ATTACHMENT 1

NGG STRATEGIC REFORM INITIATIVES

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I. INTRODUCTION

The purpose of this document is to establish Commonwealth Edison Company's (ComEd) strategic priorities, or Strategic Reform Initiatives, for the Nuclear Generation Group (NGG). These initiatives provide the managment priorities and processes for the NGG executive team in its leadership of ComEd's nuclear program. In particular, these initiatives focus on four overarching goals: Operational and Technical Excellence; Material Condition; Organizational Alignment and Workforce Engagement; and Effective Leadership and Management.

- **Operational and Technical Excellence will be our primary driver**. It will be demonstrated by the highest standards of professionalism in our work products, services, and interactions with internal and external contacts. Outstanding human performance will be achieved through procedure adherence, training, and managerial coaching. An effective management system will be implemented to ensure that operational and technical excellence is achieved and sustained. This will translate into higher levels of safety performance while excelling in our business objectives to obtain high production levels at competitive costs.

- **The quality of Material Condition will be an absolute**. Excellent material condition will be demonstrated by equipment that operates as expected each time it is needed. This will be accomplished by ensuring that the workforce is highly trained, possesses the necessary resources, and has appropriate procedures and instructions. With attention to safety and risk minimization, the use of on-line maintenance will be increased to be sure that needed maintenance is performed. Work backlogs and operator workarounds will be reduced. An integrated site schedule will be used to control all site work. Project plans to improve and sustain material condition will be developed and resources applied.

- **Organizational Alignment and Workforce Engagement will be a priority**. A direction will be developed by Senior Management and will be widely and consistently communicated to the workforce. The direction will be clearly articulated and will be accompanied by a definition of roles and responsibilities that clearly identifies lines of authority. Workers will continue to utilize a team-based approach to resolving problems. This team approach will be aligned by management to ensure that the proper issues are being addressed. Additionally, the structures at the sites and corporate NGG will be reviewed and optimized to assure clear accountability and roles.

- **Effective Leadership and Management will be developed and reinforced**. Key site and corporate management positions will be evaluated, and benchstrength enhanced. Management development will be enhanced through improved compensation, succession planning, professional training, and performance management systems. The effectiveness of our managers will be enhanced through stronger management processes, including a refined business planning process, performance monitoring, strengthened accountability, and integrated and aligned resource deployment.

The NGG Strategic Reform Initiatives are comprehensive and establish the processes required to achieve success in a nuclear operating environment. They are intended to change the way the NGG conducts business and provide a clear set of overarching goals for the organization. These reforms provide the overall framework for integrating important site-specific actions and improvement initiatives, including the Section 50.54(f) commitments. In addition, the initiatives and ComEd's commitments under Section 50.54(f) encompass the programmatic issues as set forth in INPO's briefings before the ComEd's Board of Directors in March 1996, and September 1997. We will be addressing INPO's issues regarding Zion Operations through the station's restart plan.

II. NGG STRATEGIC REFORM INITIATIVES SUMMARY

Strategic Reform Initiatives	Goals	Responsibility	Complete
NGG-1: Strengthen Performance Monitoring and Management	• Operational and Technical Excellence • Material Condition • Organizational Alignment and Workforce Engagement • Effective Leadership and Management	M. Wallace	11/30/98
NGG-2: Upgrade Operations Department Leadership Role in Ensuring Excellent Plant Operations	• Operational and Technical Excellence • Material Condition	S. Perry	06/30/98
NGG-3: Ensure Excellence in Plant Material Condition	• Operational and Technical Excellence • Material Condition	G. Stanley	09/30/98
NGG-4: Align and Integrate Resources	• Material Condition • Organizational Alignment and Workforce Engagement • Effective Leadership and Management	M. Wallace	7/30/98
NGG-5: Assess Organizational Accountability and Revise Structure	• Organizational Alignment and Workforce Engagement • Effective Leadership and Management	O. Kingsley	08/31/98
NGG-6: Refine Business Management Processes	• Operational and Technical Excellence • Organizational Alignment and Workforce Engagement • Effective Leadership and Management	A. Lynch	02/28/99
NGG 7: Strengthen Regulatory Compliance Processes	• Operational and Technical Excellence • Material Condition	T. Kovach	09/30/98

Strategic Reform Initiatives	Goals	Responsibility	Completed
NGG-8: Prioritize and Enhance Execution of Engineering Improvement	• Operational and Technical Excellence • Material Condition	J. Hosmer	10/30/98
NGG-9: Enhance Management Development	• Operational and Technical Excellence • Material Condition • Organizational Alignment and Workforce Engagement • Effective Leadership and Management	S. Perry	11/15/98
NGG-10: Enhance Communications	• Operational and Technical Excellence • Organizational Alignment and Workforce Engagement	G. Stanley	06/30/98
NGG-11: Enhance Employee Alignment and Involvement	• Organizational Alignment and Workforce Engagement	M. Wallace	10/30/98
NGG-12: Reinforce Training Programs for Improved Performance	• Operational and Technical Excellence • Material Condition • Organizational Alignment and Workforce Engagement	D. Sager	09/30/98
NGG-13: Strengthen Nuclear Safety Oversight	• Operational and Technical Excellence • Material Condition • Organizational Alignment and Workforce Engagement	L. Waldinger	06/30/98

III. NGG STRATEGIC REFORM INITIATIVES

The following pages detail the Strategic Reform Initiatives and include the Summary Work Plans.

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-1: Strengthen Performance Monitoring and Management

Goals Supported:

Operational and Technical Excellence
Material Condition
Organizational Alignment and Workforce Engagement
Effective Leadership and Management

Initiative Description:

The CNO and Senior Management will strengthen accountability and performance management through management review meetings, as listed below, and the use of a broadened set of NGG-wide performance indicators. The meetings will include not only a review of performance compared to indicators, but also a review of events, implementation of key plans, programs and initiatives, and development of future actions to meet NGG-wide goals.

Review meetings will be established as follows:

- Monthly Management Review Meetings at each site.
- Monthly NGG overall Performance Meetings.
- Quarterly Business Plan Reviews with all sites and key support organizations.

The performance indicators will address safety, technical performance, and other areas of overall management performance, and will measure results achieved at both the NGG and site levels. The indicators will be defined and used consistently at all sites, and performance criteria will be established and updated as part of the business planning process. These indicators will drive additional, detailed measures and processes within individual departments.

Expected Results:

Management regularly holds individuals accountable for results. The performance measures will be clearly defined and consistent, provide clarity of focus, and emphasize results. Ultimately, the organization will apply results as the only valid measure of performance.

Responsible Executive:

M. Wallace

Completion Date:
11/30/98

SUMMARY WORK PLAN

NGG-1: Strengthen Performance Monitoring and Management

Action Step	Responsibility	Completion	Description
1.	Sager	04/30/98	Standard NGG Performance Indicators established to manage actions that drive improvements in Operational and Technical Excellence, Material Condition, Organizational Alignment and Workforce Engagement, and Effective Leadership and Management.
2.	Wallace	05/30/98	New performance indicators integrated with current Section 50.54(f) performance indicators.
3.	Stanley/Perry	07/30/98	Standard Site Specific Indicators aligned to NGG indicators, developed and approved.
4.	Stanley/Perry	08/30/98	New standard indicators in use to manage performance and accountability at NGG meetings.
5.	Wallace	08/30/98	NGG procedures updated that govern indicator process and conduct of management meetings.
6.	Wallace	11/30/98	Conduct an effectiveness review to ensure that measurable results have been achieved.

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-2: Upgrade Operations Department Leadership Role in Ensuring Excellent Plant Operations

Goals Supported:

Operational and Technical Excellence
Material Condition

Initiative Description:

Establish the Operations Department as the key driver in ensuring all plant systems and equipment operate in a safe and effective manner.

The Operations Department will set the standard for excellent human performance and conservative decision making.

Expected Results:

The Operations Department will take the lead in ensuring a clear focus on safe and effective operations and the willingness to aggressively address operability issues.

Responsible Executive:

S. Perry

Completion Date:

06/30/98

SUMMARY WORK PLAN

NGG-2: Upgrade Operations Department Leadership Role in Ensuring Excellent Plant Operations

Action Step	Responsibility	Completion	Description
1.	Perry/Stanley	On-going	Senior Site Management will ensure that the Operations Department is established as the owner of plant systems and equipment and sets the standard for excellent human performance.
2.	Perry/Stanley	06/30/98	Enhance conservative decision making philosophy, specifically: • Senior Site Management, Operations, Plant Operations Review Committee, and Safety Review Boards will be well versed in the philosophy. • Operations Peer Group periodically assesses implementation of this philosophy.
3.	Waldinger	06/30/98	Q&SA will perform routine effectiveness reviews.

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-3: Ensure Excellence in Plant Material Condition

Goals Supported:

Operational and Technical Excellence
Material Condition

Initiative Description:

Ensure excellence in plant material condition through improved maintenance support. This initiative will ensure the necessary support structure, policies, procedures, and plans are available to achieve highly reliable plant equipment throughout the NGG. 1-year and 3-year Material Condition Improvement plans will be developed. Governance policies will define the role of on-line preventative and reliability-centered maintenance, as well as ensure effective compliance with our maintenance rule commitments.

Expected Results:

The overriding result will be that all stations will have excellent material condition and a clear definition of the desired application of NGG maintenance resources. Expectations and performance measures will be enhanced and used to monitor improvements in material condition.

Responsible Executive:

G. Stanley

Completion Date:

09/30/98

SUMMARY WORK PLAN

NGG-3: Ensure Excellence In Plant Material Condition

Action Step	Responsibility	Completion	Description
1.	Stanley/Perry/Plant Managers	03/31/98	Review the existing site operational plans to develop an NGG-wide, 1-year Material Condition Improvement Plan. After consolidating this information, ensure that all 1998 activities are appropriately resourced.
2.	Eenigenburg/Plant Managers	03/31/98	Complete the deployment of the revised work control planning process at all six sites.
3.	Eenigenburg/Brons/Subalusky	Prior to Restart	Complete the deployment of the revised 5-week work scheduling at LaSalle and Zion. (Process was deployed at the other four sites in 1997.)
4.	Javorik	04/30/98	Review the use of existing Maintenance Rule indicators and ensure consistent application throughout NGG. Review material condition performance measures and ensure that they will effectively monitor progress against expectations.
5.	Plant Managers	06/30/98	Implement an on-line maintenance process that is under development, by the peer groups.
6.	Stanley/Perry/Plant Managers	09/30/98	Develop a 3-year Material Condition Plan to ensure that future O&M and capital budgets support the planned improvements, based on plant inputs.
7.	Broccolo	Ongoing	Conduct an annual effectiveness review to ensure that measurable results have been achieved.

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-4: Align and Integrate Resources

Goals Supported:

Material Condition
Organizational Alignment and Workforce Engagement
Effective Leadership and Management

Initiative Description:

The NGG will implement management processes to maximize the application of resources; particularly human resources. This requires mechanisms to provide on-going project controls, to ensure that the resources available are orchestrated in a way that achieves highest overall priority results, and to ensure that the resources are applied most productively.

Specific elements include:

- Developing site-wide integrated operation plans (integrated schedules) to ensure that all site programs are effectively supported and that all site resources are most effectively employed. Schedules include contract, site, support and matrixed resources. The operation plan includes all site work, not only maintenance and technical work items, but also training, outage planning, improvement initiatives, and NGG-wide work items as necessary. This plan identifies the work activities that will drive the Business Plan.

- Establishing peer group priorities which emphasize the NGG-wide perspective and support the transfer of best practices among the sites. Peer groups develop common processes and track site implementation and performance results. (Related to actions in NGG-11) Peer group priorities support, and are integrated into, site-wide integrated operation plans.

Expected Results:

The results of these processes will be to provide each site, as well as each support group, with improved, priority-driven plans for accomplishing greater results with applied resources. Projects and programs that are self-perpetuating, poorly coordinated, continuously expanding, or not well-executed will be elevated for site and NGG line management review and correction.

Peer groups will ensure that common policies and procedures are developed to implement simple, efficient, and effective best practices within the NGG.

Responsible Executive:

M. Wallace

Completion Date:

07/30/98

SUMMARY WORK PLAN

NGG-4: Align and Integrate Resources

Action Step	Responsibility	Completion	Description
	Site-Wide Integrated Operational Plan		
1.	Wallace	03/30/98	Establish a common approach to site-wide integrated operational planning.
2.	Site Department Heads	05/30/98	Identify departmental key priorities and resource intensive activities.
3.	Site Vice President	07/30/98	Input departmental schedule priorities into a site-wide annual plan, based on 1998 planned activities.
	Establish Peer Group Priorities		
1.	Karr	03/30/98	Produce an inventory of peer group initiatives, including estimated resource requirement, and align with NGG goals.
2.	Stanley/Perry	04/30/98	Identify peer group initiatives which will be implemented, deferred, or canceled.
3.	Site Vice Presidents	07/30/98	Incorporate initiatives into Site Wide Integrated Operational Plans.

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-5: Assess Organizational Accountability and Revise Structure

Goals Supported:

Organizational Alignment and Workforce Engagement
Effective Leadership and Management

Initiative Description:

The NGG will perform a formal assessment of roles and responsibilities, and the corresponding organizational structure. The assessment will address reporting relationships and the clarity of the line organization. Consistency of roles, responsibilities, and organizational structure among sites and in the corporate support services provided to the sites will also be addressed. The organizational design will address the differences in, and separateness of, the roles of line, support, and oversight or control functions.

Expected Results:

The overall result will be an NGG organization that empowers the line organization, ensures adequate governance, and establishes clear oversight. Organizational differences that impede learning and economies of scale will be eliminated. Clearly defined accountabilities and responsibilities, along with corresponding results measures, will enable a goal-oriented organization, in both structure and process.

Responsible Executive:

O. Kingsley

Completion Date:

08/31/98

SUMMARY WORK PLAN

NGG-5: Assess Organizational Accountability and Revise Structure

Action Step	Responsibility	Completion	Description
1.	Kingsley	01/31/98	Establish a small, multi-disciplined transition team to evaluate existing NGG roles and responsibilities, and corresponding organizational structure.
2.	Transition Team	08/31/98	Develop revised organization structure based upon: • aligning the structure with the overall direction and priorities of NGG; • clearly defining responsibilities and accountabilities; and • ensuring accountabilities are aligned with planning and performance measurement processes.
3.	Kingsley	08/31/98	Initiate implementation of the revised organization.
4.	Kingsley	Ongoing	Perform an effectiveness review.

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-6: Refine Business Management Processes

Goals Supported:

Operational and Technical Excellence
Organizational Alignment and Workforce Engagement
Effective Leadership and Management

Initiative Description:

Review and refine the business management processes that will permit the management organization to conduct an orderly, overall planning process, beginning with high-level goals and culminating with the budget. The processes will engage each area and level of the organization on issues and decisions appropriate to its role. The resulting processes will emphasize resources and results, priorities based upon the overarching objectives, constructive questioning and dialogue, and goals that can be cascaded from strategic planning, to business planning, to budgeting.

Expected Results:

The result will be alignment of the organization on an action program that is resource loaded, that represents balance among conflicting priorities, and that has buy-in among the organizational groups. A second result when a top-down/bottom-up planning and budgeting process is fully implemented will be much greater communications between organization levels than may now be the case.

Responsible Executive:

A. Lynch

Completion Date:

02/28/99

SUMMARY WORK PLAN

NGG-6: Develop Business Management Processes

Action Step	Responsibility	Completion	Description
1.	Lynch	02/15/98	Prepare and validate a detailed plan for the initiative.
2.	Lynch	04/15/98	Design the target business plan structure and process to include consistently-structured components for each site. These will address: • Generation; • Cost; and • Safety performance. In addition, the plan will include subsidiary plans such as: • One to Two-Year Specific Initiative Plans; • Training Plan; • Work Force Plan; • Communication Plan
3.	Stanley/Perry/Lynch	06/15/98	Review recommended plan with NGG Senior Management and affirm process.
4.	Harlow	07/31/98	Document new process and integrate process with planning and budgeting needs.
5.	Stanley/Perry/Lynch	10/31/98	Develop 1999 Business Plan.
6.	Kingsley	02/28/99	Conduct Effectiveness Review.

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-7: Strengthen Regulatory Compliance Processes

Goals Supported:

Operational and Technical Excellence
Material Condition

Initiative Description:

NGG will ensure that key regulatory compliance processes are clearly defined, appropriately managed, and successfully executed. The initiative will be NGG-wide, with clear participation and ownership at each site and corporate. The purpose will be to ensure consistent emphasis not only on resolving regulatory issues but also on avoiding the situations that precipitate them.

Expected Results:

Clearly defined regulatory compliance processes and clear accountability for successful execution.

Responsible Executive:

T. Kovach

Completion Date:

09/30/98

SUMMARY WORK PLAN

NGG-7: Strengthen Regulatory Compliance Processes

Action Step	Responsibility	Completion	Description
	Define Compliance Processes and Accountability		
1.	Farrar	06/30/98	Review key internal regulatory policies, practices, and processes, and based on the review, revise as appropriate. Establish a process to identify and address emerging and strategic regulatory compliance issues.
	Improve Personnel Effectiveness in Regulatory Compliance		
2.	Farrar	06/30/98	Evaluate existing regulatory information and knowledge management capabilities of the site and corporate regulatory organizations, and modify as appropriate. Review training and qualifications standards for corporate Licensing and site Regulatory Assurance personnel, and revise as appropriate. Review regulatory compliance training for NGG personnel and revise as appropriate.
3.	Lezon	09/30/98	Conduct an effectiveness review to ensure that measurable results have been achieved

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-8: Prioritize and Enhance Execution of Engineering Improvements

Goals Supported:

Operational and Technical Excellence
Material Condition

Initiative Description:

Review and enhance the existing management and direction to assure implementation of critical improvement activities. Evaluate Engineering operational plans for corporate and sites, to ensure effective implementation and support of short and long-term needs, while simultaneously being responsive to day-to-day issues.

Expected Results:

The result will be a clear definition of roles, responsibilities and the effective application of engineering resources. Annual corporate Engineering and site business plans will be the drivers for engineering programs and initiatives.

Overall, the engineer groups will be effective and efficient in meeting the goals and priorities of the NGG.

Responsible Executive:

J. Hosmer

Completion Date:

10/30/98

SUMMARY WORK PLAN

NGG-8: Prioritize and Enhance Execution of Engineering Improvements

Action Step	Responsibility	Completion	Description
1.	Hosmer/Site Engineering Managers	03/30/98	Define the key short- and long-term Engineering priorities and management challenges for the NGG overall and for each site.
2.	Hosmer/Site Engineering Managers	05/30/98	Review the existing 1998 Engineering plans to identify priorities not adequately addressed, responsibilities not clearly define, and management issues which require resolution.
3.	Hosmer	07/30/98	Develop and implement actions to address the identified priorities not adequately addressed, responsibilities not clearly defined, and management issues requiring resolution.
	Hosmer	10/30/98	Conduct an effectiveness review to ensure that measurable results have been achieved.

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-9: Enhance Management Development

Goals Supported:

Operational and Technical Excellence
Material Condition
Organizational Alignment and Workforce Engagement
Effective Leadership and Management

Initiative Description:

Ensure that key site and corporate management positions are filled with capable individuals. Additionally, ensure that capable managers are available to back up these positions. In the longer term, improve management development processes to ensure that capable managers are developed from within the organization.

Expected Results:

A result-driven management organization with clear lines of accountability, succession, and development. Key site positions are filled with capable managers and individuals are routinely developed to fill future needs.

Responsible Executive:

S. Perry

Completion Date:

11/15/98

SUMMARY WORK PLAN

NGG-9: Enhance Management Development

Action Step	Responsibility	Completion	Description
	Short Term		
1.	Perry/Stanley	02/27/98	Evaluate needs in key site and corporate management positions.
2.	Perry/Stanley	03/31/98	Review existing succession plans for key site management positions and ensure appropriate developmental plans are in place to fill short-term and future needs.
	Long-Term		
3.	Perry	11/15/98	Review and strengthen the processes for personnel development including: • compensation system; • succession planning; and • performance management process. • selection process

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-10: Enhance Communications

Goals Supported:

Operational and Technical Excellence
Organizational Alignment and Workforce Engagement

Initiative Description:

Managers will conduct departmental monthly meetings with employees. These meetings will focus on discussion of how the department is contributing to the achievement of NGG goals, any performance gaps that exist, and give feedback to department personnel on how to better achieve expectations. This will also be a forum for employees and management to better understand needs to accomplish departmental objectives.

Expected Results:

Establish face-to-face communication as the primary expected and perceived means of communication within the NGG organization. Line managers and first-line supervisors understand and accept their role as the primary conduit for two-way communication. Communications will be ongoing to ensure all employees will have a common baseline understanding of NGG's direction and goals, including their role in achieving them.

Responsible Executive:

G. Stanley

Completion Date:

06/30/98

SUMMARY WORK PLAN

NGG-10: Enhance Communications

Action Step	Responsibility	Completion	Description
1.	Brown	01/15/98	Produce a communications package that articulates NGG direction following the January NGG Executive offsite meeting.
2.	Wallace/Perry/Stanley	03/31/98	Managers will reinforce communications messages during routine departmental meetings.
3.	Brown	03/31/98	An annual site communication plan will be developed to outline the major communications opportunities and themes. Site communicators will assist in identifying other opportunities to reach groups of employees and assist with developing communications materials.
4.	Brown	06/30/98	Develop a method to evaluate the effectiveness of managerial communication actions.
5.	Wallace/Perry/Stanley	Ongoing	Hold managers accountable for communications responsibilities.
6.	Brocollo	Ongoing	Conduct effectiveness review.

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-11: Enhance Employee Alignment and Involvement

Goals Supported:

Organizational Alignment and Workforce Engagement

Initiative Description:

Take steps to ensure that employees receive clear, consistent, information about how to effectively participate in NGG priorities. Ensure that employees' jobs and incentives are aligned to the overall direction, and that progress is recognized. Align team initiatives to NGG priorities.

Expected Results:

Employees know what NGG's goals and priorities are, and understand their own individual contribution. Employees are actively engaged in work that improves NGG performance, and are incentivized, evaluated, and recognized for that work. Their work, and work of teams, is aligned to NGG strategic priorities.

Responsible Executive:

M. Wallace

Completion Date:

10/30/98

SUMMARY WORK PLAN

NGG-11: Enhance Employee Alignment and Involvement

Action Step	Responsibility	Completion	Description
1.	Stanley/Perry/Sager	04/30/98	Update and review the inventory of Team Based Initiatives and compare them to NGG's priorities and goals. Identify those activities to continue, modify or delete.
2.	Stanley/Perry/Sager	05/30/98	For outcomes of team based initiatives, establish the process and expectations for line managers support of implementation.
3.	Stanley/Perry/Brown	07/30/98	Develop an integrated approach to ensure that broad-based employee involvement is obtained on key NGG initiative areas. • job descriptions, performance objectives, and performance evaluations support priorities and goals; and • incentives and recognition events support priorities and goals.
4.	Stanley/Perry/Brown	07/30/98	Identify barriers to worker engagement by assessing management effectiveness in labor relations and labor contract issues, and identify actions based on assessment.
5.	Wallace/Brown	10/30/98	Conduct an effectiveness review.

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-12: Reinforce Training Programs for Improved Performance

Goals Supported:

Operational and Technical Excellence
Organizational Alignment and Workforce Engagement
Material Condition

Initiative Description:

Review the present state of training programs throughout NGG, including: current issues; content, duplication, and scope of courses; involvement by line management; and value added to the workforce. Identify variations in programs within the NGG and assess the need/desirability for the differences. Wherever feasible, focus resources by consolidating and upgrading programs to share successes from site-to-site. Develop a plan for upgrading training programs and initiate implementation to improve operations. Establish common annual site training schedules.

Expected Results:

Integrated programs established where feasible. Linkage between employee training and on-the-job success reinforced, and training valued and viewed as a key to improvement. Standard training program schedules implemented at all sites.

Responsible Executive:

D. Sager

Completion Date:

09/30/98

SUMMARY WORK PLAN

NGG-12: Reinforce Training Programs for Improved Performance

Action Step	Responsibility	Completion	Description
1.	Carlin	02/15/98	Complete inventory of all current and proposed NGG training courses.
2.	Carlin/Plant Managers	03/15/98	Identify valid NGG training needs.
3.	Carlin	05/30/98	Develop a plan for upgrading training programs where appropriate to incorporate best practices, achieve advantages of scale, and eliminate unnecessary training.
4.	Carlin/Plant Managers	06/30/98	Initiate actions for upgrades to the training program to reflect line management ownership and involvement.
5.	Plant Managers	08/30/98	Establish common annual site training schedules.
6.	Site Vice Presidents	09/30/98	Assess involvement of line management in the training program and effectiveness of training in the workforce through review of plant performance indicators.

STRATEGIC REFORM INITIATIVE

Initiative Title:

NGG-13: Strengthen Nuclear Safety Oversight

Goals Supported:

Operational and Technical Excellence
Material Condition
Organizational Alignment and Workforce Engagement

Initiative Description:

Strengthen the Nuclear Safety Oversight function to provide integrated and comprehensive oversight of NGG Operations. Internal NGG programs and processes will be evaluated to ensure that adequate management barriers exist and that the highest standards are achieved and maintained.

Expected Results:

Provide the requisite level of assurance that management systems are in place and the appropriate feedback mechanisms are working. This action will ensure improvements are captured and sustained, providing a higher level of confidence that cyclic performance is precluded.

Responsible Executive:

L. Waldinger

Completion Date:

06/30/98

SUMMARY WORK PLAN

NGG-13: Strengthen Nuclear Safety Oversight

Action Step	Responsibility	Completion	Description
1.	Waldinger	03/31/98	Review and determine appropriate realignment of the site and corporate quality organizations to ensure appropriate integration of NGG Quality functions. (coordinated with NGG-5)
2.	Waldinger	06/30/98	Implement transition plans and incorporate changes as appropriate.
3.	Waldinger	03/31/98	Evaluate the effectiveness of implementation of the NGG common corrective action process.
4.	Waldinger	03/31/98	Evaluate the effectiveness of implementation of the NGG common OPEX program.
5.	Stanley/Perry/Waldinger	03/15/98	Review the structure and implementation of the Plant Operations Review Committee Process at each site, modify as determined necessary.
6.	Waldinger	03/31/98	Develop and ensure implementation of a common NGG Self-Assessment Program.
7.	Waldinger	02/15/98	Review the merits of combining the Off-site Review Group and Safety Review Board functions.
8.	Waldinger	03/31/98	Evaluate the Off-site Review function, its structure, modify as appropriate.
9.	Waldinger	03/31/98	Review and revise, as appropriate, Safety Review Board role and its charter.
10.	Waldinger	03/31/98	Review the composition and structure, of the Safety Review Board, modify as appropriate.
11.	Board Committee on Nuclear Governance	03/31/98	Review current Nuclear Operation Committee of the Board of Directors. Revise and modify as appropriate.

IV. RESULTS AND BENEFITS

Commonwealth Edison Company (ComEd) and the Nuclear Generation Group (NGG) are committed to achieving nuclear excellence and to vigorously implementing the NGG Strategic Reform Initiatives. We fully understand that no specific initiative can accomplish nuclear excellence, because the true vehicle is an organization that is fully aligned in direction, purpose, priorities, and values. This, rather than specific technical issues, is the common thrust of the initiatives and the primary result is expected to be an organization that reflects those characteristics.

In addition, we expect the following benefits to result from implementation of the NGG Strategic Reform Initiatives:

- operating and maintenance environments in which operability, material condition, and nuclear safety are predominant and of the highest priority;
- an organizational structure in which roles and responsibilities are clearly defined, the line organization is paramount, and support/oversight responsibilities are fully articulated;
- an aligned and engaged workforce to whom clearly defined goals and directions are communicated;
- a management organization that is empowered, held accountable for success, well-trained and equipped, appropriately rewarded, and perceived as a desirable place in which to work and interact;
- an oversight organization with a clear charter and responsibility;
- management processes that ensure resources are applied on the basis of clear goals and priorities; and
- an organization that expects and achieves excellence.

We recognize that these results will not occur without substantial effort on the part of the organization to embrace change and to put aside many of the ways of the past, even when some of those ways may be deeply ingrained. To reach the necessary future state, we must quickly coalesce into a team, including both management and the work force. This is the challenge for the NGG and will be a key result of our successful efforts.

ATTACHMENT 2

Comparison of INPO Programmatic Issues to Related ComEd Improvement Efforts

NGG Initiatives	INPO Programmatic Issues	Related ComEd 50.54 (f) Responses and Restart Plans
NGG-1: Strengthen Performance Monitoring and Management	Overall performance does not meet industry standards	4.7 Performance Measures, criteria and actions if Criteria are not met
NGG-4: Align and Integrate Resources NGG-6: Refine Business Management Processes NGG-10: Enhance Communications NGG-11: Enhance Employee Alignment and Involvement	Setting Direction: Initiatives and day-to-day actions need better integration, alignment and prioritization	3.0 Resources and Budgeting
NGG-2: Upgrade Operations Department Leadership Role in Ensuring Excellent Plant Operations NGG-5: Assess Organizational Accountability and Revise Structure NGG-9: Enhance Management Development NGG-10: Enhance Communications NGG-11: Enhance Employee Alignment and Involvement NGG-12: Reinforce Training Programs for Improved Performance NGG-13: Strengthen Nuclear Safety Oversight	ComEd Leadership and Culture are not uniformly promoting high standards. Accountability Engaging the workforce (management and bargaining unit) Management Turnover	2.1 Nuclear Program Management Team 2.2 Board of Directors Actions 4.4 Leadership / Management Development, Training, Engaging the Workforce

NGG Initiatives	INPO Programmatic Issues	Related ComEd 50.54 (f) Responses and Restart Plans
NGG-3: Ensure Excellence in Plant Material Condition NGG-8: Prioritize and Enhance Execution of Engineering Improvements	Equipment Reliability is low and long-standing materiel condition issues exist. Ability to get work done requires improvement	4.3 Engineering Support 4.4 Leadership / Management Development, Training, Engaging the Workforce 4.5 Corrective Action program and response to lessons learned.
NGG-2: Upgrade Operations Department Leadership Role in Ensuring Excellent Plant Operations NGG-12: Reinforce Training Programs for Improved Performance	There are weaknesses in Zion's safety culture specifically in the control room.	Zion Restart Plan
NGG-5: Assess Organizational Accountability and Revise Structure	Zion Operations management and oversight is weak.	4.4 Leadership / Management Development, Training, Engaging the Workforce

ATTACHMENT 3

Dresden Station
Summary of Key Improvement Initiatives and Results

Summary

- Operational Performance has improved throughout the year. However, there continues to be a high number of Human Performance Licensee Event Reports which requires continued management attention.

- Material Condition has improved, but equipment problems on occasion still challenge operators.

- Engineering is challenged by quality issues and improving design basis records.

- Steve Perry was recently promoted to Vice President of BWRs. The continuity of the Dresden Management direction and team is maintained with the promotion of Mr. J. Michael Heffley to Site Vice President.

Self-Assessment

- Dresden has taken action to improve the quality and timeliness of corrective actions.
    - Dresden is using the new Corrective Action Program currently in use throughout the Nuclear Generation Group (NGG).
    - There has been a strong focus at the site on problem identification, strong root cause analyses, and line management responsibility for timely and effective corrective actions.
    - In May 1997, Dresden Station implemented an Apparent Cause Evaluation (ACE) process which provides more detailed information for less significant events such that multiple levels of trending are available to enhance the ability to predict future events and improve the accuracy of Common Cause Analyses. In return, personnel resources are made available and can be focused on performing more thorough root cause investigations for more significant events.

- The Station Self-Assessment Program was established at Dresden in 1996, utilizing INPO and NRC guidelines, as well as information obtained through benchmarking of NRC SALP 1 plants. The program provides a critical and detailed evaluation of specific focus areas within established programs and processes. As part of the process, continuous feedback is provided to the Site Vice President and appropriate line management concerning self-assessment results.

- The Self-Assessment Program also requires management to conduct periodic reviews to evaluate overall performance in each line organization, identify areas for improvement, and measure performance against established standards.

- During 1997, there were 58 self-assessments completed, identifying more than 230 weaknesses. In accordance with program requirements, each identified weakness has associated corrective actions established which are tracked to completion through the Nuclear Tracking System (NTS). The Dresden Station Self-Assessment Program is being evaluated as a model for the NGG common self-assessment process. The common procedure will be implemented throughout the NGG by March 31, 1998.

- Results of these Self-Assessment and Corrective Actions Improvement efforts include:

  - A reduction in the number of repeat events from 127 in 1996, to 11 in 1997, through the end of November.
  - The number of significant events (those items significant enough to warrant a root cause analysis) decreased from 289 in 1996, to 100 in 1997, through the end of November.
  - The corrective action item backlog was reduced from 631 items to 406 items during January through November 1997.
  - There have been no overdue corrective action items since April 1997.
  - These improvements were achieved despite the fact that Station personnel prepared 7860 Problem Identification Forms from January through November 1997, up from 6771 for the full year in 1996, indicating continued focus and willingness to identify problems.

Operational Performance

- Following lengthy shutdowns in 1996, Dresden Units 2 and 3 achieved a sustained period of dual unit operation in 1997.

  - On March 8, 1997, Unit 2 exceeded its previous record of 190 days of continuous operation. When the plant was shutdown on April 10, 1997, Unit 2 had set a new record of 223 consecutive days without a shutdown.
  - Following an 83-day refueling outage, Unit 3 operated for 133 days when it was manually shutdown for a forced outage to repair a cracked weld on a recirculation system flow element sensing line that was unisolable.

- Since establishing a 90% Unit Capability Factor goal in July, Unit 2 has operated at 92.4% and Unit 3 at 93.2%; this reflects the large number of material condition issues that have been corrected at the site.

- In addition to effectively dealing with a large number of material condition issues, there has been a corresponding improvement in performance by the Operations Department. We recognize that some operational performance problems were experienced in late June and August of 1997. However, responsive action was taken and the improving trend noted during 1996, and early 1997, has resumed. Performance indicators in this area have shown continued improvement as follows:

    - Out-of-service errors have been reduced from 16 in 1996, to 3 in 1997 (the goal is ≤ 5 per year).
    - Operator workarounds have been reduced from over 70 at the end of 1994, to 34 as of the end of November 1997 (the 1997 goal is ≤ 35).
    - Contaminated plant area has been reduced to 7.2% as of the end of November 1997 (the goal is $\leq 8.1\%$).
    - Collective Radiation Exposure -- Exposure for 1997 is at 224.45 rem (average per unit) as of December 30, 1997 (Dresden target is ≤ 245 rem per unit for the year).
    - Safety System Performance -- Dresden has achieved a safety system performance level of .0085 as of the end of November 1997 (the Dresden target is ≤ 0.02). This performance reflects the improved material condition of the station and improved ability to plan and implement online maintenance.
    - Industrial Safety Accident Rate (ISAR) -- Dresden has continued to reduce the number and frequency of industrial safety accidents at the station, resulting in an ISAR of 0.11 for 1997. This represents a continuing improving trend: in 1996, Dresden's ISAR rate was 0.9, down from 1.0 in 1995, and an average of greater than 2.0 during 1990 through 1994.

- On December 23, 1997, an automatic scram occurred on Unit 2 during the performance of Dresden Instrument Surveillance (DIS) 0500-01, Reactor Vessel High Pressure Scram Pressure Switch Calibration. The reactor scrammed when LPRM 2D-24-41 spiked high, causing APRM 2 to spike high, causing a RPS Channel A half scram coincident with a RPS Channel B half scram due to testing. Unit 2 is currently on-line following this 98-hour forced outage.

- Good performance and strong management support of a conservative operating philosophy have been evident at the site. For example:

    - Substantial improvement in plant material condition has resulted in a reduced number of challenges to the operators and longer periods of plant operation.
    - Strong emphasis has been placed on planning, communications, and procedure adherence in the Operations area.
    - Management has placed emphasis on high standards, attention to detail, and low tolerance for operator workarounds.

Human Performance Improvement and Other Results

- Despite overall improvement in human performance, Dresden continues to experience a higher than average Human Performance Licensee Event Report (LER) rate. Principal examples of human performance LERs include personnel error and procedure compliance issues.

- In addition to numerical performance measures in the functional areas summarized above, it should be noted that Dresden has succeeded in resolving a number of significant historical performance problems, including:

    - Achieving sustained improvement in operator performance and conservative decision making
    - Dramatically reducing the number of incidents of contaminated material outside the Radiologically Posted Area.
    - Reducing Collective Radiation Exposure that was for many years significantly above industry averages
    - Reducing a historically high Industrial Safety Accident Rate (ISAR).
    - Reducing the number of Out-of-Service events

- Overall, these results indicate that Station personnel are aggressively identifying problems and those problems are, in general, being effectively addressed.

- We continue to ensure that remaining issues, such as design basis issues and human performance weaknesses, are thoroughly addressed.

- Dresden will continue to focus on human performance. Improvements in the 1998, Dresden Business Plan include:

    - Improving Work Procedures (Corporate support team working on this as a pilot here at Dresden),
    - Unit 1 Radiation Protection Performance, and
    - Overtime Control.

Material Condition

- In Maintenance, the focus has been on improving: (1) the quality of work performed in the field; and (2) the ability to complete work in a timely and efficient manner. Both of these goals are designed to ensure that the material condition of the Station will support safe, reliable operations.

- To achieve these goals, Dresden instituted extensive training and qualification requirements in 1996, to improve the skills of the workforce and establish specialized groups of personnel proficient in complex or demanding tasks.

- Additionally, Dresden has implemented the following processes:

    - Establishment of a Fix-It-Now (FIN) team to address emergent work so that work schedules are not impacted by emergent problems.
    - Implementation of a Five Week Scheduling Process to systematically plan, coordinate, and execute work activities and to match the work process used to the difficulty, complexity, and safety significance of the work.

- Results of these efforts include:

    - The level of maintenance rework has been reduced and has averaged less than 3% during August through November 1997, compared to an average of 4.3% during January through July 1997, and significantly higher levels in 1996.
    - The non-outage corrective work request backlog has been reduced from 1622 in January 1997, to 979 as of December 31, 1997. Progress in reducing this backlog improved substantially following introduction of the Five Week Schedule Process.
    - Since July 1997, the percentage of non-outage maintenance activities completed within eight hours of the scheduled completion time has consistently improved, and in November 1997, reached 93%, achieving Dresden's 85% goal for the second month in a row since this measure was established at the Station. We believe this is attributable to implementation of the Five Week Schedule Process and support from both the FIN team and the Engineering Rapid Response Team.

- The improvement in Safety System Performance, and reductions in Material Condition Licensee Events Reports (LERs), Operator Workarounds, and Control Room Deficiencies noted also indicate improving effectiveness of Maintenance support to the Station.

- Nonetheless equipment problems, on occasion still challenge operation of the plant. Dresden will continue to emphasize material condition improvement. The 1998 Dresden Business Plan includes:

    - Unit 2 Feedwater
    - Unit 2 Sulfate Problems
    - Units 2 and 3 Off-gas Systems
    - Fire Protection Material Condition
    - Crib House/Water Intake Building
    - Outage Preparation

Engineering & Design

- A design basis reconstitution initiative is ongoing. The goal of this NGG-wide initiative is to improve the quality of and access to design bases information. The project will continue through 1998-1999. The project will validate the UFSAR, align the UFSAR design basis with Technical Specifications, plant procedures, the physical plant, and recreate any missing essential calculations. Dresden station has met its commitment to the NRC to reconstitute design basis information for six systems by the end of 1997.

- Substantial efforts continue to be focused on improving Engineering performance. These efforts are focused on resolving weaknesses in design, calculation control, retrievability of design information, and timely Engineering support to the plant. For example:

    - Nuclear Engineering procedures were revised to provide improved guidance for review and update of engineering calculations.
    - Calculation indexing and control for Dresden Station has been transitioned from over 16 separate Architect/Engineering firms and ComEd Corporate facilities into one controlled index. The site Design Engineering department now controls the calculation revision process for all calculations, including those performed by contracted companies. The improved calculation processing and indexing tools allow quicker calculation retrieval, better calculation revision control, and uniform referencing tools.
    - A Design Engineering Assurance Group (EAG) was established to provide oversight and guidance for Engineering activities, with the goal of improving the quality of the Dresden Engineering function. This group reviews selected Engineering products such as calculations, safety evaluations, operability assessments, 10 CFR 50.59 reviews, design changes, and other items.
    - An Engineering Rapid Response Team (ERRT) was established in June 1997, to respond promptly to emergent work control and maintenance issues.

- Results of these efforts can be seen in several performance measures. For example:

    - Strong safety system performance and improving Unit Capability Factors;
    - Reduced backlogs of Operator Workarounds and corrective maintenance work requests; and
    - Achievement of goals for numbers of Temporary Modifications (currently at 16 open vice a site goal of $\leq$20 by year end).

- Material condition-related LERs have been reduced from 16 in 1996, to 6 in 1997, through the end of November.

- The results of EAG reviews of Engineering work also indicate improved quality. During March through September 1997, there has been a steady decrease in the percentage of calculations and safety evaluations that the EAG has found to require rework.

- Progress has also been made in reducing Engineering backlogs. The Engineering Request backlog has been reduced from approximately 250 in June 1997, to 136 at the end of November 1997. Strong progress has been made in reducing the number of Engineering Requests overdue. During the first six months of 1997, an average of 27 Engineering Requests were overdue at the end of each month. Since the beginning of July, there has been an average of four overdue at the end of each month.
- With respect to the 1996 NRC Independent Safety Inspection and associated Confirmatory Action Letter:

    - The site continues to provide EAG actions and results to the NRC on a monthly basis.
    - The 1997 Design Basis Initiative (DBI) program commitments are complete.
    - In 1998, the site will complete the last six risk significant system reviews.
    - UFSAR reviews and Design Basis Document (DBD) reviews will continue into 1999.

ATTACHMENT 4

Quad Cities Station
Summary of Key Improvement Initiatives and Results

Summary

- Improvements are necessary in Engineering to address programmatic weaknesses. Engineering Improvement Actions are being implemented to address these programmatic issues.
    - Both Units are currently shutdown and will remain so pending satisfactory resolution of Appendix R concerns.
- There is renewed emphasis on conservative decision-making, and that effort is underway.
- The Quad Cities Corrective Action Program requires additional management attention.
- Operations performance is improving, with low Operator Workarounds, low Out-Of-Service (OOS) Errors, and Human Performance Licensee Event Reports (LERs) continuing to show improvement over past years.
- Material condition has improved as shown by: backlog reductions, improved Safety System performance and dual unit runs of 120 days ending in February 1997, and 96 days ending in September 1997. However, equipment performance remains a focus of the Quad Cities organization to reduce the impact of material condition on plant operation.
- The management team of the site has been strengthened. In view of the complexity of the issues currently facing the Quad Cities Station, and in order to focus additional management attention on the Station, Mr. Edward S. Kraft, Jr., Vice President, has been re-assigned to Quad Cities as the Site Vice President. He will be supported at the Station by Mr. L. William Pearce.

Self-Assessment

- Quad Cities Station has implemented the Nuclear Generation Group (NGG) Corrective Action Program. However, it is providing mixed results.
    - Problems are not consistently corrected, actions taken are not timely, and due date extensions are excessive. Improvements are being made relative to the number of corrective actions, overdue corrective actions, and repeat events.
    - Quad Cities implemented the Root Cause and Apparent Cause Investigation processes. To date, the Station has conducted approximately 1400 Apparent Cause Evaluations and 210 Root Cause Investigations.

- The Station generated 5050 Problem Identification Forms (PIFs) in 1997, as compared to 3500 in 1996.
- Senior Managers are actively engaged in reviewing the results of the Event Screening Committee each morning to gain an overall understanding of the problems being reported and the appropriate assignment to the line organization for resolution.

- Quad Cities Station has prepared a Station policy and procedure regarding self-assessment, based on the INPO guidelines.

  - During 1997, there were 9 functional area self-assessments performed resulting in 44 recommendations to improve functional area performance.

Operational Performance

- Operational performance has been improving at Quad Cities as a result of the elevated priority placed on material condition and human performance. Operators have fewer challenges and compensatory actions during routine and abnormal plant operations, as evidenced by reductions in:

  - Out-of-service errors, from 15 in 1995, to 1 in 1997. This has been a result of a focus on configuration control by the Operations Department.
  - Operator workarounds, from 38 at the end of 1995, to 18 as of the end of November 1997.
  - Contaminated plant area, reduced to 2.7% as of the end of November 1997. This has improved access to plant areas for all employees and specifically allowed operators improved access to monitor equipment performance.

  - Caution Cards in the Control Room, from 93 in the beginning of January 1997, to 22 at the end of November 1997, resulting in fewer distractions to the Operators in the Control Room.

  - Control Room Corrective Action Requests, reduced by 10% in 1997, also resulting in fewer distractions to the Operators in the Control Room.

- However, we recognize that operational performance experienced some problems throughout the year in the area of Event Free Operation, as a result of human performance.

  - The event free clock has been re-set eight times during 1997 for operational errors. Self-assessment has identified the need to place more emphasis on human performance during routine tasks.

Human Performance Improvement and Other Results

- Improvements are noted in resolving a number of significant historical performance problems, including:

    - Reducing incidents of contaminated material outside the Radiologically Posted Area
    - Improving reliability by addressing long-standing material condition problems and reducing backlogs
    - Reducing a historically high Industrial Safety Accident Rate (ISAR.)
    - Reducing the number of OOS events

Procedural Adherence

- With the identification of procedural adherence as a weakness in 1997, the following actions are being taken:

    - Establish the ability to trend PIF data via key word search and publish trend reports. The key word sorting ability allows Quad Cities to identify both administrative and technical issues by functional area. As a result, procedural adherence issues were identified highlighting this as a problem.
    - The Site Senior Training Advisory Council (STAC) is implementing Human Error Reduction Training to improve procedure adherence.
    - Implement a human error behavior observation program. These improvement actions are scheduled for completion by 4/23/98.

- The 1998 Business Plan includes focusing on the site's top ten issues list among other things:

    - Limiting Condition For Operation (LCO) Control
    - Technical Specification Surveillances
    - Operable/Degraded Equipment
    - Procedural Adherence
    - Design Control
    - Event Response Team
    - Engineering/Maintenance Interface

Material Condition

- In Maintenance, the focus has been on improving: (1) the quality of work performed in the field; and (2) the ability to complete work in a timely and efficient manner. Both of these goals are designed to ensure that material condition of the Station will support safe, reliable operations.

- To achieve these goals, Quad Cities instituted extensive training and qualification requirements in 1996 and 1997 to improve the skills of the workforce. Also, it established a Fix It Now (FIN) team to address emergent work and implemented a Five-Week Scheduling Process to systematically plan, coordinate, and execute work activities.

- The following material condition actions are examples of items completed:

    - Removed the Fermanite clamp on the 2A Recirculation Pump and replaced the motor and pump internals
    - Replacement of the Reactor Water Cleanup Unit (RWCU) Heat exchanger and Intergranular Stress Corrosion Cracking (IGSCC) susceptible piping (U-1 96; U-2 95); this mod also increased the flow capacity of the RWCU system from 1.2% of Maximum Feed Water flow to 2% (U-1 96; U-2 95)
    - Removed the obstructions in the Unit 2 Reactor Vessel Bottom Drain
    - Completed Unit 2 HPCI line set and flow control system adjustments to resolve long standing flow oscillations problem
    - Extensive efforts to refurbish Hydraulic Control Units on both units to improve CRD system performance
    - Residual Heat Removal Service Water (RHRSW) pumps – completion of Cutwater modification, impeller modification, mechanical seals and cooling water to RHRSW pumps. As a result, currently no seals are leaking and no pumps are in the alert vibration range.

- As a result of these material condition improvements, Quad Cities achieved a dual-unit run of 120 days ending in February 1997, and another dual-unit run of 96 days ending in September 1997.

    - Additionally, maintenance rework has been reduced from an average of 4.0% in 1996, to 1.7% as of the end of November 1997. Corrective rework has consistently remained below the 4% goal for all of 1997.
    - The non-outage corrective work request backlog has been reduced from a high of approximately 1200 in early 1997, to 847 as of December 29, 1997.
    - Safety System performance has improved from .018 in 1995, to .008 as of the end of November 1997.

- Despite these various improvements, emergent work and workforce skill issues remain and are being addressed as part of the 1998 Business Plan.

Engineering & Design

- Substantial efforts continue to be focused on improving Engineering performance. Details regarding the actions taken to improve Engineering are discussed in a ComEd letter submitted to the NRC on January 2, 1998. These efforts are focused on resolving weaknesses in design control, engineering programs, and engineering support to the plant. They have included:

    - Quality of 10 CFR 50.59 Safety Evaluations

        - To improve the quality of these evaluations, senior engineers in the Engineering Assurance Group (EAG) have been performing formal, in-line third-party reviews of all Section 50.59 evaluations since September 1997.
        - To strengthen the quality of the initial product being submitted to the EAG for review, we developed and conducted a pilot Section 50.59 reviewer's workshop in December 1997.
        - To strengthen the process, we are revising our Section 50.59 evaluation procedure to reflect the more rigorous industry guidance contained in NEI 96-07, "Guidelines for 10 CFR 50.59 Safety Evaluations."
        - The quality of the safety evaluations has shown steady improvement since September. The percentage rework, as identified by the EAG, has decreased from over 60 percent in September to less than 15 percent in December.

    - Engineering Programmatic Issues

        - With the problems identified with the maintenance rule implementation, Appendix R and Appendix G, discussed below, a review of key Engineering Programs is being conducted and will be completed by January 30, 1998.

    - Maintenance Rule

        - A staff of five full-time personnel has been assigned to address the deficiencies that were identified by ComEd and the NRC in recent inspections of program implementation in the areas of scope, performance criteria, historical data reviews, and goal setting.

            - They have completed re-scoping system functions and resetting performance criteria, and have completed historical data reviews for 77 of 122 systems.
            - Completion of historical data reviews of all 122 systems currently is scheduled for February 27, 1998.
            - An assessment of the recently completed corrective actions associated with our implementation of the Maintenance Rule is scheduled for April 1998.

- A Performance Monitoring Group Lead Engineer has been assigned to System Engineering to maintain focus and oversight of Maintenance Rule program implementation.

- Appendix R

  - Both units are currently shutdown and will remain so pending satisfactory resolution of Appendix R concerns at the Station.
  - To date, revisions and compensatory actions for the safe shutdown (SSD) strategy have been developed. These actions have halved the number of procedures from eight to four, simplified operator actions, and reduced reliance on the opposite unit's equipment for SSD by relying on Station Blackout diesels to power SSD equipment in the event of a fire.
  - Significant compensatory measures also have been taken, including enhancement of the Fire Watch Program, establishment of a Quick Response Team, construction of a fire wall to increase design margin, and reduction of the combustible loading in high vulnerability areas, transient combustibles.
  - A revised SSD Analysis for dual unit operation is under development at the present time, including revised procedures for dual unit operation.

- Appendix G

  - Quad Cities has revised the test procedure to require reactor vessel in-service leakage testing before the reactor is critical.
  - Quad Cities has re-trained personnel in the expectations for conducting leakage inspections.
  - Quad Cities is planning to re-perform the test and inspections to resolve any remaining concerns in this area and to retain a Code expert to supplement and mentor the Quad Cities staff on similar issues in the future.
  - Prior to the identification of the current Appendix G issues, Quad Cities initiated an independent review of the Inservice Inspection (ISI) Program by a Code expert. Another independent corporate-wide ISI self-assessment will take place early in the first quarter of 1998.

- Support to the Plant

  - In light of the number and significance of Engineering issues at the Station, we are identifying and implementing actions that will result in more responsive and effective support to plant operations.

- Engineering helped reduce the number of Control Room distractions. Reductions in the number of operator workarounds, control room correctives, and temporary alterations has been achieved during 1997.

    - Operator workarounds pending engineering action have been reduced from 18 in May 1997 to 4 in December 1997.
    - Ten control room, corrective work requests have been addressed leaving six pending engineering actions.
    - Twenty-three temporary modifications have been closed, leaving three pending engineering actions.

- Engineering also has improved its support to the plant by reducing the number of open Engineering Requests and providing engineering support to implement a number of personnel safety improvements.

    - The number of priority A and B Engineering Requests has been reduced from 300 in June 1997 to about 120 in December 1997.

- Engineering has helped resolve a number of long-standing equipment problems such as the reactor recirculation system pump restoration and Reactor Building Component Cooling Water (RBCCW) Temperature Control Valve performance.

- Engineering has helped improve safety system performance each of the last three years: from 2 percent unavailability in 1994, to 1.8 per cent in 1995, 1.2 per cent in 1996 and 0.8 per cent in 1997 (through November).

- A design bases reconstitution initiative is on-going, being approximately 10% complete. The goal of this NGG-wide initiative is to improve the quality of and access to design bases information. The project will continue through 1998-1999. The project will validate the UFSAR, align the UFSAR design basis with Technical Specification, plant procedures, the physical plant, and recreate any missing essential calculations. Quad Cities Station has completed approximately 10% of the UFSAR and supporting design bases documentation review.

ATTACHMENT 5

LaSalle County Station
Summary of Key Improvement Initiatives and Results

Summary

- LaSalle Station has identified the issues that need to be dispositioned prior to restart.
- LaSalle has a Restart Plan which includes criteria to evaluate emerging issues to determine if they must be resolved prior to restart.
- LaSalle continues to focus on implementation of its seven Restart Strategies:
    - Safe Operation
    - Human Performance
    - Plant Material Condition
    - Effective Engineering Support
    - Corrective Action and Self Assessment
    - Training
    - Process Improvement
- LaSalle will not restart until confident that necessary improvements have been made which will allow its safe restart and operation.

Self-Assessment

- After extensive self assessment efforts that identified areas needing to be improved, LaSalle has developed a comprehensive Restart Plan to address those areas, complete with objective restart criteria. The Plan was submitted to the NRC on May 22, 1997, and was revised on August 27, 1997. The revised Plan includes:
    - Establishment of a Restart Issues Review Committee
    - A well defined post-restart process
    - A four-step close out plan for restart items
    - A matrix of weaknesses identified in the April 14, 1997, supplement to the Confirmatory Action Letter (CAL) and which Restart Action Plans address those weaknesses
    - Readiness measures which are the performance indicators targeted for unit restart

- Detailed action plans have been submitted to the NRC. Progress reports on implementation of the seven Restart Strategies continue to be provided at the regularly scheduled public meetings with the NRC. Progress continues to be made against the Plan. The Site will be performing programmatic reviews to ensure adequate implementation of such items as the Maintenance Rule. On December 16, 1997, ComEd received the NRC 0350 checklist which correlates well against the LaSalle Restart Plan.

- LaSalle has completed a detailed System Functional Performance Review (SFPR) for 42 key systems. The site is examining and addressing the issues and items coming out of the SFPR against the Restart Plan.

- A new Corrective Action Program which included training over 900 station personnel was implemented on May 12, 1997. Increased sensitivity to problem identification and a lowered threshold for reporting have contributed to the number of Problem Identification Forms (PIFs) being initiated by the site, more than doubling in 1997.

- Increased management attention resulted in reducing the number of overdue items from 79 in February 1997, to a total of 21 for the last six months of 1997.

- LaSalle has formed a dedicated root cause team, trained root cause investigators, and established a Corrective Action Review Board Team. The Root Cause Team is made up of six members from the line organization including: Operations, Maintenance, Engineering, and Radiation Protection. This dedicated resource has resulted in increased quality of root cause investigations by improving proficiency and priority. These efforts have resulted in a decrease in repeat occurrences of similar events in 1997, compared to 1996 (26 repeat events in 1996; 10 repeat events in 1997).

- LaSalle's Corrective Action Review Board (CARB) is a management oversight board that ensures root cause and corrective action quality meet management expectations. Root cause effectiveness is measured by the CARB acceptance rate of reviewed Root Cause reports. The acceptance rate by the CARB has improved over the past several months from 57% to 91%.

- The Site Vice President instituted a rigorous department self-assessment program in accordance with LAP 1500-9, "Self Assessment Program." This procedure was issued on June 23, 1997.

- Continued corporate oversight and support needs to be maintained in order to improve performance. Quality and Safety Assessment have been engaged in performing an independent verification of the plant's readiness to restart. The NGG will maintain its focus on execution and will not allow restart until the NGG is confident that necessary improvements have been made which will allow safe restart and operation.

Operational Performance

- Remedial training known as High Intensity Training (HIT) has been completed. The NRC has closed this issue by IR 97-014, dated October 17, 1997. The training content involved more than Emergency Operating Procedures as training in the past has been. This training exercised the operators in the performance of a significantly broadened scope of performance expectations; including Abnormal Operating Procedures, which have less consequence but are more likely to be implemented during plant operation. Higher standards were set and enforced through the course of this training.

- HIT training identified and corrected operator deficiencies in procedural adherence/usage, emergency plan classifications, and control and communications. Many of these deficiencies had been identified by the operators themselves.

- Upcoming tasks include completion of the accreditation process for the operator training program.

- Operators are encouraged by management to become, and are becoming, more demanding of management in ensuring adequate material condition.

- Efforts have been taken to improve the quality of operating procedures. Procedures are being walked down prior to use.

- An Operations Scorecard has been implemented to provide structured guidance on how to observe, grade and provide direct feedback to operators in twenty performance areas. To date, the scorecard error rate has trended downward, resulting in a 10% decrease in the error rate over 6 months.

- Corrective actions taken to date regarding the Out-of-Service (OOS) error rate have resulted in LaSalle not having experienced a significant OOS in over 3 months.

Human Performance Improvement and Other Results

- Clear Station direction and personnel expectations have been key contributors to a notable reduction in personnel errors. In early 1997, personnel errors (as measured by our Event Free Clock) were occurring on an average of every three to five days. Recently, more than 40 days have passed without a Station Event Free Clock reset. Currently, the Station Event Free Clock averages approximately 13 days between errors.

- This error reduction has been achieved even while the number and complexity of evolutions in the plant have increased as major maintenance and modification work is undertaken. The Site has aggressively reinforced management expectations for procedural adherence by taking: (1) two "timeouts" during which critical path work was stopped and workers were required to discuss and reflect on human performance; (2) a work stoppage to aggressively address a relatively minor incident, thereby reinforcing the priority of safety over schedule; and (3) formation of a Human Performance Team to further drive down errors.

- LaSalle is identifying trends in human performance errors at a much lower level as part of their improvement efforts. LaSalle is reviewing low level events to identify trends in human performance errors.

- A positive management-bargaining unit relationship is a result of emphasizing teamwork and engaging the work force to safely "do it right" the first time. A result has been a significant drop in grievances, making LaSalle the lowest for all ComEd Nuclear Stations.

- There has been a reduction in maintenance rework from approximately 5% to 2.2% as a result of actions taken. LaSalle has performed apparent cause evaluations for all maintenance rework and appropriate corrective actions have been generated to prevent recurrence.

- LaSalle Station has not experienced a lost time accident in over two years with over 4.4 million person hours worked.

Material Condition

- An effort to identify material condition issues, a number of which were subsequently determined to require resolution prior to restart of the units, began immediately after the Unit 1 shutdown and continued through July 1997. The review process was formalized in a System Functional Performance Review (SFPR).

    - The SFPR was conducted for 42 systems important to safe and reliable operation, and included: (1) Determining the required system functions derived from the design bases; (2) Identifying material conditions that affect achieving these functions; and (3) Ensuring periodic testing requirements to adequately confirm system functions.
    - Corrective actions resulting in design changes to resolve material condition deficiencies identified by the SFPR and other identification processes have been reviewed by Station Senior Management to identify those requiring completion prior to restart.
    - Resolution of the items classified as restart issues has generated approximately 300 design changes, more than 1400 Engineering Requests and over 7,000 Work Requests.
    - SFPR also identified a generic weakness in the adequacy of Technical Specification testing which resulted in the decision to expand the review of surveillance procedures to all Technical Specification systems.

- Work continues on addressing specific material condition improvements including:

    - IRM/SRM Cable replacement
    - SBM Switch replacement (591 on Unit 1 alone)
    - Major overhauls of emergency diesel generators
    - Klockner - Mueller relay replacement (361 on Unit 1 alone)
    - EHC turbine valve replacement
    - Redesign of Lake Blowdown valve
    - Scram Pilot valve replacement
    - HVAC Modifications
    - Redesign of the reactor water cleanup suction being changed from cold to hot suction

- The focus on improving material condition has included removal of long standing operator workarounds/control room distractions including:

    - Elimination of premature degradation of reactor recirculation and flow control valve actuators,
    - Correction of diesel generator reactive power readings,
    - Elimination of the need to manually override the circulating water pump glandwater pressure switches in order to start the pump,
    - Correction of inaccuracies in the instrument and service air piping and instrument drawings, and
    - Work underway to eliminate intermediate and source range nuclear instruments spiking, and spurious alarming of the Unit 1 Service Water process radiation monitor.

- These actions are being taken to improve plant and system performance, reduce the number of challenges to our operators and safety systems, and achieve the established Station directive of safe, uneventful startup followed by a safe, long, uneventful run.

Engineering and Design

- A design bases reconstitution initiative was initiated. The goal of this NGG-wide initiative is to improve the quality of and access to design bases information. The project will continue through 1998-1999. The project will validate the UFSAR, align the UFSAR design basis with Technical Specifications, plant procedures and the physical plant, and recreate any missing essential calculations. The effort was suspended in June 1997 to allow the site to focus on restart/SFPR priorities and was restarted January 5, 1998.

- Completion of the SFPR for 42 key systems determined the required system functions derived from the design bases, identified material condition problems that affect achieving these functions, and ensured periodic testing requirements adequately confirm system functions.

- The experience level of the LaSalle System Engineering workforce has been expanded through the hiring of experienced personnel and increasing the total compliment of system engineers. This has resulted in more than doubling the percentage of System Engineering personnel who are registered as professional engineers, from 6% to 15%. Also, Senior Reactor Operator qualified engineers increased from approximately 23% to 36%, and the number of degreed personnel increased from about 70% to 82%.

- The LaSalle Engineering Assurance Group (EAG) was created in April 1997, to improve the technical quality of selected engineering products through in-process oversight of 10 CFR 50.59 screenings and safety evaluations, operability evaluations, etc. To date, there has been an improvement in the percentage of products reviewed that require rework to resolve EAG comments. This rework percentage has declined from 25% early in 1997 to approximately 10%. EAG oversight will continue for the foreseeable future.

ATTACHMENT 6

Zion Station
Summary of Key Improvement Initiatives & Results

Summary

- The initial Zion Recovery Plan was too narrowly focused and schedule driven.
- The Station has since broadened the Recovery Plan to include:
    - Programmatic Reviews
    - Departmental readiness and integrated support of operations
    - Post review of corrective action effectiveness
    - Augment management team
- Employee teamwork, morale, and the safety conscious work environment are being improved through management efforts to identify root causes and deal with the issues.
- Zion will not seek NRC concurrence on restart until Nuclear Generation Group (NGG) is convinced that the improvements required to support operations are in place.

Self Assessment

- Zion has developed a Recovery Plan.
    - Initial plan focused on improving operator fundamental knowledge, conservative decision making and standards, the Corrective Action Process, plant material condition improvements, and enhancing Quality and Safety Assessment oversight effectiveness.
    - Safety conscience work environment continues to be a priority.
    - Plan broadened to address weaknesses from the plant demonstration period used to assess operator skills. Additionally, scope expanded to include additional work in human performance, plant reliability and key programs.
    - Issues identified during the ComEd commissioned Independent Safety Assessment have been included in the Plan.
- Zion has taken the following actions to improve the Corrective Action Process.
    - Implemented the 6-site Corrective Action Process in June 1997.
      Implemented Corrective Action Review Board (CARB).

- Completed 5-year Operating Experience Review of Zion Inspection Reports, Licensing Event Reports (LER), NRC generic letters/information bulletins and notices, Problem Identification Form (PIF) that resulted in conditions adverse to quality, Westinghouse technical bulletins and Significant Operating Experience Reports (SOERs) for potential restart items.
- Set standards with regard to commitment closures and extensions.
- Focused on improving corrective action timeliness.

- Completed Effectiveness Review of selected 1996 Operating Experience events.

- Results of these efforts include:

  - A reduction in the number of repeat events from 57 in 1996, to 30 in 1997.
  - From the OPEX review, 185 items were added to the restart list. Fifty-three items remain open as of December 31, 1997.
  - The Zion CARB approval rate since June 1997, has improved from 25% to 78%.
  - Increased management attention resulted in a decrease in overdue corrective actions from 457 in July 1997, to 20 as of December 31, 1997. Documentation to support closure is included and reviewed prior to closing-out commitments.
  - Effectiveness Reviews of corrective actions associated with LERs, NOVs, SOERs and team investigations resulted in 42% of the reviews performed in 1996, being determined to be effectively implemented. Eighty-five percent of reviews performed in 1997, were effectively implemented. For those corrective actions found to be unacceptable additional actions have been taken or are planned.

- Department Assessments

  - Eleven Department Self-Assessments were completed in 1997. All eleven departments are being required to expand their self-assessment to include:

    - A comprehensive assessment of human performance
    - The programs owned by the Department
    - Actions taken to reduce and prevent recurrence of the backlog of overdue commitments, CARs, corrective actions and investigations, and the results achieved

  - Continued corporate oversight and support need to be maintained in order to improve performance. Quality and Safety Assessment have been engaged in performing an independent verification of the plant's readiness to restart. The NGG will maintain its focus on execution and will not allow restart until the NGG is confident that necessary improvements have been made which allow for safe restart and operation.

Operational Performance

- Zion Units 1 and 2 have been in an extended shutdown since the February 21, 1997, reactivity management event. As a result, a number of improvement initiatives were undertaken by the Station, within the scope of the Recovery Plan, including:

    - Extensive operations training (Phoenix) focusing on reactivity control, and normal and abnormal operations
    - Developing improved Operations Standards with clear expectations for the conduct of operations
    - Development of an operational readiness period to provide assurance that the station can operate safely and conservatively

- Zion performed the Operational Readiness Demonstration during the period of November 10, 1997, through December 3, 1997. The purpose of the demonstration period was to verify that the Operators and shift crews can implement management's expectations for plant operations and that plant support of Operations during day-to-day activities, communications and directions for shift activities is effective. Demonstration Period results are:

    - The overall performance of the Operating Department was found to be safe and acceptable. This is evidenced by acceptable performance in the goals as defined for the period.

        - Station event clock resets by Operations is 0 (goal is ≤ 2)
        - Significant human performance PIFs are 3 (goal is ≤ 4)
        - Significant OOS errors are 0 (goal is ≤ 2)
        - Significant procedure adherence PIFs are 1 (goal is ≤ 3)

    - The concentrated effort to instill higher standards in the Operating Department has been effective.

    - Overall station performance in support of Operations requires further improvement.

        - Teamwork is evident at the worker level.
        - Process difficulties at the organizational level detract from station performance.

    - The morale of Zion personnel remains high.

- In addition to a number of process and personnel improvement initiatives undertaken at the station, progress has been made in a number of other areas. Performance indicators that have shown continued improvement are as follows:

    - Contaminated floor space decreased from 10.6% (January 1997) to 3.25% (December 1997)
    - Station collective radiation exposure is 119 Rem through November 1997
    - Industrial Safety Accident Rate (ISAR) of 0.36 for 1997

- The number of inadvertent Safety System Actuations is unsatisfactory. The Operations Department has taken over responsibility for this area and is developing an action plan to address the adverse trend. The action plan will be completed by January 31, 1998.

- The Operations Department has developed a compilation of short-term (Unit 2 restart) and long-term (1998) improvement activities (commitments, corrective actions, etc.) referred to as the "Operations Get Well Plan." This document details the activities identified through outside and inside assessment and peer related activities that need to be completed to raise the performance of the Operations Department to industry standards.

- The ability of the station to maintain configuration control has been mixed.

    - Actions have been taken to improve this area, including validation of valve lineups on Unit 2 systems, process and procedure changes and station training, awareness and communication efforts.
    - On October 15, 1997, process improvements were made to the Out-of-Service (OOS) process. This has resulted in a reduction in OOS errors from 14 from January 1 through October 15, 1997, to 2 in the rest of the fourth quarter of 1997.

- Zion is in the process of implementing Improved Technical Specifications (ITS). The station is currently reviewing the SER and our ability to implement the improved specifications through current processes and procedures. The station will implement ITS prior to restart.

- Zion has implemented Severe Accident Management Guidelines (SAMGs).

- Performance in the area of work scheduling and control has been poor. The station's ability to scope work, develop congruent plans (including contingencies) and effectively implement the schedule has resulted in Operators often being the last barrier to events. Improvement initiatives include:

    - A realignment of the Work Control organization
    - Dedicating additional resources to rescope and reschedule the completion of Z2R14
    - Implementing the Nuclear Station Work Procedure (NSWP) for the work scheduling processes

Human Performance Improvement and Other Results

- Safety Conscious Work Environment
    - Recently completed survey data across all departments indicates that a positive environment now exists with regard to safety focus.
    - Dramatic improvement in safety focus for the Operations Department bargaining unit, which was cause for concern earlier in 1997.
    - Ninety-eight percent of all employees surveyed answered unequivocally "YES" that they were comfortable in raising a safety concern.
    - Other questions in the survey suggested that this environment embraced any and all concerns.
    - The overwhelming majority indicated that safety was the dominate focus at the station and a majority indicated that they expected positive reinforcement (praise or reward) for raising concerns.

- Fitness-for-Duty
    - In early 1997, implementation of Unscheduled Call-Out and For-Cause Testing policies was lacking. A common cause analysis pointed to a lack of understanding of Fitness-for-Duty requirements and a lack of proper emphasis on the importance of Fitness-for-Duty Program.
    - Clear management expectations are now being reinforced through: departmental tailgates, station-wide all-hands meetings, newspaper articles, and ComEd TV.
    - The recent random survey conducted at Zion showed that all personnel contacted understood the Fitness-for-Duty Program responsibilities. In addition, behavioral observations performed at Zion indicate that employees are actively engaged in the program.

- Event Free Clock
    - The Event Free Clock was established to communicate significant events to site personnel and raise awareness of plant events.
    - Zion's Event Free Clock goal is 40 days. Zion is at 28 days (as of January 2, 1998) between events; however, on average, the number of days between events is 15.

- Procedure Review and Control Process
    - Zion has streamlined the Procedure Review and Control Process.
        - Standard procedure formats are being implemented.
        - Dedicated procedure writers have been designated in each department.
        - Training has been provided to procedure writers on standards and expectations.

- Procedure revision turnaround time has been significantly reduced.
- A Procedure Action Request program has been implemented to assist each department in initiating and tracking needed procedure change requests.
- Zion is in the process of converting procedure distribution process from manual to electronic, thus creating an on-line availability and control of procedures.

- Common Cause Analysis

  - A common cause analysis was completed at Zion to determine the human performance issues. Result of this analysis indicates weaknesses in document preparation and coordination activities.
  - Each department will review results for applicability and develop corrective actions as a part of department self-assessments.

- Human Performance

  - To further improve human performance, Human Error Reduction training, based on industry standard methods, has been provided to over 50% of Zion employees. This training will be completed in 1998.

Material Condition

- Material condition goals from the Recovery Plan are being met:

  - Operator workarounds at 18 (28 in 1997); (goal $\leq$13 in Mode 4 and $\leq$12 in Mode 1) (Station is on track to meet goal by restart.)
  - Lit annunciators at 1 (goal $\leq$4 at 100% power; all corrective actions completed)
  - Control Room caution cards at 8 (goal $\leq$10 at Mode 2 to 1)
  - Control Room Temporary Alterations at 11 (goal $\leq$17 at Mode 5, $\leq$3 when in stable Mode 1)
  - Controllers in manual at 7 (goal is $\leq$7 in Mode 5, $\leq$2 in Mode 1)
  - Control Room deficiencies at 4 (goal is $\leq$10)

- Equipment Reliability Surveys

  - Surveys of Station personnel were conducted to determine if there were materiel conditions or equipment issues that had either not been identified, or that, based on previous experience, could be a precursor to equipment failure during startup and operation.
  - A safe startup and eighteen month operational cycle was used as a foundation for the survey in order to identify any issues that could challenge startup and operation goals.
  - Results are being reviewed by management and work will be added, as deemed appropriate, to support Zion's "reliability goal."

- Any additional approved work resulting from the survey will be performed prior to Unit 2 restart.

- System Affirmations

  - As part of Zion's Recovery Plan, 16 systems were selected for affirmation by System Engineers. The system affirmation included a walkdown of the system and a review of system open work items.
  - Ten of the systems selected were those of high-risk significance and the remaining 6 were selected based on Operation Department input.
  - Completed system affirmations will be evaluated to determine: (1) if deficiencies or conditions exist which are common to many systems, and (2) if significant conditions or deficiencies identified in one system which, if they exist in other systems, could adversely affect the safe and reliable operation of the system.
  - Lessons Learned from these reviews will be discussed with all System Engineers to ensure they are conducting the required system walkdowns/affirmations adequately. Any identified deficiencies will be resolved by additional reviews, walkdowns, or other work activities. Once this review is completed, the System Affirmations will be reviewed by management.

- Rework

  - Zion's rework rate continues to be a problem. Approximately 50% of the problems relate to aging equipment and parts. The remaining 50% is related to workmanship and work instruction failures. This is being addressed by:

    - Maintenance has put standards and expectations in place to ensure equipment is properly repaired prior to its return to service.
    - All rework items now require, as a minimum, an Apparent Cause Evaluation (ACE). Results of these investigations are then tailgated to the appropriate department(s) to help personnel understand the cause and to help prevent recurrence.

- "Fast Cruise"

  - Prior to seeking NRC concurrence to restart, Zion will seek NRC approval to operate the plant in Modes 4 and 3. This will allow Zion to operate and conduct Post-Maintenance/Modification testing, and will provide further demonstration of Zion's readiness to restart.

Engineering & Design

- A design bases reconstitution initiative is on going. The goal of this NGG-wide initiative is to improve the quality of and access to design bases information. The project will continue through 1998-1999. The project will validate the UFSAR, align the UFSAR design basis with Technical Specification, plant procedures, the physical plant, and recreate any missing essential calculations. Zion Station met the NRC commitment to complete a line-by-line review of the UFSAR by the end of 1997.

- A team has been formed to perform a comprehensive review and upgrade of the Zion Maintenance Rule program following an assessment in October 1997, which identified major weaknesses in scoping, use of risk-significance data, and establishment of performance criteria in the current program. The upgrade will be completed by March 1998.

- Actions have been taken to improve Zion's performance in the area of operability assessment preparation and disposition of corrective actions.

    - An Operability Determination Program Manager was named in May 1997.
    - A review of operability assessments, dating back to 1995, was completed. Deficiencies found were corrected and the operability determination process has been revised to incorporate lessons learned.
    - The population of open operability assessments with Unit 2-related actions has been reduced from 35 in April 1997, to 13 in December 1997.

- In May of 1997, an Engineering Request (ER) Backlog Reduction Group was formed.

    - As of December 1997, the backlog of ERs has been prioritized, those ERs required for Unit 2 restart have been identified, and workdown curves have been generated to complete the remaining ERs.
    - An improvement has also been observed in the number of ER's completed; 3,885 ERs were completed in 1997 (as compared to 2,440 in 1996; 1,703 in 1995; and 393 in 1994).

- An Engineering Assurance Group (EAG) is in place at Zion to provide oversight and mentoring to improve the quality of output from the Zion engineering departments.

    - The group is staffed with experienced engineers from outside of ComEd to introduce an industry perspective of excellence.
    - Based on the trends of the EAG scores assigned to engineering products, improvements in the quality of all product types have been observed.
    - Dramatic improvements have been made in the calculations and §50.59 Safety Evaluations produced by engineering.

- In addition to the seven technical issues in the Confirmatory Action Letter, Engineering developed a listing of 14 other significant technical issues which the site is actively addressing as part of its recovery efforts.