refurbishing the Unit 2 control valve power packs and changing out turbine electro-hydraulic control system accumulators.	Complete

ENCLOSURE 3

PERFORMANCE IMPROVEMENT PROGRAM
 SHORT TERM ACTIONS
 (REQUIRED PRE-STARTUP)

ITEM NO.	DESCRIPTION	COMPLETION SCHEDULE
B7	Complete inspection of cylinder 4L on emergency diesel generator 3.	Complete
B8	Replace the 2B reactor feed pump wear ring.	Complete
B9	Repair the 1B control rod drive pump.	Complete
B10	Replace current transformers in the emergency busses that would require a dual unit outage.	Complete
B11	Modify main stack radiation monitor isokinetic sampling probe.	Prior to Start-up
C - Potential Structural Deficiencies		
C1	Complete Unit 1 and Unit 2 Drywell Phase 2 miscellaneous steel walkdowns and Unit 1 and Unit 2 Reactor Building Phase 1 Miscellaneous steel walkdowns. Complete preliminary bounding load studies. Address repairs, as required in accordance with the methodology in Enclosure 2.	Prior to Start-up
C2	Repair of five reinforced concrete non-load bearing wall panels in the diesel generator building to restore them to their design configuration.	Prior to Start-up
C3	Complete repairs to structural angle restraints for diesel generator building block walls to restore the walls to their design configuration.	Prior to Start-up
C4	Perform a design review and a field inspection review, when necessary, of the non-safety masonry walls at the Brunswick Plant to verify the walls are appropriately classified. Address any identified deficiencies in accordance with the methodology in Enclosure 2.	Prior to Start-up

ENCLOSURE 3

PERFORMANCE IMPROVEMENT PROGRAM
 SHORT TERM ACTIONS
 (REQUIRED PRE-STARTUP)

ITEM NO.	DESCRIPTION	COMPLETION SCHEDULE
C5	Remove accessible non-functional through-bolts and install cover plates over the holes in the diesel generator building walls.	Complete
C6	Perform an integrity inspection (i.e., for cracks, general condition) of unreinforced masonry walls that are classified as safety-related. Address any identified deficiencies in accordance with the methodology in Enclosure 2.	Prior to Start-up
C7	Complete repairs of upgrading seismic classification walls in the control building (elevation 49 foot) that have been determined to be required post-earthquake for control room habitability requirements.	Prior to Start-up
C8	Perform a review of IE Bulletin 80-11 program for the Brunswick Plant. The review will address existing masonry wall functions including missile barrier, tornado barrier, ventilation barrier, or other functions for which it is not analyzed. Address any identified deficiencies in accordance with the methodology in Enclosure 2.	Prior to Start-up
C9	Complete long term qualification of the emergency diesel generator exhaust line supports to include tornado loading requirements.	Prior to Start-up
C10	Review the IE Bulletin 79-02 (Pipe Support Anchor) Program to ensure compliance and to ensure methods of inspection used would have detected deficient bolt installation.	Prior to Start-up
C11	Complete field inspections to assure that calculations supporting interim seismic operability of the service water system pumps are valid. Address any identified deficiencies in accordance with the methodology in Enclosure 2.	Prior to Start-up
C12	Perform a third-party review of the short term structural integrity program to address evaluation techniques, field validation of critical assumptions, and a review of communications from the Technical Support organization to the Engineering organization. Address any identified deficiencies in accordance with the methodology in Enclosure 2.	Prior to Start-up

ENCLOSURE 3

PERFORMANCE IMPROVEMENT PROGRAM
SHORT TERM ACTIONS
(REQUIRED PRE-STARTUP)

ITEM NO.	DESCRIPTION	COMPLETION SCHEDULE
C13	Complete repairs of recirculation system ring header hangers.	Prior to Start-up
C14	Complete design and installation of additional pipe supports for the service water lubrication water piping.	Prior to Start-up
C15	Address seismic repairs of electrical motor control centers in accordance with the methodology in Enclosure 2.	Prior to Start-up
D - Backlogs of Temporary Conditions and Operator Work-Arounds		
D1	Temporary conditions involving short term structural integrity items will be reduced in accordance with the methodology in Enclosure 2.	Prior to Start-up
D2	Temporary conditions other than short term structural integrity items will be reduced in accordance with the methodology in Enclosure 2.	Prior to Start-up
D3	Reduce the number of operator work-around items (disabled annunciators, RTGB indicator deficiencies, and caution tags) in accordance with the methodology in Enclosure 2.	Prior to Start-up
D4	Reduce the outage backlog of corrective maintenance in accordance with the methodology in Enclosure 2.	Prior to Start-up
D5	Reduce the outage backlog of preventative maintenance in accordance with the methodology in Enclosure 2.	Prior to Start-up

ENCLOSURE 3

PERFORMANCE IMPROVEMENT PROGRAM
 SHORT TERM ACTIONS
 (REQUIRED PRE-STARTUP)

ITEM NO.	DESCRIPTION	COMPLETION SCHEDULE
E - Equipment Deficiencies Discovered During Walkdowns		
E1	Perform hot side walkdown inspections. Address any identified deficiencies in accordance with the methodology in Enclosure 2.	Walkdown Complete
E2	Perform cold side walkdown inspections. Address any identified deficiencies in accordance with the methodology in Enclosure 2.	Walkdown Complete
F - Other		
F1	Correct leakage on a feedwater check valve hinge pin and a main steam isolation valve (MSIV) packing (total was less than 50 percent of Technical Specification allowed limit) and a nitrogen leak on a drywell cooler, which was identified during Unit 1 drywell inspections.	Complete
F2	Complete repairs to neutron monitoring detectors in accordance with the methodology in Enclosure 2.	Prior to Start-up
F3	Complete the Unit 1 secondary containment isolation test scheduled for the next refueling outage (Reload 8).	Complete
F4	Complete 4kV bus crosstie modification (part of 10 CFR 50.63 implementation).	Prior to Start-up

ENCLOSURE 4

EXECUTIVE SUMMARY OF THE
CORPORATE IMPROVEMENT PROGRAM

ENCLOSURE 4

EXECUTIVE SUMMARY OF THE
CORPORATE IMPROVEMENT PROGRAM

Following this page are the first three chapters of the document setting forth the Corporate Improvement Program. Chapter I provides an overview of the Program. Chapter II describes how the Program will be administered. Chapter III provides a summary level listing and description of the 22 improvement projects. Other chapters, including one with action plans for each project, are under development.

The Corporate Improvement Program document in its final form will be a stand-alone document. It will provide the basis for the administrative control for the overall improvement program.

I. IMPROVEMENT PROGRAM OVERVIEW

COMMITMENT TO LONG-TERM IMPROVEMENT

The management of CP&L is committed to the successful implementation of an improvement program for the Brunswick Plant. We expect this effort to address the higher standards for the maintenance and operation of the Brunswick Plant, facilitate improvements in CP&L's other nuclear plants, and establish the foundation for sustainable levels of good performance over the long term. Resources are being provided to achieve reductions in the backlog of work and to improve substantially the material condition of the plant and its equipment. Further, aggressive steps are being taken to establish the correct philosophy of operations and to strengthen work control processes.

The improvement program at Brunswick is both an aggressive short-term effort and a comprehensive long-term effort. Successful implementation will require management commitment and follow-through. We have demonstrated a corporate commitment by providing an additional \$200 million to \$225 million over the next five years for improvements, in addition to those included in our five-year business plans. We know changes in managerial effectiveness are required for a long-term solution to challenges at Brunswick. We believe the initiatives set forth in this Corporate Improvement Program demonstrate our total commitment to improve the material condition of the plant, our business processes and the effectiveness of our work force.

The schematic in Exhibit E4-1 shows the purpose, objectives, key initiatives, implementing projects and expected results of the Corporate Improvement Program. The remainder of this chapter describes the elements in the schematic.

PURPOSE AND OBJECTIVES

The primary purpose of the Corporate Improvement Program is to create the foundation for a sustained level of good performance. CP&L's corporate and site management recognize the degree of change that must occur to establish this foundation for substantial improvement. The specific objectives of this Improvement Program represent the results this Program must achieve. These objectives are:

- Reduce the backlog of work at Brunswick and maintain equipment in accordance with design and operating standards so that the permanent plant staff has the opportunity to focus on managing the safe and reliable operation of the plant.
- Establish and instill a new philosophy of operations in which all employees perform to the highest standards necessary to achieve an attitude of continuous improvement in performance.
- Redesign work management processes in order to remove impediments to working efficiently and effectively.

FOUR PRIMARY INITIATIVES

There are four primary initiatives which will guide and shape the overall Corporate Improvement Program. These four key initiatives are described below.

I - DEVELOP HIGHER AND MORE SPECIFIC STANDARDS

Corporate and site standards for the Brunswick Plant, and our other nuclear units, which are much higher and more specific than current standards will be developed. These standards will be effectively communicated throughout the Nuclear Generation Group organization, integrated into the work practices of our employees, and monitored with respect to performance against them.

II - DEVELOP PLANS TO MEET THE STANDARDS AND MONITOR IMPLEMENTATION

Improved and strengthened planning and action monitoring processes will be developed. This will provide heightened visibility as to the accomplishment of planned work and as to the level of effort and priority needed to perform in accordance with standards. The processes for identifying, planning, and monitoring improvement projects is being modified to support the Integrated Schedule Program (ISP). The initial Brunswick ISP will be submitted in October 1992.

III - PROVIDE ADDITIONAL RESOURCES

The linkage between the planning and budgeting processes will be strengthened to ensure that resources necessary to carry out our plans, and thereby achieve our standards, are clearly identified and provided over the long term. For 1992, funds have been authorized, in addition to the approved budget, for improvements which can proceed immediately. For 1993, performance improvement projects are being budgeted separately from routine operations. This will enable the evaluation and funding, as appropriate, of an improvement project on its own merits.

IV - ESTABLISH AN ATTITUDE OF CONTINUOUS IMPROVEMENT IN PERFORMANCE

Actions will be undertaken to ensure a work climate which consistently encourages effective, critical self-assessment, the identification and resolution of problems by all employees, and secures the commitment of all employees to the achievement and maintenance of the established quality standards. CP&L has made a commitment to more aggressively identify and correct problems as illustrated by the extensive inspections, repairs, and modifications currently underway. The actions during the outage of the summer and fall of 1992 are reinforcing our message to employees that CP&L management intends to set and achieve high standards, identify deviations therefrom, and provide resources to implement prompt corrective actions. In addition, senior

management at the site and at corporate will communicate the importance of the timely resolution of problems, hold the responsible line and support organizations accountable for meeting commitments to resolve problems, and demand increased monitoring of plant performance and ownership of identified problems by support groups.

TWENTY-TWO IMPLEMENTING PROJECTS

To implement these four key initiatives, the Corporate Performance Improvement Program consists of 22 specific improvement projects. Each of these projects will be the responsibility of a CP&L department manager or higher level executive. To the extent required, they will be separately funded and provided with the staff necessary to execute the project plan. In addition, effectiveness audits will be conducted to ensure that the intended results of the project have been achieved.

Chapter III contains a brief description of each project as well as duties and responsibilities. The twenty-two projects are listed below.

PROJECTS:

- 1 Root Cause Verification
- 2 Work Management Policies and Standards
- 3 Communication of Work Management Policies and Standards
- 4 Improvement Plans for Standards
- 5 First-year Review of Standards
- 6 Reporting of Standards Compliance
- 7 NGG Policy and Procedures Manual Restructure
- 8 Role Change for Nuclear Services Department
- 9 Corrective Action Assessment
- 10 Integrated Schedule Program
- 11 Business Planning Process Review
- 12 Supervisory Assessment Center
- 13 Supervisory Development Program
- 14 Technical Training Program
- 15 Staff Assistance Team Recommendations Resolution
- 16 Modification Process Redesign
- 17 Maintenance Process Redesign
- 18 Work Control Methodology
- 19 Monthly Plant Material Condition and Housekeeping Policy Report
- 20 Long-Term Backlog Reduction at Brunswick
- 21 Organization Effectiveness Improvements
- 22 Nuclear Assessment Department Review and Evaluation

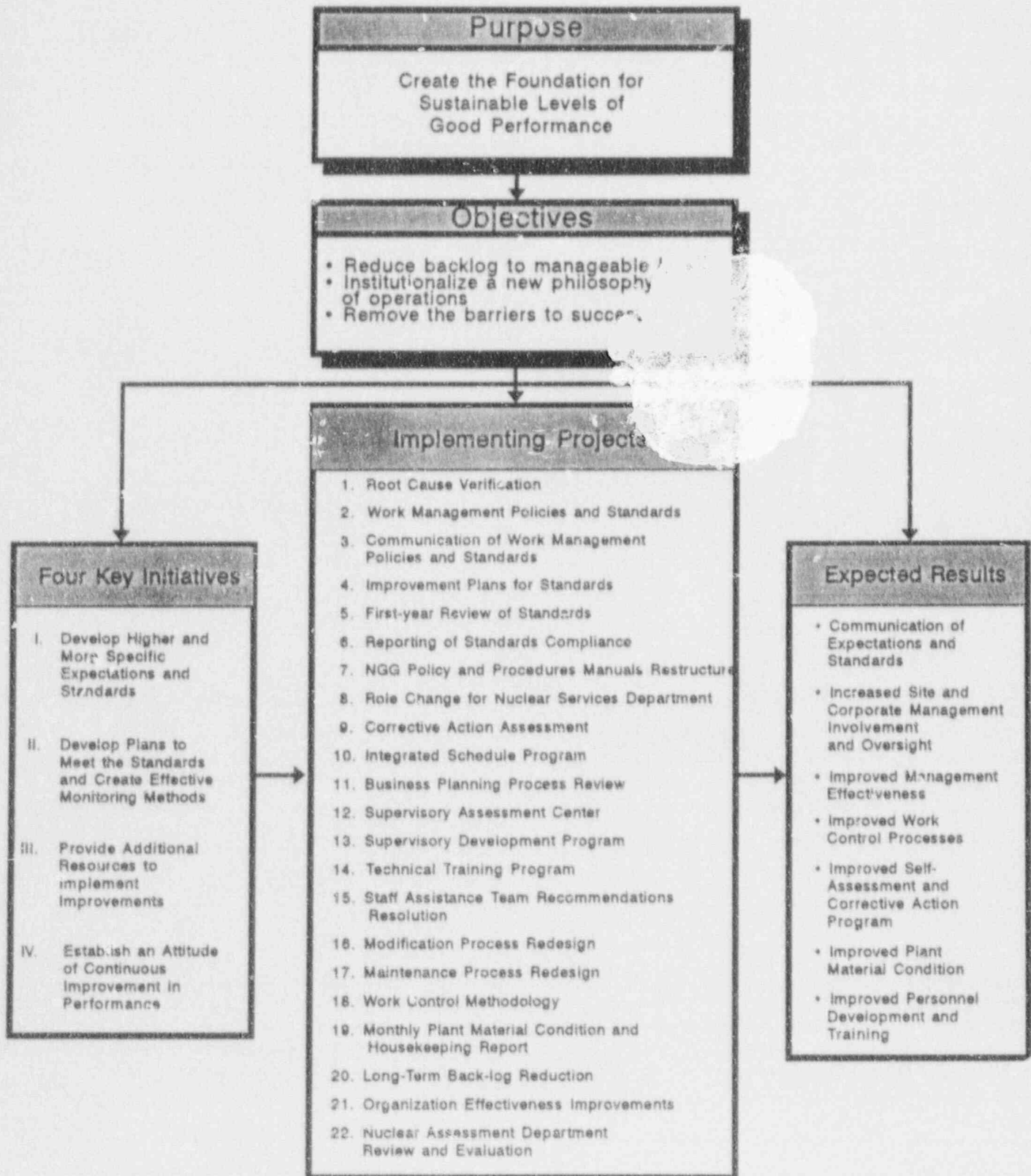
RESULTING CHANGES

This program, when fully implemented, will be successful in producing the results which will be needed to achieve and sustain a high level of performance. The expected results are:

1. Communication of management expectations and standards through specific work management policies and standards and development of a disciplined oversight program to ensure that corporate management closely monitors efforts to implement and sustain these standards.
2. Increased Corporate and Site management involvement and oversight with particular emphasis on past chronic performance concerns and on improved communication between plant management and corporate management.
3. Improved management effectiveness at the Group and Department level, especially with respect to communications, positive leadership, and the establishment of a clear hierarchy of administrative policies and procedures.
4. Improved work control processes resulting from the near-term implementation of recommendations of the Staff Assistance Team and the longer term reexamination of the maintenance management process and the engineering analysis and modification process.
5. An improved self-assessment and corrective action program. The improvements will be built upon a root cause analysis to determine why the existing procedures have not been effective and the implementation of appropriate changes based upon that assessment.
6. Improved plant material condition through the significant reduction of existing backlogs, the establishment of an organization for further reductions of the current backlog, and the establishment of appropriate standards to facilitate the future management and control of backlogs.
7. Improved personnel development and training which will increase the effectiveness and capability of management and non-management personnel. This result will flow from the implementation of an Supervisory Assessment Center to identify candidates for supervisory positions, the continued implementation of a Supervisory Development Program to provide supervisory candidates training in the skills needed to be effective, and the restructuring of the technical training program to increase the effectiveness of the skills and hands-on training activities.

Corporate Improvement Program Brunswick Nuclear Plant Program Overview

Exhibit E4-1



II. IMPROVEMENT PROGRAM ADMINISTRATION

The Corporate Improvement Program is a long-term effort. Performance improvements have already begun, but the full implementation and change effort will require a number of years to complete.

All levels of CP&L management are committed to overseeing this Program to its successful completion. The definition of improvement initiatives and the establishment of action plans have involved the top managers in the NCG and line management up to the CEO. In addition, there has been active collaboration with other members of CP&L's top management that have roles to play in supporting these improvement initiatives. In recognition that other improvement programs have not been fully effective, there will be a new approach for implementation and effectiveness monitoring for Corporate Improvement Program, the specific features of which are outlined below.

Overall Improvement Program Responsibility

The Senior Vice President of the Nuclear Generation Group has overall responsibility and accountability for the Corporate Improvement Program. This responsibility extends to the implementation of changes at the other nuclear plants in order to achieve the appropriate degree of consistency and comparability of processes and organization structure. The Senior Vice President will have a special Executive Assistant who will have the responsibility to orchestrate and coordinate the various projects that make up the Corporate Improvement Program. CP&L Management will ensure that this program is fully funded. The Senior Vice President will administer the allocation of funds. The Executive Assistant will monitor implementation progress and perform basic reporting and accounting responsibilities. A monthly status report will be prepared and submitted to the department heads in the Nuclear Generation Group and the members of the Senior Nuclear Advisory Committee.

Senior Management Oversight and Control

All levels of management from the site vice presidents up to the CEO will receive a monthly report on implementation and status from the Executive Assistant to the NCG. The distribution of these reports will be the responsibility of the Senior Vice President. In addition, two new initiatives will provide for a more extensive degree of senior management oversight and control.

The Nuclear Assessment Department will conduct independent audits of the implementation results. These audits will be conducted at a maximum interval of every six months, and they will be structured to reflect the performance-based auditing philosophy of the Nuclear Assessment Department. Results of these audits will be communicated to senior nuclear line management, the Executive Vice President - Power Supply, and the Senior Nuclear Advisory Committee (SNAC).

The Senior Nuclear Advisory Committee (SNAC) will review: 1) the progress of implementation and 2) the degree to which desired results are

being achieved. The SNAC will receive formal monthly reports from the Senior Vice President of the Nuclear Generation Group. Further, the SNAC will receive formal reports from the organizations that conduct the follow-up/effectiveness audits. The membership of SNAC includes the Executive Vice President of Finance and Corporate Services, the Executive Vice President of Power Supply, and the Senior Vice President, and Regulatory Services.

Project Closeout

An independent effectiveness follow-up audit will be conducted for applicable projects. This audit will be focused upon the results achieved to ensure that the intended purpose of the project has been satisfied. The Senior Vice President - Nuclear Generation will make the final decision on project closeout.

III. IMPROVEMENT PROJECT SUMMARY

The following schedule provides a summary description of each of the twenty-two improvement projects. Also included is the title of the department or group head responsible for the project and the date by which the project will be completed.

NUMBER	PROJECT DESCRIPTION	COMPLETION SCHEDULE	RESPONSIBILITY
1	Undertake at the corporate and site management level a rigorous effort to identify the root cause of the problem identified by the NRC, NAD and others and then build the commitment to resolve these problems permanently and to reflect lessons learned in the Corporate Improvement Program.	December 31, 1992	Senior Vice President, Nuclear Generation Group
2	Develop Work Management Policies and Standards for application at all three of CP&L's nuclear plants.	September 30, 1992	Vice President, Nuclear Services
3	Integrate Work Management Policies and Standards into the Conduct of Nuclear Operations Manual (CONOM) and provide briefing reviews of the CONOM to all NGG employees.	December 31, 1992	Vice President, Nuclear Services
4	Define the status relative to the Work Management Policies and Standards at each of the three nuclear plants and develop improvement action plans, and establish a line management tracking method.	Complete status determination at BNP by December 31, 1992 Complete status determination at other departments by February 28, 1993	Each NGG Department Manager (Development) Sr. VP of NGG (Approval)

NUMBER	PROJECT DESCRIPTION	COMPLETION SCHEDULE	RESPONSIBILITY
5	Perform a review one-year after deployment of Work Management Policies and Standards to incorporate lessons learned and to revalidate the standards and the ways they are used.	Initiated in fourth quarter 1993	Vice President, Nuclear Services
6	Provide a method for the independent monitoring, auditing and reporting of plant status relative to Work Management Policies and Standards	Begin monitoring in January 1993	Manager, Nuclear Assessment
7	Upgrade the hierarchy of management and administrative policies, procedures and guidelines to provide for an administrative governance structural consistent among each of the nuclear plants and NCG departments in the corporate office.	Complete by October 31, 1992 the initial assessment and preparation of improvement plan	Vice President, Nuclear Services
8	Revise mission, role and responsibilities of the Nuclear Services Department to reflect greater responsibility for assuring beneficial consistency among the plants and conformance to the expectations of the Senior Vice President.	End of second quarter 1993	Vice President, Nuclear Services
9	Perform a detailed review to determine why corrective action and self-assessment have not been effectively applied.	Complete study, prepare implementation plan, and begin implementation during second quarter 1993	Vice President, Nuclear Services
10	Develop and implement the Integrated Schedule Program.	Submit initial Brunswick Plant ISP in October 1992	Manager, Nuclear Business Operation

NUMBER	PROJECT DESCRIPTION	COMPLETION SCHEDULE	RESPONSIBILITY
11	Revise the Business Planning process and format to ensure that the resources necessary to achieve and maintain standards are reflected in the Business Plan.	Implement for 1993 Business Planning Process	Manager, Nuclear Business Operations (with support from the Corporate Management Services Department)
12	Establish a long-term plan for the on-going effective utilization of the Supervisory Assessment Center approach for identifying candidates for supervisory positions.	Complete during second quarter 1993	Vice President, Employee Relations
13	Complete the implementation of the Supervisory Development Program and establish it as an on-going training program that is to be attended by all first and second-level supervisors in the Nuclear Generation Group.	All eligible supervisors through academy by end of 1995	Vice President, Employee Relations
14	Establish an implementation plan to address the improvement initiatives identified in the recently-completed assessment of the technical training program.	Complete by end of 1992	Vice President, Nuclear Services
15	Complete the implementation of actions necessary to address and resolve each of the 71 recommendations developed by the Staff Assistance Team (SAT) and agreed to by the Brunswick Nuclear Power Plant management.	Prepare final implementation plan by November 30, 1992	Vice President, Brunswick Nuclear Plant and Vice President, Nuclear Services

NUMBER	PROJECT DESCRIPTION	COMPLETION SCHEDULE	RESPONSIBILITY
16	Undertake a long-term initiative to process redesign the engineering analysis/modification process.	Schedule under development	Manager, Nuclear Business Operations
17	Undertake a long-term initiative to process redesign maintenance management.	Schedule under development	Manager, Nuclear Business Operations
18	Define a common approach for managing work (planning and scheduling of modifications, maintenance and others) and for work control at each of the three nuclear plants.	Schedule under development	Vice President, Nuclear Services
19	Develop a methodology that will provide for the monthly inspection and reporting to the Senior Vice President of NGG as to visible plant material condition and housekeeping.	Begin inspections in December 1992	Vice President, Nuclear Services
20	Establish a separate project group that will be responsible for addressing that portion of the backlog that should not be the responsibility of the permanent plant staff in the areas of corrective maintenance, procedure rewrites and modifications.	Establish special project prior to startup.	Vice President, Brunswick Nuclear Project
21	Undertake a broad, comprehensive management effectiveness improvement program aimed at establishing an attitude of continuous improvement in performance.	Schedule under development	Senior Vice President, Nuclear Generation Group and Vice President, Employee Relations

NUMBER	PROJECT DESCRIPTION	COMPLETION SCHEDULE	RESPONSIBILITY
22	Evaluate and strengthen the effectiveness of the Nuclear Assessment Department to ensure that it effectively carries out its oversight responsibilities.	Complete by end of second quarter, 1993	Executive Vice President, Power Supply