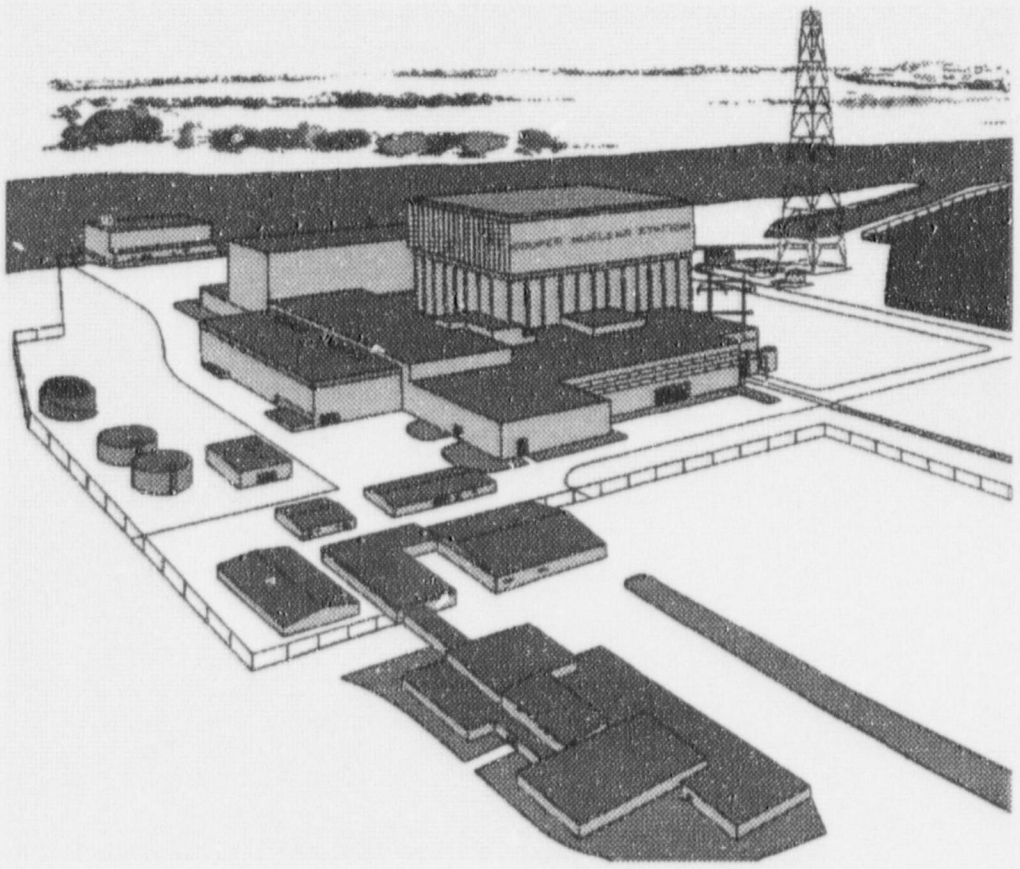
Nebraska Public Power District

Nuclear Power Group

Phase 3 Performance Improvement Plan

Closure Report



May 9, 1997

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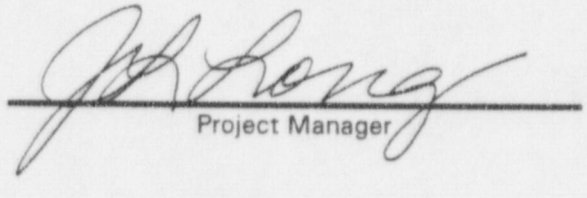
SUBMITTED BY:



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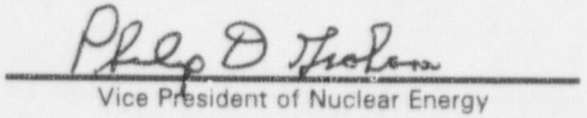

Vice President of Nuclear Energy

May 9, 1997

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1 Executive Summary

This document is the Nuclear Power Group Phase 3 Performance Improvement Plan (Phase 3 Plan) closure report. It documents the achievements of the third stage in the performance improvement planning process initiated in the fall of 1994. The Phase 3 Plan established an overall framework for improving NPG performance, starting with the top level goals, vision and challenges, then translating them to strategies with associated implementing programs.

CNS must support NPPD goals and must achieve a competitive, economically viable position as part of NPPD's generation mix. Achieving and maintaining nuclear industry upper-quartile performance in the areas of safety, generation, and cost is the measure of our competitiveness. The top level quantifiable indicators in these areas are NRC SALP rating, capacity factor, and plant production cost. These parameters provide consistent, industry-wide indicators of performance. The following table provides the results of our efforts to meet top level goals during Phase 3 Plan implementation.

Performance Category		1995	Cycle 17	Cycle 18
Safety/Regulatory (average SALP rating)	Target	≤ 2.5	≤ 2.0	≤ 1.25
	Actual	2.5 ✔	2.25 ✖	
Generation (% Capacity Factor)	Target	> 66%	≥ 80%	≥ 85%
	Actual	61.7% ✖	85.5% (est) ✔	
Production Cost ($/MWh)	Target	≤ $28	≤ $21	≤ $18
	Actual	$28.00 ✔	$19.95 (est) ✔	

The original Phase 3 Plan spanned a period from June 1995 to December 1997. It included 8 strategies, 30 programs, and 454 individual activities. As experience was gained during implementation, four revisions were made to the plan. These revisions added 3 programs, deleted 1 program, and increased the scope of activities to 807. Concurrent with business planning conducted by the District and Energy Supply, a decision was made to advance the plan closure date to May 1997, to coincide with the commencement of operating Cycle 18 (following Refueling Outage 17). In its original version, 96% of all activities were scheduled to be completed by May 1, 1997. In its final version, Revision 4, 93% of all activities were scheduled to be completed by this date. Upon closure of the Plan, 92% of all activities were completed, incorporated into baseload work activities, or evaluated as no longer necessary.

Upon closure of the Phase 3 Plan, a total of 85 activities remained to be performed, 24 of which had been incorporated into baseload work activities or were evaluated as no longer necessary. The resulting 61 activities were consolidated into 21 follow-up actions that are being carried into the NPG Business Plan. Additionally, the closure review process identified 16 follow-up actions that were not part of the Phase 3 Plan, but were appropriate to add to the NPG Business Plan. Eight of the 37 follow-up actions are considered to be essential to meeting Phase 3 Plan Strategy or Program objectives (see Appendix A).

NPG Senior Management concludes that the implementation and completion of the Phase 3 Plan strategies and programs have significantly improved CNS performance and established the necessary infrastructure for sustained, continuous improvement. Significant progress was made on focusing the organization on safe operations. This focus included setting higher standards of organizational performance, conservative, safety focused decision making, and improving the organization's questioning attitude. Critical processes were assessed and revised to improve quality and efficiency.

In the area of engineering, significant improvements were made. These included the reconstitution of various parts of our design basis (e.g., Technical Specification bases, safety accident analysis), process improvements to control configuration, qualification and training of engineers, and effectiveness of the system engineering program. The Engineering Division conducted a detailed and broad self assessment during Phase 3 that provided focus for engineering action plans that have been implemented to improve performance. Additional improvements and enhancements are identified and progressing for continuous improvement in this area.

In the area of continuous improvement, a healthy culture was established and nurtured. Today, this culture permeates the organization. Key elements that are in place include an improved corrective action program, improved operating experience review program, a significantly improved self assessment program and process, and the increased use of indicators as tool to monitor performance.

Not all targets were reached as effectively as anticipated. For example, although significant improvement was made in identifying problems, effective follow through was not consistently attained. Effective communications with the NRC did not occur until late in the plan period, which undoubtedly impacted our SALP results. Finally, although significant improvements were made in the use and adherence of procedures, anticipated results were not totally achieved, necessitating continued management emphasis. These areas, as well as other appropriate actions not completed, are being included in the NPG Business Plan.

The completion of the Performance Improvement Plan marks a milestone in Cooper Nuclear Station's history. While many challenges remain in raising overall performance to reach the upper quartile in each of the top level goal areas, the foundation necessary to meet these challenges is firmly established. The skill and determination of the CNS work force, which has always been the strength of the NPG organization, has now been provided an additional complement of tools that will ensure future success.

2 Introduction and Overview

This document is the Nuclear Power Group Phase 3 Performance Improvement Plan (Phase 3 Plan) closure report. It documents the achievements of the third stage in the performance improvement planning process initiated in the fall of 1994. The Phase 1 Performance Improvement Plan was directed at the initial actions required to address significant performance issues prior to the startup of the station from the 1994 shutdown. The Phase 2 Plan then followed with a set of short duration, high priority program plans implemented during the first three months following plant startup in early 1995. The Phase 3 Plan refocused improvement efforts from shorter-term issues to address long-term, strategic direction.

The Phase 3 Plan was a strategy-based plan for achieving significant improvements in the NPG's plant and organizational performance. The plan provided clear linkages from NPG challenges and vision to resultant strategies and implementing programs The plan served the following purposes:

- To establish the strategic direction for the NPG by focusing activities on supporting plant operations and the competitiveness of the business.
- To serve as a primary source of management direction and focus.
- To fully resolve the causes of performance problems.

The Phase 3 Plan established an overall framework for improving NPG performance, starting with the top level goals, vision, and challenges, then translating them to strategies with associated implementing programs. Each program was defined in a comprehensive action plan, including objectives, activities, and schedules. Each strategy had an assigned management sponsor responsible for assuring that the strategy was effectively implemented through the program plans. Each program had an assigned program manager responsible for achieving the results specified in the program plan. Resources were linked to each program and were tied to baseline budgets through redirecting existing resources or requests for incremental funding.

The Phase 3 Plan was originally issued with 8 strategies, containing 30 programs, with a total of 454 activities. The scheduled completion date was December 1997. As experience in implementing the Plan increased, four revisions were processed. These revisions added 3 new programs, deleted 1 program, and increased the scope of activities to a total of 807.

Plan completion, originally scheduled for December 1997, was brought forward to May 1997. This change in scheduled completion was driven by a decision by the Vice President of Nuclear Energy to transition into the NPG Business Planning process at the beginning of Cycle 18 (following Refueling Outage 17). This date was selected to expedite the NPG Business Plan development to coincide with the Energy Supply and NPPD Business Planning process that began in early 1997. To ensure appropriate focus, it was decided that the Phase 3 Plan needed to come to closure concurrent with implementation of the NPG Business Plan.

3 Goals and Objectives

3.1 Top level Goals

CNS must support NPPD goals and must achieve a competitive, economically viable position as a valued part of the NPPD generation mix. Achieving and maintaining nuclear industry upper-quartile performance in the areas of safety, generation, and cost is the measure of our competitiveness. The top level quantifiable indicators in these areas are NRC SALP rating, capacity factor, and plant production cost. These parameters provide consistent, industry-wide indicators of performance.

Achieving these goals will put the NPG into its desired relative competitive position. Cost and operations goals are directly linked to the NPG's business purpose to produce power at a competitive cost so that NPPD can attract and retain customers. Safety and regulatory performance satisfy a mandatory requirement for our business. Achieving this goal is an essential element that allows the pursuit of other business goals.

Obvious tension exists among the performance factors - the challenge is that they must be achieved concurrently. However, a number of U.S. nuclear plants have achieved top-quartile performance in all three performance areas. Their experience shows that it is possible to achieve a successful balance among the many interrelated factors that affect performance. At these plants, the various performance factors reinforce each other. A safe plant runs efficiently and reliably, high output and reliability improve production-cost performance on a $/MWh basis, and improved regulatory performance means fewer resources are spent reacting to regulatory issues.

Accepting less than top-quartile performance is not an option; only solidly performing nuclear plants will be economically competitive in the future. It is also apparent that performance standards and expectations will continue to rise in each area. The NPG goals established in conjunction with the Phase 3 Plan were challenging and realistic.

Performance Category	1995	Cycle 17	Cycle 18
Safety/Regulatory (average SALP rating)	≤ 2.5	≤ 2.0	≤ 1.25
Generation (% Capacity Factor)	≥ 66%	≥ 80%	≥ 85%
O&M plus Fuel Cost ($/MWh)	≤ $28	≤ $21	≤ $18

3.2 Vision

The NPG's vision describes what the organization is striving to be and how it communicates those qualities to others. The vision implies change, containing both the direction and objectives for that change. The NPG management team developed the NPG vision statement and is committed to acting in accordance with its principles. The vision incorporates attributes that are characteristic of the best performing nuclear plants and the NPG top level goals. As a consequence, NPG's vision and top level goals are linked and consistent.

The NPG vision statement presented in Figure 3-1 describes the key attributes of the NPG organization that were anticipated to be apparent by the end of 1997 (closure of Phase 3 Plan). This vision, by highlighting areas where new or significantly enhanced capabilities or behaviors were required, provided the focus for implementing the strategies contained in the Phase 3 Plan. The NPG organization now reflects these attributes.

3.3 Performance Issues

Performance issues were derived from evaluations and assessments performed by the NPG and external parties. These evaluations included the NRC Special Evaluation Team findings and the May 27, July 1, and August 2, 1994 Confirmatory Action Letters, the Diagnostic Self Assessment Team report, the NPG 1994-1997 Business Plan, Phase 1 and Phase 2 Performance Improvement Plans, Integrated Enhancement Program plan, and other self assessments and management initiatives.

The issues raised in these various documents had been previously examined and screened for restart issues for inclusion in the Phase 1 Plan. For purposes of the Phase 2 and Phase 3 Plans, these issues were further evaluated to determine their significance to achievement of the NPG's vision and top level goals. The data provided consistent indications of the areas where performance problems were occurring.

These different views of the performance issue data were considered by the management team to identify and describe the most significant problems and to characterize performance gaps. The term performance gap is used to denote a difference between the desired level of performance in the long term and the current actual performance. Identified in this manner, performance gaps were the basis for developing strategies and assuring a competent linkage to improvement activities.

NPG Vision

Focus on Safe Operations

- Safe operations is the central focus of the Nuclear Power Group.
- Operations sets the agenda for all other organizations.
- NPG finds its own problems. Self assessment and a questioning attitude are used to recognize improvement opportunities as well as problems. Significant problems are addressed promptly.
- Recurring deficiencies or equipment failures are not accepted.
- Personnel errors are avoided by effective administrative barriers, clear expectations, and individual self-discipline in implementation of these barriers and expectations.
- Conservative decision-making is practiced at all times.

Management Practices

- Performance standards are established and communicated to employees.
- Rewards are aligned with and based on results.
- Accountability is used to focus efforts on results.
- All employees accept ownership and personal responsibility for work safety, quality, and efficiency.
- Decisions have a rational basis and are consistent with goals.

Responsive to External Environment

- NPG's operation of CNS delivers a competitive product to its customers.
- Customers know their input is valued and they are viewed as partners.
- Regulators, the public, and our partners have confidence in our ability to operate safely. There are no surprises. NPG integrates industry experience in continuing assessments of its performance.
- Vigilance toward emerging industry issues will be maintained.

Resource Management

- A consistent priority system is used to allocate financial and human resources to high value activities that support top level goals.
- Work activities are planned and completed within budget and on schedule.
- Long term asset value is realized by balancing expenditures, operating reliability, and risk.
- Outage duration is consistently less than 50 days.

Organizational Effectiveness

- Communications up, down, and across the organization are timely, clear, and complete. Each member of the NPG has a consistent understanding of expectations and the current situation.
- Fully developed management development programs preserve "bench strength" and allow NPG to manage both routine and emergent issues without shortchanging either.
- Roles and responsibilities are clearly defined and designed to facilitate teamwork. Behavior consistent with teamwork is routine and a constant expectation.

Figure 3-1: NPG Vision

4 NPG Strategies and Programs

4.1 Strategy Overview

The Phase 3 Plan was a strategy-driven plan for realizing the vision and achieving top level goals, as well as closing the performance gaps resulting from performance issues. The strategies provided the overall direction and unifying themes for the programs and specific activities. Strategies also provided the framework to guide management actions as emerging issues developed over the course of plan implementation.

The multiple objectives of the Phase 3 Plan resulted in two different paths that led to strategy development. This process (illustrated in Figure 4-1) provided a convergence that ensured that the strategic significance of a wide variety of problems, issues, and vision attributes were integrated into the performance improvement process.

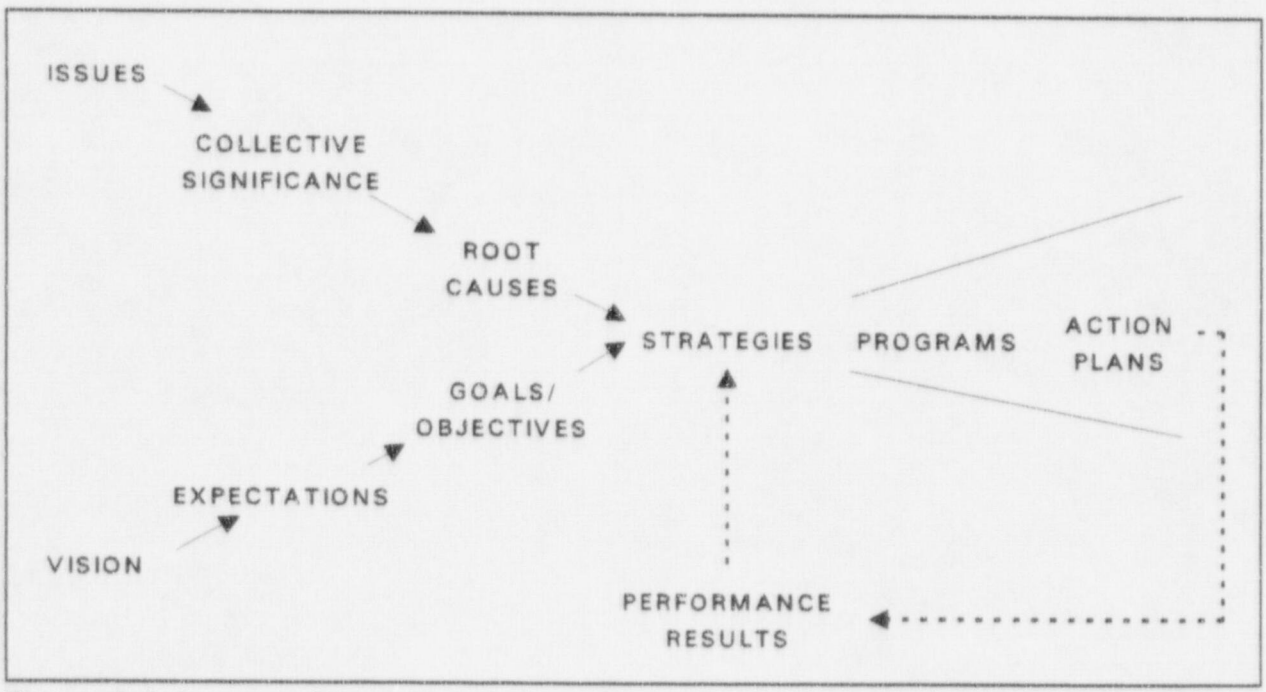


Figure 4-1 Strategy Development Process

Eight strategies for improving performance were identified to address key performance gaps and realize the vision. The areas addressed by these strategies, identified in Figure 4-2, were comprehensive in terms of improvement focus that was determined appropriate to the continuous improvement efforts.

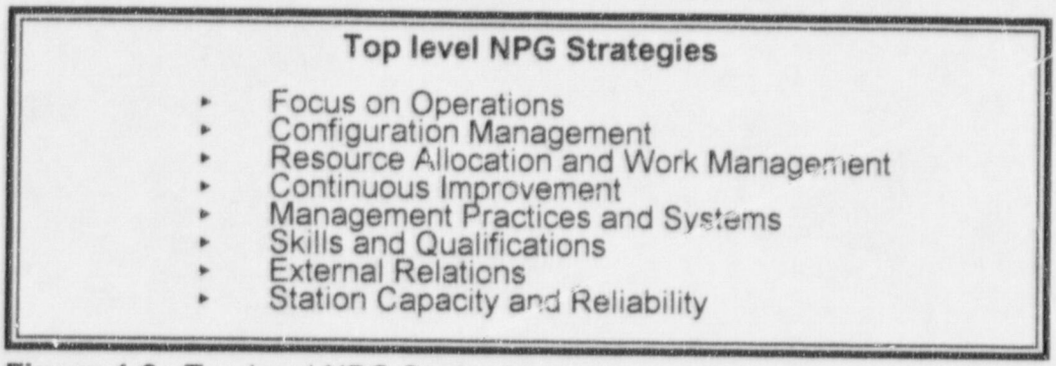


Figure 4-2: Top level NPG Strategies

The cohesiveness of the strategies developed from this process lies in their relation to the top level NPG goals in terms of safety, production, and economics and the implementation of the elements contained within the NPG Vision Statement and the identified performance gaps.

4.2 Supporting Strategic Programs

Within the eight strategies, specific activities required for performance improvement were delineated as strategic programs. Each strategy had several associated programs. Each program had its own objectives and action plan, including a detailed schedule, activities, and milestones. Activities were resource loaded and funded by redirecting existing resources or requesting incremental funding. The programs resulted in pervasive, systematic changes in NPG's business approach and processes; the programs were not punch lists of action items or one-shot problem fixes.

Program trees are used to illustrate the development of strategic programs for each strategy area. These trees provide a convenient map to the overall Phase 3 Plan structure provided in Section 5. Figure 4-3 presents the eight top level strategies and their associated programs. Figures 5-1 through 5-8 provide expanded trees for each strategy; each tree shows the Phase 3 Plan strategy sponsor, programs, program manager, and program objectives.

FOCUS ON OPERATIONS - R. Gardner (Figure 5.1) STRATEGY: Focus efforts on safe operation by redefining the roles and responsibilities of functions and individuals. Establish uniform work priorities, set standards for performance (quality, timeliness, and cost), and restructure programs and processes to facilitate completion of work and focus on operational needs. Apply safe operating principles in establishing work priorities and in the conduct of operation and a disciplined approach to execution and accountability for operational performance results.	Management Expectations for Operations - D. VanDerKamp Prioritization of NPG Workload - R. Wenzl Operations Critical Work Processes - J. Brown Organizational Focus - K. Pounders
CONFIGURATION MANAGEMENT - J. Pelletier (Figure 5.2) STRATEGY: Establish a clear understanding of the rules for managing the configuration of the plant for all operations, maintenance, and change activities. Assign responsibility for ownership of configuration programs, define the interface responsibilities, and clarify responsibility for decision making.	Technical Specifications Improvement - G. Sen Plant Configuration Control and Design Basis - Z. Wahab Records Management - S. Stiers
RESOURCE ALLOCATION AND WORK MANAGEMENT - J. Dillich (Figure 5.3) STRATEGY: Establish resource allocation and work management systems that ensure achievement of NPG top level goals.	Integrated Planning, Scheduling and Work Control - D. Billesbach Budgeting and Resource Allocation - M. Dixon Elimination of Low Value Activities and Processes - A. Sessoms Partnering - J. Long
CONTINUOUS IMPROVEMENT - M. Gillan (Figure 5.4) STRATEGY: Continuously improve NPG's performance by routinely assessing performance, including review of operating experience and identifying both improvements and problems. Reduce the impact and recurrence of problems, ensuring they are closed out effectively by follow-up and.	Corrective Action - M. Gillan Operating Experience Review - D. Reeves Assessment - T. Hough Procedure Use and Adherence - J. Scheuerman
MANAGEMENT PRACTICES AND SYSTEMS - M. Peckham (Figure 5.5) STRATEGY: Implement systems and practices that communicate and link the NPG vision and business objectives to individual performance expectations and accountability.	Business and Strategic Planning - J. Long Setting Management Expectations - E. Mace Performance Management - J. Long Performance Appraisal - M. White Information Systems for Management - P. Hyzer
SKILLS AND QUALIFICATIONS - A. Shiever (Figure 5.6) STRATEGY: Develop the capabilities and depth of the organization by defining required organizational development attributes, evaluating personnel against these attributes, and developing or recruiting individuals accordingly.	Assessment of Managers, Supervisors, and Key Staff - M. White Organizational Development/Required Skills - J. Dutton Succession Planning - J. Long Training Program Improvement - A. Shiever
EXTERNAL RELATIONS - B. Houston (Figure 5.7) STRATEGY: Establish mechanisms to communicate operational and regulatory status and issues to participants and regulators. Hold periodic meetings with participants to ensure coordination of longer-term business plans.	NRC Communications - M. Bennett Operations-Related Communications With External Parties - M. Krumland On-site Public Relations - J. Sayer
STATION CAPACITY AND RELIABILITY - J. Gausman (Figure 5.8) STRATEGY: Establish the management systems and processes that will focus on systematic improvements in plant reliability and promote consistently high levels of plant production capacity. Instill efficiency improvements in operating practices as a standard business method.	Fuel Cycle Optimization - E. Lanning Capacity Increases - J. Salisbury Plant Reliability - S. Freborg Maintenance - J. Dillich Power Up-rate - J. Gausman

Figure 4-3: Strategies and Programs

5 Results Achieved

5.1 Overall Results Achieved

5.1.1 Top level Goal Achievement

Safety Achievement

The goal of achieving a SALP rating of ≤2.5 for the period ending in July 1995 was realized. Operations and Plant Support were rated as good (Category 2), while Engineering and Maintenance were rated as acceptable (Category 3). Major areas for improvement included leadership in the operations department, implementation of a comprehensive, integrated as-low-as-reasonably-achievable radiological controls program, quality of operations support for performance of surveillance and testing activities, verification of operability of safety-related equipment affected by inadequate testing procedures and performance of testing personnel, involvement by system engineering in the resolution of plant problems, and support for technical review of plant documentation and procedures.

The goal of reaching a SALP rating of ≤2.0 for the cycle 16 period was not achieved. The Maintenance area improved to Category 2, but the other areas were unchanged, resulting in an average of 2.25. Areas for continued improvement were identified as unnecessary challenges to operations resulting from work packages that were not compatible with plant conditions, deficiencies identified in implementation of the maintenance rule, and continued weaknesses in the engineering area, particularly with system engineering activities. Procedure adherence problems were identified in most functional areas and performance standards were not effectively communicated to the staff. The inability to consistently develop and implement lasting corrective actions for identified deficiencies in some areas was also noted.

Production Achievement

Upon completion of the Phase 2 Plan, a Capacity Factor goal of ≥66%, based on net maximum dependable capacity, was established for 1995. While the plant operated very well following startup from the 1994 regulatory shutdown, the Capacity Factor achieved for the year was 61.7%. The shortfall resulted when Refueling Outage 16, which was scheduled for 55 days, was actually completed in 77 days. While the outage schedule performance was not as desired, the outage goals for safety and quality were met, setting the stage for a high level of production in Cycle 17.

Significant improvement in production did occur, with net electric generation in 1996 establishing an all-time CNS high. Except for a 10 day forced outage to repair a

defective fuel bundle, the plant operated continuously from the end of Refueling Outage 16 to the beginning of Refueling Outage 17. At the time of issue of this report, the projected Capacity Factor for Cycle 17 was 85.5%, compared to a goal of 80%.

Cost Achievement

A production cost target for 1995 was established at $28 per MWh. This target was achieved, with actual costs of $28.00 realized, despite the lower than expected net electric generation for the year.

For Cycle 17, a production cost target of $21 per MWh was established. At the time this report was issued, the estimated costs were projected to be $19.95/per MWh.

5.1.2 Program Execution and Implementation

When originally issued in June 1995, the Phase 3 Plan consisted of 8 strategies, containing 30 programs, with a total of 454 individual activities. As experience in implementing the plan increased, most program managers realized the need to expand the program plan to provide more detail and incorporate additional scope resulting from initial actions completed, such as self assessment results, or as new plant issues developed.

The Phase 3 Plan was maintained as a living document, with interim changes approved by the Vice President of Nuclear Energy as the need arose, and through periodic plan revisions. A total of four major revisions were issued, resulting in the addition of three new programs and the removal of one program that was superseded by a corporate initiative. The net result of these revisions was to increase the scope of work to a total of 807 activities.

In its original version, 96% of all activities were scheduled to be complete by May 1, 1997. In its final version, Revision 4, 93% of all activities were scheduled to be complete by this date. Upon closure of the plan, 92% of all activities were completed, incorporated into baseload work activities, or evaluated as no longer necessary. A total of 85 plan activities remained to be performed, 24 of which were incorporated into baseload work activities or evaluated as no longer necessary. The resulting 61 activities were consolidated into 21 follow-up actions that are being carried into the NPG Business Plan. Additionally, the closure review process identified an additional 16 follow-up actions that were not part of the final Phase 3 Plan that were appropriate to add to the NPG Business Plan.

Appendix A contains the complete listing of follow-up actions, which are divided into two categories. Essential follow-up actions are those necessary to meet Phase 3 Plan

Strategy or Program objectives. Documentation of closure of these actions will be filed with the original Phase 3 Plan closure package. Deviations from the stated action scope requires approval of the Vice President of Nuclear Energy. Nonessential follow-up actions are those actions that are not necessary to meet Phase 3 Plan Strategy or Program objectives. Completion of these activities is a function of individual work priority relative to other business considerations.

5.1.3 Significant Observations

The Phase 3 Plan established the strategic direction of the NPG by focusing activities on supporting plant operations and the competitiveness of the business. Although there were detractors during the plan implementation, the strategies remained valid, and will be projected into the future through the NPG Business Plan.

The strategies and programs have resulted in developing the needed organizational and programmatic infrastructure that will lead to sustained improvement in plant and organizational performance, and set the stage for continuous improvement. Although some actions identified in the Phase 3 Plan have not been completed, the results of the Plan actions have been effective in meeting the Program objectives.

While much of the Phase 3 Plan focused on establishing infrastructure that will ensure the continued success of CNS, a number of notable accomplishments were realized and recognized by both internal and external observations. These include:

- An independent review of Phase 3 Plan progress conducted by a team of NPG and industry peers in September, 1996 noted that "A very bright success has been achieved in getting the whole station to focus on supporting operations. Operations feels that today their schedule is being followed and they are receiving the necessary support."

- The October 1996 evaluation of the station by INPO resulted in identification of a number of strengths that are directly attributable to Phase 3 Plan implementation, including the Management Expectations for Operations, Plant Configuration Control and Design Basis, Training Program Improvement, and On-Site Public Relations programs.

- Additional evidence of improvements resulting from Phase 3 Plan efforts were noted in the January, 1997 Systematic Assessment of Licensee Performance report. Areas noted as improved included those addressed by the Maintenance Improvement, Management Expectations for Operations, Assessments, Corrective Action, and Operating Experience Review programs.

- Station Quality Assurance audits and surveillances reflect a generally positive trend with respect to overall station performance, with the number of significant issues, as well as the total number of issues identified, reflecting an increasing standard of performance.

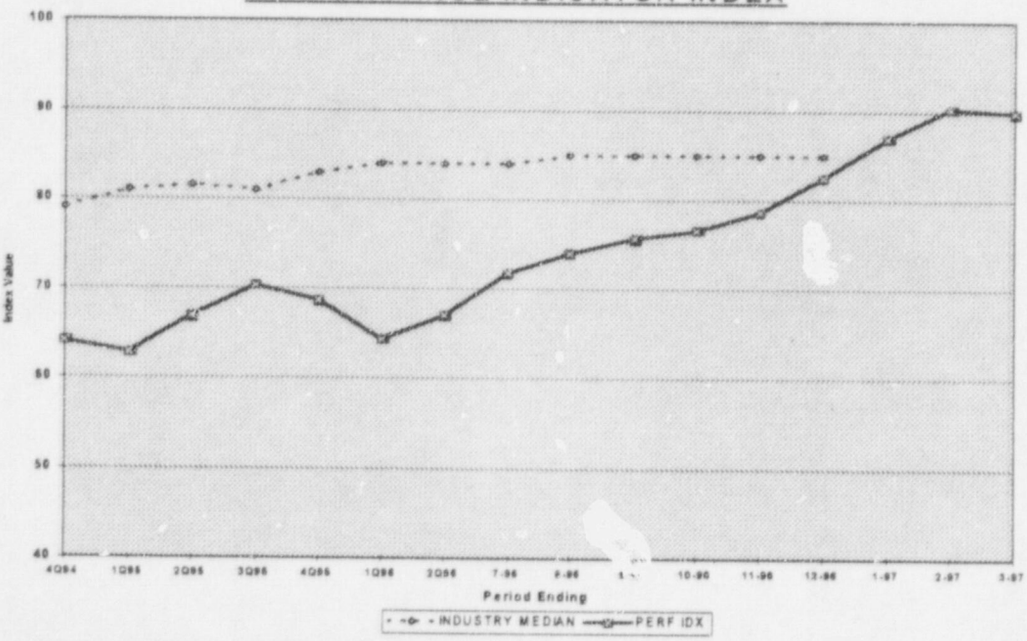
The Phase 3 Plan guided the staff in achieving improvements in the regulatory and cost performance areas, as well as achieving significant improvements in the operating performance areas.

- In the cost area, significant improvements in management processes and accountability were made as well as in long range planning. Projected targets ($/MWh) were met, despite continued costs associated with restoring engineering health, which caused upward pressure on budgets.

- In the regulatory area, internal processes for written communication and tracking of commitments were greatly improved, but implementation of the station Directive for NRC communications was not effective until late in the Plan period. It is surmised that ineffective communication directly impacted our 1997 SALP results, because we were not successful in providing NRC with current, timely completed actions and results associated with the Plan.

- In the operating performance area, composite performance, as measured by the INPO Performance Indicator Index, showed dramatic and steady improvement. This indicator, shown in chart that follows, represents the weighted performance of the standard industry benchmark indicators. CNS's performance over the duration of the Phase 3 Plan rose from near the lowest in the industry to exceed the industry median plant performance.

PERFORMANCE INDICATOR INDEX



5.2 Strategy Results Achieved

5.2.1 Focus on Operations Strategy

This strategy focused efforts on safe operation by redefining the roles and responsibilities of functions and individuals, establishing uniform work priorities, setting standards for performance, restructuring programs and processes to facilitate the completion of work and the focus on operational needs, applying safe operating principles in establishing work priorities and in the conduct of operation and a disciplined approach to execution and accountability for operational performance results. Figure 5-1 shows the program tree structure for this strategy.

FOCUS ON OPERATIONS [R. Gardner] STRATEGY: *Focus efforts on safe operation by redefining the roles and responsibilities of functions and individuals. Establish uniform work priorities, set standards for performance (quality, timeliness, and cost) and restructure programs and processes to facilitate completion of work and focus on operational needs. Apply safe operating principles in establishing work priorities and in the conduct of operation and a disciplined approach to execution and accountability for operational performance results.*	**Management Expectations for Operations** [D. VanDerKamp] Objective: *Increase the focus on safe plant operation through specific improvements in the conduct of plant operations.* **Prioritization of NPG Workload** [R. Wenzl] Objective: *Ensure a unified prioritization process is employed by all NPG departments that consistently focuses on safety, operation, and cost.* **Operations Critical Work Processes** [J. Brown] Objective: *Establish clear ownership and accountability for those processes critical to safe operations; improve the processes with respect to safety, efficiency, and relevance.* **Organizational Focus** [K. Pounders] Objective: *Evaluate and modify NPPD organizations to ensure they are appropriately focused on CNS operation.*

Figure 5-1: Focus on Operations Strategy

Management Expectations for Operations Program

The Management Expectations for Operations Program met the program objectives in that specific improvements in the conduct of operations in such areas as Control Room conduct, ownership of the facility by Operations and development of Operations personnel have resulted in observable and sustainable improvement.

The success of this program was evident in the safe operation demonstrated during Refueling Outage 16 and subsequent power operation. Cooper did have two events, one in Refueling Outage 16 and another in January 1996, which indicated that station personnel had not internalized their obligation to report mistakes to supervisors. These events resulted in more than termination of employees involved. Management performed an external "Culture Assessment" which identified the reasons behind employee reluctance to report problems. Management has taken subsequent action to reinforce expectations regarding reporting errors and problems. The success of this effort has been demonstrated by the continuously lowering threshold for writing Problem Identification Reports.

Overall success in improving operational performance has been evidenced by the fact that CNS has not had a scram in over four years, by the fact that the only shutdown during Cycle 17 was a planned outage to replace a failed fuel rod, by the fact that this short outage was performed event free and in record breaking time, and by the fact that in 1996 Cooper had a record breaking year in overall power generation.

Prioritization of NPG Workload Program

The Prioritization of NPG Workload Program met the program objectives in that a uniform prioritization system that appropriately focused on safety, quality, timeliness and cost effective performance was established by the creation and implementation of NPG Directive 4.12, which requires personnel to identify a priority for each individual assignment. The priority is provided by a graded system which assigns a higher priority to items which have safety significance or a direct impact to continued plant operation.

The success of this program has been validated by the decrease in the backlog of corrective action program items and other station work backlogs. Within the corrective action program, the higher priority items have decreased at a faster rate, as one would have expected. Similarly, the backlog of maintenance work requests has been reduced.

Operations Critical Work Processes Program

The Operations Critical Work Processes Program met the program objectives in that clear ownership and accountability with respect to safety, efficiency and relevance were established for all operations-related processes. The program's objectives were subsumed largely by observed and active ownership of the processes which had been established during the Phase 1 Performance Improvement Plan. This was evident as self-assessment of ten of the selected eleven critical processes was initiated during this program's tenure by the respective process owners outside of this program's purview.

An example was the Life Cycle Maintenance process which was created during Phase 3. [For further discussion, see the Station Reliability Program under the Station Capacity and Reliability Strategy.] There was one program heavily involving operations which was assessed under the umbrella of the Operations Critical Work Processes program. That was the System Operability Assessment Committee (SOAC) process which reviews system status prior to return to operability as part of the outage process. The SOAC process assessment following Refueling Outage 16 resulted in numerous improvements which were incorporated into the procedure and subsequently used during Refueling Outage 17.

Organizational Focus Program

The Organizational Focus Program designed and implemented a new engineering organization, measured performance, adjusted the organization and processes, and took specific actions to increase the effectiveness of plant system engineers. The Engineering reorganization successfully integrated engineering programs and organizational structure into the site staff and improved alignment of engineering functions according to plant operational needs.

The results of the Engineering improvements made to date, however, are mixed. The level of awareness and commitment to the needs of the plant has definitely increased within the Engineering Division. Conversely, through evaluation and the most recent SALP, CNS management has concluded it has not consistently enforced performance expectations through training, coaching and accountability. Completion of the Engineering Action Plan is essential to fulfilling the program objectives and will be carried forward into the NPG Business Plan (see Appendix A).

The second part of the Organizational Focus Program has been a success. A pilot project was completed that involved modifying the organization and roles and responsibilities in a manner that focused on CNS operations from a cross functional point of view. This was achieved with the successful startup and operation of the Fix it Now (FIN) Team. As a result of the FIN team, an emphasis on operations while expeditiously restoring equipments to operability has been achieved. Additional benefits have resulted due to spin off improvements in other work processes at the station. The FIN team is being retained and a second team is being considered.

Strategy Summary

The Focus on Operations Strategy was successful in meeting its objectives. Support for Operations, the proper focus by station employees on operations, and work processes improvement to focus on operations have been established.

The success of this strategy has been demonstrated in the most recent record breaking power operation, and in the day to day improvement in operations evidenced in the plant. The establishment of a Work Control Center outside the control room, the involvement of the Training Department in monitoring operations performance in the plant, the ownership of the plant demonstrated by operating crews, the assignment of Shift Test Engineers to Operations, and the improvement in the quality of shift turnover briefings are examples of continuous improvement in this area.

This strategy has been supported by the success of other strategies at Cooper Nuclear Station. For example, the Station Capacity and Reliability Improvement strategy resulted in fewer plant equipment challenges to the operators. Also, the Configuration Management strategy has resulted in improved records management and support for operators with more timely and accurate drawings, procedures, and manuals. The Resource Allocation and Work Management strategy has resulted in a more integrated scheduling and work control process providing fewer challenges to operators. Additionally, the Skills and Qualifications strategy has resulted in improved operator performance. These examples are illustrative and not all inclusive.

The station has developed several vehicles to ensure continuous improvement in this strategic area. The corrective action process has a very low threshold, a strong self assessment program is in place, and process reengineering and improvement have spread into all departments at the station.

5.2.2 Configuration Management Strategy

This strategy established a clear understanding of the rules for managing the configuration of the plant for operations, maintenance, and plant change activities. It assigned responsibility for ownership of configuration programs, defined the interface responsibilities, and clarified responsibility for decision making. Figure 5-2 shows the program tree structure for this strategy.

CONFIGURATION MANAGEMENT [J. Pelletier] STRATEGY: *Establish a clear understanding of the rules for managing the configuration of the plant for all operations, maintenance, and change activities. Assign responsibility for ownership of configuration programs, define the interface responsibilities, and clarify responsibility for decision making.*	**Technical Specifications Improvement** [G. Sen] Objective: *Develop and implement improved Technical Specifications and bases.* **Plant Configuration Control and Design Basis** [Z. Wahab] Objective: *Improve the controls for maintaining plant configuration consistent with the design basis. Upgrade availability, accuracy, completeness, use, and control of design basis information. Resolve existing configuration control deficiencies.* **Records Management** [S. Stiers] Objective: *Develop policies and procedures to improve end user access to information required in the performance of essential work activities, acquire equipment and facilities necessary to implement the program, train personnel to updated policies and procedures, and establish a centralized database for end user's to identify document revision status.*

Figure 5-2: Configuration Management Strategy

Technical Specification Improvement Program

Improved Technical Specifications (ITS) were created, reviewed, internally approved, and submitted to the NRC for approval. When implemented, the ITS will: provide clearer Limiting Conditions of Operation (LCO's) and Surveillance Requirements; reduce the need for interpretations; improve consistency between specifications; provide LCO's for Technical Specification equipment that currently lack them; provide LCO's that reflect the true safety basis; and provide greatly improved Technical Specification Bases. ITS implementation is essential to fulfilling the program objectives and will be carried forward into the NPG Business Plan (see Appendix A).

Plant Configuration Control and Design Basis Program

Nineteen Design Criteria Documents (DCD) were created, in addition to eleven created previously, thus providing easily accessible design and licensing information for important plant systems. Immediate areas for improvement arising from self assessments were addressed; however, longer term improvements remain outstanding. In addition, the CNS design basis information was significantly upgraded through design basis reconstitution projects such as SAFER/GESTR LOCA, ITS instrument calculations, and Appendix R safe shutdown analysis.

Significant improvement in configuration control processes was also made, including the drawing change process, plant modification process, classification evaluation process, replacement component evaluation process, scaffolding process, temporary shielding process, operational assessment process, and the safety evaluation (10CFR50.59) process. Appropriate training on these process changes, as well as enhanced plant systems training provided to station engineers, has enhanced sensitivity to and control of plant configuration. Further improvements, such as the USAR rebaselining project and potential unauthorized modifications elimination project, are ongoing.

Resolution of existing configuration control deficiencies, including DCD open items, potential unauthorized modifications, drawing validation plan, and USAR rebaselining, as well as selected longer term improvements to configuration management processes, are essential to fulfilling the program objectives and will be carried forward into the NPG Business Plan (see Appendix A).

Records Management Program

This program was added to the Phase 3 Plan in December 1995 (Revision 2), based on the conclusions of NPG studies that confirmed the need to upgrade and centralize records management practices. The Records Management Program met the program objectives in that records management was significantly upgraded. This included the establishment of improved procedures and processes for the control of quality documents, and establishment of centralized records functions and facilities to control distribution of active records, as well as storage and maintenance of archival records in support of the plant.

Strategy Summary

The Configuration Management Strategy was successful in meeting its objectives. The rules for managing the configuration of the plant are established, ownership of the

configuration control program is clearly identified and interfaces, responsibilities and decision making authority are provided in the implementing procedures.

5.2.3 Resource Allocation and Work Management Strategy

This strategy established resource allocation and work management systems that ensure achievement of NPG top level goals. Figure 5-3 shows the program tree structure for this strategy.

RESOURCE ALLOCATION AND WORK MANAGEMENT [J. Dillich] STRATEGY: *Establish resource allocation and work management systems that ensure achievement of NPG top level goals.*	**Integrated Planning, Scheduling and Work Control** [D. Billesbach] Objective: *Integrate selected work activities into a single site plan and schedule to provide for safe and effective resource utilization.* **Budgeting and Resource Allocation** [M. Dixon] Objective: *Develop a process to allocate financial and human resources to support achievement of top level goals (SALP, Capacity Factor, $/MWH).* **Elimination of Low Value Activities and Processes** [A. Sessoms] Objective: *Ensure expenditures are more directly related to work activities that contribute to NPG's goals and priorities.* **Partnering** [J. Long] Objective: *Establish programs and actions to share and obtain resources to improve efficiency, quality, and performance while reducing costs.*

Figure 5-3: Resource Allocation and Work Control Strategy

Integrated Planning, Scheduling, and Work Control Program

The Integrated Planning, Scheduling, and Work Control Program met the program objectives in that improvements were made to the way in which CNS resources support the maintenance of plant assets. An integrated approach to planning, scheduling, and work management was developed and concentrated on four main activities: work information management, selection of key work activities, tools for enhanced planning and estimating, and life-cycle maintenance. Tangible benefits from these activities include preventive maintenance optimization, site-wide alignment for scheduling, and improved performance indicators.

Budgeting and Resource Allocation Program

The Budgeting and Resource Allocation Program met the program objectives in that integration of financial information into the long-term business decision making process was achieved. A long-range plan identifies major CNS activities in the next three cycles; adjustments to this plan are managed using the change control process. This program bridged the gap between technical plant management and financial business planning.

Elimination of Low Value Activities Program

The Elimination of Low Value Activities Program met the program objectives in that a process was established for identifying and modifying or eliminating activities of questionable value. Numerous activities that provided little or no benefit were eliminated or streamlined. The awareness by all workers that activities need to contribute directly to goals and priorities was a significant step toward continuous improvement.

Partnering Program

The Partnering Program met the program objectives in that the creation of the Utility Services Alliance (USA), with NPPD as a charter member, established a means for resource sharing. Monetary savings resulting from participation in USA have been modest thus far, however, the outlook for much larger savings as the alliance matures is good. In addition, awareness of the benefits from sharing resources was heightened.

Strategy Summary

The Resource Allocation and Work Management Strategy was successful in meeting its objectives. Significant improvements were realized in the effectiveness and efficiency of the CNS business unit. The establishment of a long-term planning and change control process, a life-cycle approach to maintaining CNS assets, and a collective mind set that focuses on continuous improvement and "value-added" activities has laid the foundation for attaining the NPG top level goals.

5.2.4 Continuous Improvement Strategy

This strategy put in place the infrastructure that will provide for continuously improving NPG performance by routinely assessing performance, including review of operating experience, and identifying both improvements and problems. In addition, it will ultimately reduce the impact and recurrence of problems, ensuring actions are completed effectively by follow-up and feedback after corrective actions. Figure 5-4 shows the program tree structure for this strategy.

CONTINUOUS IMPROVEMENT [M. Gillan] STRATEGY: *Continuously improve NPG's performance by routinely assessing performance, including review of operating experience and identifying both improvements and problems. Reduce the impact and recurrence of problems, ensuring they are closed out effectively by follow-up and feedback after corrective actions.*	**Corrective Action** [M. Gillan] Objective: *Enhance the corrective action program and make it an integral line management function.* **Operating Experience Review** [D. Reeves] Objective: *Reassess historical OE reviews, improve the OE review process, and eliminate the NPRDS backlog.* **Assessment** [T. Hough] Objective: *Improve the skills and tools available to management for self-assessment.* **Procedure Use and Adherence** [J. Scheuerman] Objective: *Develop a comprehensive approach to procedure use and adherence that clearly defines management expectations, promotes individual accountability and ownership, and facilitates the development and maintenance of quality procedures that support the safe, efficient, and consistent operation of the plant.*

Figure 5-4: Continuous Improvement Strategy

Corrective Action Program

The Corrective Action Program met the program objectives in that programmatic changes were implemented to establish a human performance improvement program, a trending and precursor program, and additional process improvements identified through self assessment. Station instructions on human performance and corrective action process implementation formalized management expectations, and root cause evaluator training was enhanced. This infrastructure, along with strong line management ownership of the corrective action process and station emphasis on

effectively dealing with long standing issues, provides a solid foundation for future success.

Operating Experience Review Program

The Operating Experience Review (OER) Program met the program objectives in that a high degree of confidence was established in the adequacy of responses to historical industry events and in the effectiveness of OER process changes implemented. The availability and use of industry experience is wide-spread in all station activities. The NPRDS program was upgraded and backlogs eliminated, thus assuring a smooth transition to the next generation equipment performance and trending program to be implemented by the industry in mid-1997.

Assessment Program

The Assessment Program met the program objectives in that a viable self assessment program was established. The governing directive provides flexibility and adaptability in the type of evaluation performed and incorporates a wide range of self assessment tools. Departmental evaluations provided each department with an understanding of its processes, including the relative importance of each process, as well as the basis upon which a set of appropriate process performance indicators can be established. The Independent Review Group has established its reputation as process improvement experts.

Procedure Use and Adherence Program

This program was added to the Phase 3 Plan in August 1995 (Revision 1), based on a trend of programmatic weaknesses that resulted in a failure to meet management expectations for the use and adherence to station procedures. Many station procedures were inaccurate or inadequate, and the procedure change process was extremely cumbersome. Management expectations concerning procedure use and adherence were established and communicated to all employees through human performance improvement workshops. The procedure change process was significantly enhanced and procedure change backlogs were eliminated. Posted procedures were reviewed for adequacy and updated or eliminated, as appropriate. As a result of these improvements, average processing time for procedure changes was reduced from 3-4 months to less than one month. While the Procedure Use and Adherence Program met the original program objectives, significant additional improvement is planned as a station alignment issue.

Strategy Summary

The Continuous Improvement Strategy was successful in instilling a continuous improvement mind set in the work force and in improving the NPG's ability to identify and evaluate plant issues. Additional improvement is necessary to become a true learning organization that is proactive in identifying and resolving potential plant issues before they become a challenge to safe operation. While each of the programs in the Continuous Improvement Strategy achieved original program objectives, the strategy cannot be considered successful until sustained improvement is evident in overall station performance in resolving long standing issues, taking timely effective corrective actions, and improving overall station procedure adherence performance. These essential issues will be carried forward into the NPG Business Plan (see Appendix A).

5.2.5 Management Practices and Systems Strategy

This strategy implemented systems and practices that communicate and link the NPG vision and business objectives to individual performance expectations and accountability. Figure 5-5 shows the program tree structure for this strategy.

MANAGEMENT PRACTICES AND SYSTEMS [M. Peckham] STRATEGY: *Implement systems and practices that communicate and link the NPG vision and business objectives to individual performance expectations and accountability.*	**Business and Strategic Planning** [J. Long] Objective: *Develop and implement an integrated management planning process.* **Setting Management Expectations** [E. Mace] Objective: *Establish a process for management expectations to be identified, communicated and enforced.* **Performance Management** [J. Long] Objective: *Develop a performance indicator program that provides management and employees with accurate and timely feedback.* **Performance Appraisal** [M. White] Objective: *Develop and implement a performance appraisal system that ensures individual managers and employees are accomplishing organizational goals and objectives.* **Information Systems for Management** [P. Hyzer] Objective: *Provide the appropriate information tools that enable NPG management to monitor performance and adjust priorities to achieve NPG goals.*

Figure 5-5: Management Practices and Systems Strategy

Business and Strategic Planning Program

The Business and Strategic Planning Program met the program objectives in that a new business and strategic planning process is in place. Significant changes in the NPPD leadership and organization that occurred in early 1996 resulted in abandonment of early progress made toward program objectives in favor of the NPG participating fully in District strategic planning efforts. While this delayed the development of the business planning process, the final product is closely aligned with District goals and objectives. The 1997-2001 NPG Business Plan was issued concurrently with the closure of the

Phase 3 Performance Improvement Plan. Phase 3 Plan follow-up actions identified in Appendix A of this closure report were carried into the NPG Business Plan.

Setting Management Expectations Program

The Setting Management Expectations Program met the program objectives in that practices that regularly establish and communicate management expectations are in place. All personnel meetings, Today's Issue, 4 C's, luncheons with employees, plant Information Display System messages, station alignment initiatives, and pre-outage videos are examples of the mechanisms used to regularly communicate expectations to the staff. Several of these tools and initiatives were not specifically mandated by the Phase 3 Plan. This demonstrates that the message has been received and internalized by the management staff. Relentless reinforcement is required to build the critical mass necessary to sustain continuous improvement in this area.

Performance Management Program

The Performance Management Program met the program objectives in that the performance management program is established and working well. Performance indicators are published monthly and have steadily grown in sophistication and quality. CNS Vital Signs, not a part of the original program, have been developed as part of the performance monitoring for 1997. The true measure of success of this project is the results achieved. CNS has improved its performance in nearly all areas. The station achieved its interim top level goals for capacity factor and cost and nearly achieved the regulatory performance goal (2.25 vs. 2.0).

Performance Appraisal Program

The Performance Appraisal Program met the program objectives in that new performance appraisal programs for exempt and non-exempt employees are in place and experience with the programs has been obtained. While results were mixed due to inexperience of some of the supervisory staff during the initial implementation, improvements are expected in the next cycle. Continued emphasis, oversight and reinforcement of expectations by the management staff will be required to ensure optimum results and consistency of application. An assessment of both programs is required and will be administered through the self assessment process.

Information Systems for Management Program

The project to develop information systems for management has only partially met its objectives. However, the primary reason for not yet realizing the goals was the result of integrating the needs of four separate Phase 3 Plans such that a single computer

software tool was procured. The highest priority for implementation of the tool was to establish system performance monitoring under the Capacity Increases Program. Once the tool is implemented for this purpose, the priority will shift to setting up the software to accomplish the objectives of the Information Systems for Management program. In anticipation of fully utilizing the performance monitoring software tool, the Performance Analysis Department was created by combining the Events Analysis Department, Independent Review Group, and the Computer Applications Group. Implementation of the software tool is essential to fulfilling the program objectives and will be carried forward into the NPG Business Plan (see Appendix A).

Strategy Summary

The Management Practices and Systems Strategy was successful in meeting its objectives. This strategy, along with the Management Expectations for Operations Program (see Focus on Operations Strategy) and the Assessment of Managers, Supervisors, and Key Staff Program (see Skills and Qualification Strategy), effectively established infrastructure that is essential to station performance management through the development of mechanisms for defining and monitoring performance goals. More importantly, the strategy instilled a performance management culture throughout the NPG; our people have a much better understanding of how individual and process performance management impacts overall success. Continued focus on clearly establishing top level goals and then translating those goals into action is critical to the continued improvement and future viability of the station.

5.2.6 Skills and Qualifications Strategy

This strategy developed the capabilities and depth of the organization by defining required organizational development attributes, evaluating personnel against these attributes, and developing or recruiting individuals accordingly. Figure 5-6 shows the program tree structure for this strategy.

SKILLS AND QUALIFICATIONS [A. Shiever] STRATEGY: *Develop the capabilities and depth of the organization by defining required organizational development attributes, evaluating personnel against these attributes, and developing or recruiting individuals accordingly.*	**Assessment of Managers, Supervisors and Key Staff** [M. White] Objective: *Develop and implement effective tools and methods to assess staff against required skills in order to communicate expectations, develop bench strength, and assign human resources effectively.* **Organizational Development/Required Skills** [J. Dutton] Objective: *Develop and implement required training and development programs for managers, supervisors and key staff.* **Succession Planning** [J. Long] Objective: *Put in place effective succession planning to reinforce management development priorities in support of selecting the best qualified, most capable individuals for key positions in order to build and preserve bench strength.* **Training Program Improvement** [A. Shiever] Objective: *The objective of this action plan is to improve the quality of CNS training programs and maintain them in a condition that ensures renewal of accreditation without concerns.*

Figure 5-6: Skills and Qualifications Strategy

Assessment of Managers, Supervisors, and Key Staff Program

General competencies required of managers, supervisors, and key staff were identified in conjunction with the implementation of new performance appraisal systems for exempt and non-exempt personnel. Assessment instruments for these general competencies were evaluated and determined to be adequately addressed by the existing District inventory of tools. Specific competencies for critical staff positions were identified in conjunction with development of the new succession planning directive. Assessment and development of selected individuals, including coaching

and mentoring, were provided by consultants that specialize in these areas. Identification of CNS unique competencies required of managers, supervisors, and key staff, and implementation of methods to assess and develop these competencies is essential to fulfilling the program objectives and will be carried forward into the NPG Business Plan (see Appendix A).

Organizational Development/Required Skills Program

The Organizational Development/Required Skills Program met the program objectives in that general organizational competencies were identified and training for pre-supervisors developed. Concurrent with the execution of this program, an NPPD initiative to overhaul the District development program for managers and supervisors was initiated, leading to creation of the Energy Institute of Nebraska, which is intended to provide training for meeting general competencies. Accordingly, the CNS effort was subsumed by the District initiative. The NPG will monitor the results of the District initiative and capture any shortcomings in the essential action identified above for the Assessment of Managers, Supervisors, and Key Staff Program.

Succession Planning Program

The objective of the Succession Planning Program was met in that a governing directive was implemented to establish Nuclear Succession Planning requirements and responsibilities. Cooper Nuclear Station senior management received mentoring training, and initial candidates for inclusion in the Nuclear Succession Plan were identified. The succession planning process will be updated on an annual basis in accordance with the new directive.

Training Program Improvement Program

This program was added to the Phase 3 Plan in December 1995 (Revision 2). The impetus for the establishment of this program was a self assessment of training conducted in September 1995 that identified several serious weaknesses in the Maintenance and Technical training programs. Despite many actions to upgrade the training programs, insufficient progress in improvement of the training programs resulted in the National Nuclear Accrediting Board placing the accreditation of the programs in a probationary status in September 1996. An Accreditation Renewal Action Plan was developed to implement both short term improvements and activities that will sustain continual improvement over the long term. In March 1997 the Accrediting Board reviewed the Maintenance and Technical training programs and awarded full accreditation. Thus, the objectives of the Training Program Improvement Program objective were met in that accreditation was renewed for technical training

programs. The lessons learned from this process are also being applied to the Operations training programs.

Strategy Summary

The Skills and Qualifications Strategy was successful in meeting its objectives. Like the Management Practices and Systems strategy, this strategy established infrastructure vital to continued success of the NPG. The effectiveness of the strategy in developing bench strength has been demonstrated by the relatively low number of managers hired from outside the District over the past 18 months, despite the departure of several key personnel.

5.2.7 External Relations Strategy

This strategy established mechanisms to communicate operational and regulatory status and issues to participants and regulators, including holding periodic meetings with participants to ensure coordination of longer-term business plans. Figure 5-7 shows the program tree structure for this strategy.

EXTERNAL RELATIONS [B. Houston] STRATEGY: *Establish mechanisms to communicate operational and regulatory status and issues to participants and regulators. Hold periodic meetings with participants to ensure coordination of longer-term business plans.*	**NRC Communications** [M. Bennett] Objective: *Develop and implement a program that will ensure communications between NPG and NRC are open, responsive, and timely. All commitments are tracked to closure.* **Operations-Related Communications With External Parties** [M. Krumland] Objective: *Establish a communications plan to share information relative to NPG operations with external audiences.* **On-site Public Relations** [J. Sayer] Objective: *Establish an On-Site Public Relations activity to improve internal and external communications.*

Figure 5-7: External Relations Strategy

NRC Communications Program

The NRC Communications Program met the program objectives in that processes have been established to track commitments and resolve NRC open items. In addition, a station directive was implemented and established the management expectations for communicating with the NRC. This includes a matrix that addresses the appropriate NPG management personnel and their respective NRC counterparts. A frequency for conduct of this interface is included in the matrix. Initial implementation was not effective and added emphasis was applied. At the end of the Plan period, NRC communications have significantly improved.

In addition to the program actions, efforts have been taken or are in progress to ensure that NPG communications with the NRC are responsive, complete, and accurate. For example, a team of three very experienced managers were hired to evaluate and coach CNS managers and supervisors in their communication with the NRC. This proved to be very successful in opening the eyes of the CNS management team. Another action taken which has been very successful has been the management of an NRC issues list

by the Licensing Department. This has resulted in CNS managers focusing on closing issues in a more timely and effective manner. The success of this program has been reflected in the Senior Resident Inspector's favorable comment about the improvement in responsiveness to both station management and to the regional NRC Project Manager. Both that individual and the Director of Reactor Projects for Region IV have commented favorably on improving communications with CNS.

Operations Related Communications With External Parties Program

The Operations Related Communications With External Parties Program met the objectives in that communications with our participants (Lincoln Electric Service and Mid American Energy Corporation), the NPPD Board of Directors, and various government agencies in the state of Nebraska have significantly improved.

This program established some fundamental methods for accomplishing our goals. For example, regularly scheduled meetings were established with our participants. NPPD and its partners meet monthly as the Operating Committee to discuss performance at the station and plans for future activities. Communications with the Board of Directors has been enhanced by providing more opportunities for reporting to the Board and the Nuclear Subcommittee, including having Board members visit the station. Lastly, considerable effort was made to routinely communicate with neighboring counties and the State of Nebraska. The Emergency Preparedness Department created a staff position as an external agency communications coordinator last year. This year, the former emergency response advisor to Governor Nelson (Nebraska) has been hired to a permanent staff position. Feedback from all of CNS's external customers has been very positive.

On-Site Public Relations Program

The On-Site Public Relations Program met the program objectives through creation of a CNS Public Relations/Employee Communications Coordinator position. The extensive effort of this individual has created a world class internal communications program for Cooper Nuclear Station. Employing a wide variety of communications tools, including station newsletters, issue briefing papers, employee meetings with management, routine staff meetings, lunch with the Vice President of Nuclear Energy and Plant Manager, Cooper has enjoyed a marked improvement in internal communications.

Additional efforts by station management have been taken to focus the station on the key initiatives being taken to improve CNS performance. This process is called alignment and has resulted in all hands meetings, station posters, and even roadside "Burma Shave" type signs.

The station has increased its efforts to assess the effectiveness of this program and indicate much success in this area.

Strategy Summary

The External Relations strategy was successful in meeting its goal of establishing mechanisms to communicate operational and regulatory status and issues to participants and regulators and to dialog with participants to ensure coordination of longer-term business plans. Station management is not entirely satisfied with either the quality or timeliness of communications with the NRC. Enhancements to the strategy are being developed to sustain continuous improvement. Additional training for station employees is planned. Improved communications are also expected from better coordination of the CNS corrective action program with regulatory correspondence.

Continuous improvement in communications with external parties has been evident in partnering of a joint engineering-economic viability study by NPPD, Lincoln Electric System and Mid American Energy. The Emergency Preparedness (EP) Department has met with county officials to improve flood planning. EP is embarking on assignment of knowledgeable CNS employees to act as liaisons during emergency response conditions to each of the counties involved in EP. Finally, CNS is working on initiatives to conduct better surveys of employees and to incorporate employee opinion into the management performance appraisal system.

5.2.8 Station Capacity and Reliability Strategy

This strategy established the management systems and processes that will focus on systematic improvements in plant reliability and promote consistently high levels of plant production capacity. It also instilled efficiency improvements in operating practices as a standard business method. Figure 5-8 shows the program tree structure for this strategy.

STATION CAPACITY AND RELIABILITY [J. Gausman] STRATEGY: *Establish the management systems and processes that will focus on systematic improvements in plant reliability and promote consistently high levels of plant production capacity. Instill efficiency improvements in operating practices as a standard business method.*	**Fuel Cycle Optimization** [E. Lanning] Objective: *Implement a process for the timely generation and approval of the fuel cycle strategy and assumptions for the reload fuel design.* **Capacity Increases** [J. Salisbury] Objective: *Establish a program (or program ownership) to 1) minimize power reductions, 2) reduce house loads, 3) maximize cycle efficiency, and 4) improve plant availability in a cost effective and safe manner.* **Plant Reliability** [S. Freborg] Objective: *Focus resources on the identification and resolution of precursors to conditions potentially affecting plant reliability to meet or exceed NPG performance goals in a cost effective manner.* **Maintenance** [J. Dillich] Objective: *Implement a cost effective performance based planned maintenance program which supports the station's performance goals, avoids the recurrence of unexpected maintenance preventable equipment failures, and meets regulatory expectations.* **Power Up-rate** [J. Gausman] Objective: *Establish a program to determine the feasibility of uprating the plant to 2500 MWth and, if feasible, implement the change during the 1997 refueling outage in a cost effective and safe manner.*

Figure 5-8: Station Capacity and Reliability Strategy

Fuel Cycle Optimization Program

The Fuel Cycle Optimization Program met the program objective in that procedures were put in place for timely generation and approval of each fuel cycle strategy. Minimizing uranium cost was addressed with the creation of two additional procedures. Lastly, a High Level Waste Strategy was formulated per the program. That strategy is under evaluation and will be considered for implementation as part the NPG Business Planning process.

During Phase 3 program closure review, it was determined that the procedures developed thus far do not address optimizing fuel type (i.e., GE9, GE11, GE13, etc.). The objectives written into the Performance Improvement Plan emphasized optimization with respect to cycle design and procurement of uranium. While these objectives have been met, future work in this area will focus on the process for an ongoing evaluation of fuel type in the core design.

Capacity Increases Program

The Capacity Increases Program met the program objective in that both short and long term improvements in the station's ability to provide maximum electric power generation were implemented. Capacity increases were realized through changes in the scheduling of unit down powers, and development of a living thermodynamic model of the plant's steam cycle. A number of potentially economic steam cycle and plant modifications were identified, but judged to be not economically prudent. A thermal performance report, which increases focus on opportunities for recovering lost power is published weekly and is available through the NPPD Intranet (company wide electronic mail and webpage system.)

Plant Reliability Program

The Plant Reliability Program met the program objectives through the comprehensive review of forced outage/power reduction lessons learned, analysis of equipment aging/obsolescence, elimination of excessive testing requirements, and review of CNS plant design and operation for risks to power generation reliability. A number of items were identified, prioritized, and scheduled for completion. Many were worked during Refueling Outage 17. Those that have not been worked are included in the NPG Business Plan.

Future plant reliability is assured through a robust Operational Experience Review program, an improved design change process, implementation of procedures to address the Maintenance Rule, and other programs. Finally, a Life Cycle Maintenance program and its attendant preventive maintenance standards, have been created. Its

implementation is in progress. This enhancement was not required by the original Phase 3 program but will be a forcing function for ensuring continuous improvement in plant reliability.

Maintenance Improvement Program

The Maintenance Improvement Program met the program objective in that the Maintenance Rule (10CFR50.65) was successfully implemented, the CNS probabilistic safety analysis was integrated with the on-line maintenance program, and the development of the Life Cycle Maintenance strategy, which will be implemented following completion of Refueling Outage 17. Organizational structures, processes, and procedures have been modified to support this new maintenance philosophy.

Power Up-Rate Program

Power Up-rate was examined and determined to not be feasible through the 2004 time frame. Therefore, possible implementation of power up-rate is predicated on the structure of any agreement to operate the plant beyond the current contractual period.

Strategy Summary

The Station Capacity and Reliability Program was successful in meeting its overall objective to establish the management systems and processes that will focus on systematic improvements in plant reliability and promote consistently high levels of plant capacity. Procedures and programs focusing on continuous evaluation of reliability and capacity considerations are now a standard method of doing business at Cooper Nuclear Station.

The success of this program has been demonstrated in the success of Cooper following Refueling Outage 16. The plant operated continuously except for a nine day forced outage to repair a failed fuel rod. Overall cycle capacity factor was approximately 85% compared with an initial Phase 3 goal of 80%. During 1996, Cooper established a new record for annual net electric generation.

Continuing improvement in capacity and reliability is ensured by the focus on Life Cycle Maintenance that has been brought to the station and by other initiatives as well. The creation of the Fix it Now (FIN) Team, as discussed in the Focus on Operations Strategy has contributed to the success of the Station Capacity and Reliability Strategy. As a result of the FIN Team, backlogs of corrective maintenance have declined, even during the month prior to Refueling Outage 17. Establishment of an additional FIN Team is being considered by station management.

PART 1 - ESSENTIAL FOLLOW-UP ACTIONS

The actions listed in this table represent those actions necessary to completely meet Phase 3 Plan Strategy or Program objectives, as discussed in Section 5.2 of the report. Documentation of closure of these actions will be filed with the original closure package. Deviation from the stated action scope requires approval of the Vice President of Nuclear Energy.

Strategy / Program	Follow-up Actions	Responsibility
Focus on Operations		
Organizational Focus	Action 1: Implement the remaining key Engineering Action Plans, with a completion dates as indicated: System Engineering (Plan 01.F) 9/30/97 Process Improvements (Plan 01.N) 9/30/97 Backlog (Plan 02.1) 7/31/97 Unauthorized Modifications (Plan 18) 6/30/98 Configuration Management (Plan 01.H) 12/1/97 Modifications - Outage (Plan 05.W) 5/23/97 Modifications - Nonoutage (Plan 15) 9/30/97 Appendix R (Plan 06) 6/27/97 Scheduling (Plan 01.E) 12/30/97 ITS - Implementation 4/1/98	Senior Engineering Manager

Note - Items indicated with ☆ are additions to Phase 3 Plan scope.

Strategy / Program	Follow-up Actions	Responsibility
Configuration Management		
Technical Specifications Improvement	Action 1: Implement the Improved Technical Specifications, with a completion date of April 1, 1998.	Licensing Manager
Plant Configuration Control and Design Basis	Action 1: Resolve existing configuration control deficiencies, including DCD open items, unauthorized modifications, drawing validation plan, and USAR rebaselining, with a completion date of October 21, 1998. Action 2: Evaluate past configuration management self assessments and the Configuration Management Integrated Enhancement Plan and implement changes as required, with a completion date of December 1, 1997.	Design Engineering Manager Design Engineering Manager
Resource Allocation and Work Management		
No follow-up actions essential to meeting strategy or program objectives		
External Relations		
No follow-up actions essential to meeting strategy or program objectives		

Note - Items indicated with ☆ are additions to Phase 3 Plan scope.

Strategy / Program	Follow-up Actions	Responsibility
Continuous Improvement		
Strategy	☆Action 1 Improve overall station performance in resolving long standing issues and taking timely effective corrective actions, with a completion date of October 31, 1997. ☆Action 2 Improve overall station procedure adherence performance, with a completion date of October 31, 1997.	Plant Manager Senior Engineering Manager
Management Practices and Systems		
Information Systems for Management	Action 1: Complete implementation of the ISM software tool (Performa), with a completion date of August 1, 1997.	Performance Analysis Manager
Skills and Qualifications		
Assessment of Managers, Supervisors, and Key Staff	Action 1: Identify CNS unique competencies required of managers, supervisors, and key staff and implement a method to assess and develop these competencies, with a completion date of December 5, 1997.	CNS Human Resources Coordinator
Station Capacity and Reliability		
No follow-up actions essential to meeting strategy or program objectives		

Note - Items indicated with ☆ are additions to Phase 3 Plan scope.

PART 2 - NONESSENTIAL FOLLOW-UP ACTIONS

The actions listed in this table represent those actions that are not needed to meet Phase 3 Plan Strategy or Program objectives, as discussed in Section 5.2 of the report. Completion of these actions is a function of the business planning process, each to performed based on its individual merits relative to other business considerations.

Strategy / Program	Follow-up Actions	Responsibility
Focus on Operations		
Management Expectations for Operations	☆Action 1: Evaluate use of Senior Management as a Management Expectations Panel to conduct quarterly reviews of CNS performance and industry events.	Opera[illegible]anager
Prioritization of NPG Workload	Action 1: Develop a work management tool (Performa computer software program) to allow managers to view their current work load and to determine backlog. Action 2: Develop and implement required changes to the Prioritization of NPG Workload Directive based on survey of employees of 3/19/97. ☆Action 3: Provide additional training to Managers and Supervisors on the prioritization process and the use of the work management tool (Performa software).	Performance Analysis Manager Operations Manager Work Control Manager
Operations Critical Work Processes	None	N/A
Organizational Focus	None	N/A

Note - Items indicated with ☆ are additions to Phase 3 Plan scope.

Strategy / Program	Follow-up Actions	Responsibility
Configuration Management		
Technical Specifications Improvement	None	N/A
Plant Configuration Control and Design Basis	None	N/A
Records Management	Action 1: Complete development and implementation of the database for centralizing all controlled documents.	Administrative Services Manager
Resource Allocation and Work Management		
Integrated Planning, Scheduling and Work Control	Action 1: Implement & evaluate CWIT database programming changes. Action 2: Identify future work control process changes.	Work Control Manager Work Control Manager
Budgeting and Resource Allocation	☆Action 1: Train key personnel on the Long Range Planning process and develop process performance indicators.	Business Services Manager
Elimination of Low Value Activities and Processes	None	N/A
Partnering	None	N/A

Note - Items indicated with ☆ are additions to Phase 3 Plan scope.

Strategy / Program	Follow-up Actions	Responsibility
Continuous Improvement		
Corrective Action	☆Action 1: Formalize the trending data that is provided to management into one report.	Performance Analysis Manager
Operating Experience Review	None	N/A
Assessment	None	N/A
Procedure Use and Adherence	Action 1: Upgrade/enhance policy and implementing procedures. Action 2: Develop and implement a qualified reviewer program.	Administrative Services Manager Licensing Manager

Note - Items indicated with ☆ are additions to Phase 3 Plan scope.

Strategy / Program	Follow-up Actions	Responsibility
Management Practices and Systems		
Business and Strategic Planning	☆Action 1 Develop & implement governing directive for business planning process.	Performance Analysis Manager
Setting Management Expectations	☆Action 1: Distribute pocket-size copies of the "Principles of Success" to all plant staff.	Plant Manager
Performance Management	None	N/A
Performance Appraisal	Action 1: Perform formal evaluations of the exempt and non-exempt performance appraisal systems and implement necessary enhancements.	CNS Human Resources Coordinator
Information Systems for Management	Action 1: Evaluate ISM after Performa implementation. Action 2: Develop a desk top guide to provide for on-going review and ISM assessment and support.	Performance Analysis Manager Performance Analysis Manager

Note - Items indicated with ☆ are additions to Phase 3 Plan scop

Strategy / Program	Follow-up Actions	Responsibility
Skills and Qualifications		
Assessment of Managers, Supervisors, and Key Staff	None	N/A
Organizational Development/ Required Skills	None	N/A
Succession Planning	None	N/A
Training Program Improvement	None	N/A
External Relations		
NRC Communications	☆Action 1: Implement Regulatory Improvement Plan. ☆Action 2: Conduct individual training on communications with NRC. ☆Action 3: Complete USAR Project review of commitments.	Licensing Manager Licensing Manager Licensing Manager
Operations-Related Communications With External Parties	☆Action 1: Follow-up with the government points of contact to monitor the effectiveness of the management practices.	CNS Public Relations Coordinator
On-Site Public Relations	None	N/A

Note - Items indicated with ☆ are additions to Phase 3 Plan scope.

Strategy / Program	Follow-up Actions	Responsibility
Station Capacity and Reliability		
Fuel Cycle Optimization	Action 1: Complete implementation of the SECS program to estimate High-Level nuclear waste costs.	Plant Engineering Manager
	Action 2: Complete internal program to evaluate how best to determine minimum bus-bar costs.	Business Services Manager
	☆Action 3: Complete studies identified in the High-Level Nuclear Waste Strategy.	Plant Engineering Manager
	☆Action 4: Modify the nuclear fuel fabrication contract to purchase a more efficient fuel design.	Senior Engineering Manager
	☆Action 5: Evaluate feasibility and renegotiate nuclear fuel fabrication contract.	Senior Engineering Manager
Capacity Increases	None	N/A

Note - Items indicated with ☆ are additions to Phase 3 Plan scope.

Strategy / Program	Follow-up Actions	Responsibility
Plant Reliability	Action 1: Forced Outage, Power Reductions, and Power Ascension Barriers actions: o EWR 94-181 (RRMG Field Breaker) o EPR 97-028 (RRMG Brushes) o MP 96-011 (MSIV Packing Modifications) - MWR 96-1777 (86A) - MWR 96-1778 (86B) - MWR 96-1779 (86D) o NAIT ENG P96-0015 (M.P. 7.2.70 - Packing Program) o System Engineer RE17 Action Plan for DEH/Voltage Reg Issues o HPCI Turbine Control System RE17 Action Items - DEPT 2-08507 (e[illegible]se O/S linkages) - P96-0003 (Open Region IV Inspection items) - CAQ 96-1097 (HPCI 150# test) o PIR 2-02853 (RE17 MM for CW discharge valve alignment check) o MWR 96-1202 (RE17 Main Condenser eddy current testing) o BOP MOV RE17 Corrective Actions - MWR 95-1083 - MWR 95-3646 - MWR 95-1084 - MWR 95-3645 - MWR 95-3887 - MWR 95-4513 - MWR 94-2021 - MWR 95-3642 - MWR 94-2022 - MWR 95-3643 - MWR 95-3641 - MWR 95-3644 - MWR 95-1831 - MWR 96-0839 - MWR 95-1316 - MWR 95-3892 - MWR 95-3955 - MWR 95-3915 - MWR 95-3727	Plant Engineering Manager

Note - Items indicated with ☆ are additions to Phase 3 Plan scope.

Strategy / Program	Follow-up Actions	Responsibility
Plant Reliability	Action 2: Equipment Aging/Obsolescence actions: - EPR 97-029 (Evaluate programmatic enhancements for capacitor health) - EPR 97-030 (Establish cable condition monitoring program. - MP 92-155 (RE17 F and G Sump pump upgrade. - MP 93-003 (RE17 LOGT and TGF mod - Salem Event) - MP 94-388 (RE18 CW Discharge Valve mod) - MP MWR 96-2453 (RE17 CS-MOV-M05B Replace - RCE 97-010)	Plant Engineering Manager
	Action 3: Non-technical specifications surveillance testing actions: - DEPTD 2-08794 (High Risk Surveillance Procedures) - 15.TG.302, Main Turbine Trip Functional Test - 15.DEH.601, DEH Accumulator Nitrogen Pressure Check - 15.RF.103, RFPT Thrust Bearing Wear and Failure Alarm Test - DEPTD 2-08795 (Medium Risk Surveillance Procedures) - 15.TG.304, Main Turbine DEH Functional Test - 15.RF.101, RFPT Stop Valve Test - 15.RF.102, RFPT Backup Oil Pumps Test - 15.1ARI.301, ARI Logic Test with Reactor in Run - 15.2ARI.301, ARI Logic Test with Reactor in Run - 6.RHR.305, RHR Reactor Vessel Shroud Level Calibration	Plant Engineering Manager

Note - Items indicated with ☆ are additions to Phase 3 Plan scope.

Strategy / Program	Follow-up Actions	Responsibility
Maintenance Improvement	☆Action 1: Analyze (preventive maintenance optimization & system maintenance analysis) additional eighteen systems (Life Cycle Maintenance Program) - Diesel Generators - Rad Waste - Standby Gas Treatment - Buildings - Circulating Water - Primary Containment/Primary Containment Isolation System - Augmented Off Gas/Off Gas - Control Rod Drive - Fuel Pool Cooling and Cleanup - Main Steam - Reactor Water Cleanup - Standby Liquid Control - Condensate Filter Demineralizers - Extraction Steam - Turbine Generator Lubricating Oil - Turbine Generator - Air Removal - Condensate Make-up	Maintenance Manager
Power Up-Rate	None	N/A

Note - Items indicated with ☆ are additions to Phase 3 Plan scope.