



# Nebraska Public Power District

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SUGGEST LETTER TO HORN  
FROM ME ON ADDRESSEE

CNSS941043

January 21, 1994

J. E. Gagliardo  
U.S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76011

REGIONAL ADMINISTRATOR

Dear Mr. Gagliardo:

Subject: Cooper Nuclear Station (CNS) Engineering Plan For  
Performance Improvement

As discussed during our January 7, 1994, phone conversation, enclosed please find the CNS Engineering Plan for Performance Improvement. We believe this plan comprehensively addresses areas for improvement identified by our own self-assessments, NRC SALP and OSTI reports, and INPO evaluations. The plan contains seven broad areas for improvement within the Engineering Department. Each improvement area contains a problem statement, actions to be taken for improvement, and a schedule for action completion. Although not shown as an action in the improvement plan, an assessment of the effectiveness of this plan will be conducted in approximately six months.

It is our understanding that you will review our plan and then periodically monitor progress towards accomplishment of the plan. A more comprehensive Engineering and Technical Support audit is planned by the NRC to take place approximately in mid-1994.

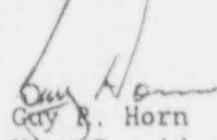
We believe the actions described in our Engineering Plan for Performance Improvement will significantly improve the performance of our Engineering Department. We intend to perform quarterly updates on our progress towards completion of the actions contained in the plan and make any necessary revisions to the plan at that time. We would be happy to share these updates with you or your staff. We look forward to your review of the plan and of our actions to implement the plan. If you have any questions, please call me at

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(402) 825-5769; Rick Gardner, Plant Manager, at (402) 825-5233; or Jim Lynch,  
Engineering Manager, at (402) 825-5656.

Sincerely,



Gary R. Horn  
Vice President - Nuclear

GRH/JEL/bjs/ya

Enclosure

cc: R. W. Watkins  
H. G. Parris  
J. L. Callan, NRC Region IV Administrator  
R. A. Kopriva, NRC Resident Inspector

## ENGINEERING PLAN FOR PERFORMANCE IMPROVEMENT

### Purpose

The purpose of the Engineering Plan for Performance Improvement is to improve Cooper Nuclear Station (CNS) engineering performance by providing proactive engineering services through continuously rising standards of excellence.

### Format

The following actions consist of a problem statement, actions to be taken, and a schedule to implement the actions.

1. Self-Improvement Culture

A. PROBLEM STATEMENT

There is a need to establish a culture within the CNS Engineering Department that encourages increasing standards of performance and promotes critical evaluation of systems and programs. Examples of this type of culture include:

- Adverse trends are identified and appropriate corrective actions are taken before equipment failures or problems occur.
- Engineering personnel are aware of industry emerging issues and their applicability to CNS. Thorough, comprehensive plans to address these issues are developed. Management is informed of these issues in a timely manner.
- Vertical communication of information within Engineering is complete and accurate. Communication occurs frequently both up and down the management chain of command.
- Systems and programs within Engineering are periodically reviewed by engineers or engineering managers for improvement opportunities.
- Root cause evaluations identify the equipment or human performance solutions that will prevent recurrence of the problem.
- Enhanced results-oriented management oversight of engineering process and programs.
- Performance feedback and coaching is routinely performed and emphasized at all levels within the Engineering Department.

B. ACTIONS TO BE TAKEN FOR IMPROVEMENT

An Engineering Department statement of vision, mission, and goals will be developed. The vision, mission, and goals will form the foundation for a culture of ever increasing standards of performance and critical evaluations of all department activities. A determination of engineering activities subject to self-evaluation will be made (i.e., performance monitoring, procurement). Training on performing self evaluations will be provided to appropriate Engineering Department personnel. Trending to identify adverse conditions is addressed in Item 2 below and root cause evaluations are addressed as part of the station's overall efforts to improve the corrective action program.

C. SCHEDULE

Specific milestones to accomplish the above improvement are as follows:

<u>ITEM</u>	<u>DATE</u>
• Develop an Engineering Department vision, mission and values statement.	2/21/94
• Communicate and re-enforce the vision, mission, and values during periodic meetings.	See Item 6
• Develop a schedule with milestones to conduct self-evaluations.	3/14/94
• Conduct self-evaluation training	3/28/94
• Evaluate methods currently used to keep personnel aware of industry issues. Make recommendations for improvement, schedule activities.	4/19/94

2. Work Management and Utilization of System and Program Engineers

A. PROBLEM STATEMENT

Many engineers are engaged primarily in activities related to the station's corrective action program and are driven by the due dates associated with these items. Only plant operational and safety issues are given higher priority.

Since Nonconformance Report (NCR) and Deficiency Report (DR) processing is second priority only to urgent plant or safety issues, and there are an ample number of NCRs and DRs to address, the net effect is that some engineering duties are not being adequately performed. For example, performance monitoring, training, system walkdowns, planning system or program improvements, or supporting maintenance activities have not been emphasized by managers, supervisors, and engineers and are therefore inconsistently performed.

B. ACTIONS TO BE TAKEN FOR IMPROVEMENT

An effective priority scheme will be established to determine the relative importance to safety and reliability of items for engineering to address. Important proactive routine activities, such as performance monitoring, planning of system and program improvements, and walkdowns, will be emphasized and an appropriate amount of time will be made available for them. After priorities are established and management expectations communicated, engineering department supervisors will be held accountable to provide an appropriate level of work screening, coaching, reinforcing of expectations, and adjusting priorities to ensure that station engineering continues to work on the appropriate items. Additionally, methods will be developed for determining the workload of individuals and the backlog of items associated with important station activities. This information will be used to balance the workload among department members and to plan work backlog management and reduction.

A system and program "report card" will be established for all appropriate systems and programs. The report cards will capture and communicate the overall health of systems and programs and will describe successes, problems, status of important items on the backlog, results of performance monitoring activities, and planned system or program improvements. Further, these individual system and program report cards will be collectively reviewed to ascertain the station-wide health of systems and programs.

C. SCHEDULE

Specific milestones to accomplish the above improvements are as follows:

1. Work management improvements

<u>ITEM</u>	<u>DATE</u>
• Develop criteria for prioritization for engineering action items.	1/27/94
• Prioritize and re-schedule action items.	2/10/94
• Perform assessment of additional permanent engineering personnel required.	Complete
• Identify contract personnel to be used for the short-term to reduce engineering backlog.	1/31/94
• Identify assignment areas and work packages for contract personnel.	2/15/94
• Contract personnel arrive on site.	3/07/94

- Develop a draft set of engineering department performance indicators. Produce appropriate charts and graphs for department and senior management review. Begin to accumulate data for goal setting. 2/07/94
  - Produce comprehensive set of department performance indicators, publish monthly. Determine performance goals and incentives for achieving goals. 4/1/94
2. Establish system and program report cards.
- Produce first draft system report card for comments (one example system). Produce list of systems to be monitored and frequency of reporting. 2/10/94
  - Produce final system report card. 2/24/94
  - Produce first draft program (e.g., erosion/corrosion, check valves, IST) report card for comment (one program). Produce list of programs to be monitored and frequency of reporting. 2/24/94
  - Produce final program report card. 3/10/94
  - Issue approved Engineering Department Instructions for both system and program report cards. 3/25/94
  - Produce report cards for systems to be monitored. (first time due) 4/1/94
  - Produce report cards for programs to be monitored. (first time due) 5/10/94
  - Perform collective system and program review. 5/24/94
3. Evaluate engineering department functions for short-term efficiency improvements. Examples include NPRDS reporting and procurement activities. Complete evaluation and plan for implementation by May 13, 1994.
4. Perform an assessment and develop a plan to identify candidate processes for re-engineering or process improvement. The plan will identify and prioritize candidate processes and develop a schedule for completion of the re-engineering analyses by August 26, 1994.

3. Management and Supervisory Monitoring and Support

A. PROBLEM STATEMENT

The monitoring and support of engineering activities by managers, supervisors, and lead engineers needs to be improved. Expectations concerning the level of oversight and involvement of various levels of management and supervision are not clear. Supervisory and management personnel are not sufficiently familiar with the day-to-day activities of their direct reports and sometimes use the Action and Commitment Tracking system as their primary monitoring tool. During periods of high activity or resolution of significant deficiencies, supervisory and management personnel sometimes become involved in the technical resolution of problems to such a high degree that it detracts from the oversight role they should provide.

B. ACTIONS TO BE TAKEN FOR IMPROVEMENT

The expectations of the role of the manager, supervisor, lead engineer, and senior engineer during routine activities and during the response to significant deficiencies will be established. These expectations will include the need to provide oversight to technical issue resolution versus performing the resolution, the role of supervisors to facilitate the engineers in completing their tasks by interfacing with others when additional resources are required and, when necessary, to obtain buy-in on proposed actions.

The expectation will be established that supervisors are to in-till a sense of ownership within the engineering organization by removing barriers that impede the optimum engineering resolution of problems (such as developing solution among different department), and by screening and actively managing engineers' workloads.

Supervisors and lead engineers will be coached to be proactive in keeping senior management and others informed of the status of critical problem resolution and the need to obtain assistance from others.

C. SCHEDULE

The actions described regarding establishing clear expectations for the various roles within the engineering department will be completed by March 28, 1994.

4. Establishing Direction and Reinforcing Expectations

A. PROBLEM STATEMENT

A clear definition of the role of system and program engineers has not been effectively communicated and reinforced to the engineering organization and other affected organizations within the Nuclear Power Group. Senior management has a clearly defined vision for the system engineer and this vision is reflected in an instruction for the system engineers. This vision, however, is not reinforced or consistently practiced on a daily basis. Therefore, system engineers do not have a common understanding as to their role and what they should do to fulfill the role. The lack of clear direction to system engineers contributes to their working on activities that detract from the primary role specified by management.

B. ACTIONS TO BE TAKEN FOR IMPROVEMENT

The role, functions, and accountabilities of system and program engineers will be clearly and concisely defined and communicated to engineering and other appropriate personnel. The expectations will be reinforced during engineering department meetings, work assignments, and performance appraisals of personnel. Additionally, the role of the engineering department in CNS long-range and integrated business plan will be discussed during department meetings.

C. SCHEDULE

The actions described will be completed by June 30, 1994. Discussions regarding the role of the engineering department in CNS long-range business plans will be discussed initially by February 28, 1994, and on a continuing basis throughout the year.

5. System and Program Engineer Training and Qualification

A. PROBLEM STATEMENT

Engineers are unsure about system engineer training requirements or their present status with regard to certification. Some system engineers have not certified on all assigned systems in a timely manner and due dates for these certifications have not been established. When a system engineer is not fully certified on his system, a lead engineer's signature is required for important work items such as test reviews, temporary modifications, and engineering evaluations. This represents a significant workload on the lead engineers. Additionally, continuing training to broaden system engineers' knowledge on items like component-specific information needs to be improved.

B. ACTIONS TO BE TAKEN FOR IMPROVEMENT AND  
 C. SCHEDULE

System engineering training improvement items to address the described problems and dates for completion are as follows:

<u>ITEM</u>	<u>DATE</u>
<ul style="list-style-type: none"> <li>Review and revise to support long-term improvements to system engineer training:            TPD 502 - Technical Staff,            TPD 509 - Station Engineer,            TPD 526 - Station Nuclear Engineer, and            TPD 527 - ISI Engineer</li> </ul>	Complete
<ul style="list-style-type: none"> <li>Identify system engineers assigned systems who have not completed system training.</li> </ul>	1/27/94
<ul style="list-style-type: none"> <li>System engineers complete system training as identified above.</li> </ul>	2/28/94
<ul style="list-style-type: none"> <li>Review system engineer system lesson plans for adequacy and upgrade them as necessary to achieve the new performance standard (i.e., begin with SRO level training lesson plans and revise objectives as appropriate for system engineer).</li> </ul>	2/15/94
<ul style="list-style-type: none"> <li>Complete necessary revisions to system engineer lesson plans and be prepared to begin delivery of new system lessons.</li> </ul>	7/29/94
<ul style="list-style-type: none"> <li>Develop individualized training plans for all appropriate engineering department personnel.</li> </ul>	6/1/94
<ul style="list-style-type: none"> <li>Develop formal indoctrination program for new engineers.</li> </ul>	7/95

6. Teamwork

A. PROBLEM STATEMENT

Working relationships are favorable between CNS engineering and operations and design engineering. However, some weaknesses exist in teamwork with maintenance and communications with management.

Maintenance shop supervision is not satisfied with the level of support obtained from system engineers with respect to acquiring and evaluating parts and the delays this causes. Also, they indicate that system engineers do not usually consult them about equipment problems and, therefore, do not always develop the best solutions to problems. When they are consulted, maintenance personnel feel their advice is seldom followed and no explanation for this is provided.

The station engineers express frustration regarding a lack of management support to perform the functions expected of them. For example, system engineers discuss examples where decisions were made by management regarding their systems without their involvement or knowledge. From management's perspective, system engineers do not consistently and aggressively pursue resolution of identified and sometimes long-standing system concerns.

B. ACTIONS TO BE TAKEN FOR IMPROVEMENT

The need for system engineers to seek input from maintenance personnel, listen to what they have to say, and provide them with feedback about results will be reinforced by engineering management.

The development of a system team approach for important systems will be evaluated. A system team is an interdisciplinary group led by the system engineer. Other stations have found that developing system teams fosters teamwork, improves system performance, and increases the quality of decisions pertaining to the system. Representatives from operations, design, maintenance, and maintenance planning will be considered for team membership.

Vertical communications between engineering management and engineers will be improved. Periodic meetings so that engineers and managers can express their perspectives and gain a better understanding of barriers to improved performance have begun. They will continue to be held on at least a bi-weekly basis.

C. SCHEDULE

A meeting involving maintenance department supervisors, maintenance department management, engineering supervisors and leads, and engineering department management to discuss mutual problem areas and improved teamwork will be held by February 15, 1994. Actions to improve maintenance and engineering department teamwork will be identified and scheduled. The Engineering Plan for Performance Improvement will be updated to reflect these actions.

Meetings to improve vertical communications within the engineering department have begun. The following schedule of meetings will be held:

<u>ITEM</u>	<u>DATE</u>
• Engineering department with Vice President - Nuclear or Plant Manager.	Quarterly
• Engineering department manager with entire engineering department	Bi-weekly
• Engineering department manager with supervisors.	3-5 times per week

- Engineering manager with supervisors and lead engineers. Bi-weekly
- Supervisor with their respective department. Weekly
- Leads with their respective groups. Weekly

An evaluation for management review of the formation of system teams will be completed by April 14, 1994. The evaluation will consist of a discussion of the concept, identification of candidate systems, format for periodic meetings of the team, expected benefits, and a recommendation of whether to proceed with the concept.

7. Personnel Development

A. PROBLEM STATEMENT

Non-technical skills and attributes required for supervisory positions have not been defined. Development of these skills would be very beneficial to improve supervisory effectiveness.

Personnel performance appraisals do not routinely address career development or training goals for supervisors, leads, or engineers. Additionally, performance feedback occurs only during the once per year formal performance appraisal or when a problem exists. Routine feedback (both positive and negative) on the achievement of project milestones or comments on routine work are infrequent.

B. ACTIONS TO BE TAKEN FOR IMPROVEMENT

The CNS management team (including supervisors) will begin a comprehensive management development program during the first quarter of 1994. The program will include the definition of the skills and attributes required for each management position. Follow-on training will be customized based on the individual assessment. Training will also be provided to managers, supervisors, and lead engineers on methods to provide performance feedback.

Within CNS engineering, career and succession plans including the department manager, assistant department manager, supervisors, and leads are being developed. Additionally, a site to corporate office rotation of one or two engineers is being evaluated.

C. SCHEDULE

The actions described above will be completed by September 28, 1994.