15

September 6, 1995

Note for: DEIIB/ Cooper SE Members

From: Sada Pullani

Subject: Cooper SE Document Request 2 (for the DSA selected Systems)

The attached document request 2 is modelled on a similar list that was used for Palisades. Please review the area under your responsibility (shown within parenthesis). Please keep in mind our recent lessons learned that we asked for too many documents in the past which we didn't use. Also review the list to see that we did not use the same document numbers before or there are no duplicate requests. A marked up copy with your comments or an E-Mail to me (SVP) is requested by COB today.

CC:
S.Rubin
E.Merschoff

E-File:G:\DEIIB\DEPFILES\D0915\DOCREQ2.COO

D/15

September 6, 1995 Rev 1

COOPER SPECIAL EVALUATION TEAM
DOCUMENT REQUEST NUMBER 2

Please respond to the following information requests individually and separately to facilitate access and use of this information. Documents are needed ASAP.

GENERIC (000-999) (ALL)

024 Summary description of action items in response to NRC findings/initiatives, including status, on RHR system (& portions of Electrical and I&C sytems supporting RHR).

025 Full size copy of controlled version of P&IDs (annotated to show code breaks, pressure, and temperature boundaries) for RHR system.

026 List of safety-related Maintenance Work Requests (WRs) for the last three years for RHR system (& portions of Electrical and I&C sytems supporting RHR), including status and priority. Include copies of WRs which are open for more than three months.

027 Summary descriptions of improvement programs/initiatives on RHR system (& portions of Electrical and I&C sytems supporting RHR).

028 RHR system (& portions of Electrical and I&C sytems supporting RHR) internal and external assessment, evaluation and audit type reports and findings and "System Health Reports" (or equivalent) for last 3 years.

029 Operating Experience Reports on RHR system (& portions of Electrical and I&C sytems supporting RHR) for last 3 years, showing status of action items.

030 System descriptions (preferably licensed operator lesson plans) for RHR system (& portions of Electrical and I&C sytems supporting RHR).

OPERATIONS (1000-1999) (Eselgroth/Thompson)

1030 All operations procedures for the RHR system.

1031 All off-normal, abnormal, etc., procedures for the RHR system.

1032 All Technical Specification interpretations (open and closed).

1033 All RHR system valve line-up procedures for all of the various modes of operation.

1034 List all currently inoperable equipment for the RHR system (& portions of Electrical and I&C sytems supporting RHR).

1036 List of all currently inoperable equipment/instrumentation in the control room.

1037 List of all <u>other</u> currently inoperable equipment in the plant.

1038 List and a copy of all temporary instructions, orders, (or equivalent) which were issued based on degraded or inoperable equipment.

MAINTENANCE/TESTING (2000-2999) (Prescott)

2030 Copy of equipment history log for RHR system (& portions of Electrical and I&C sytems supporting RHR) for last 3 years.

2031 RHR system (& portions of Electrical and I&C sytems supporting RHR) Maintenance & testing activities scheduled for 9/26 - 10/7/94.

2032 List of all check valves included in Section XI Testing Program.

2033 Listing of any Maintenance Training that will be performed while team is on site and 3 to 6 months on either side of that time frame.

2034 List of components in IST Program for RHR system (& portions of Electrical and I&C sytems supporting RHR).

2035 RHR system (& portions of Electrical and I&C sytems supporting RHR) surveillance test procedures and data for last 3 years.

2036 Vendor Trip Reports related to the RHR system (& portions of Electrical and I&C sytems supporting RHR) for last 3 years (vendors called to site).

2037 Post-maintenance test procedures for RHR system (& portions of Electrical and I&C sytems supporting RHR).

2038 MOVAT/Volts Testing Procedures for any 3 RHR system valves.

2039 All vendor tech service bulletins and responses to the bulletins for RHR system (& portions of Electrical and I&C sytems supporting RHR) for last 3 years.

2040 (Not used)

2041 Station Problem Reports initiated by Maintenance personnel for RHR system (& portions of Electrical and I&C sytems supporting RHR) for last 3 years.

2042 Preventative and predictive maintenance procedures for RHR system (& portions of Electrical and I&C sytems supporting RHR) components. Include RHR Vendor Manual.

2043 List of post-maintenance test procedures for RHR system (& portions of Electrical and I&C sytems supporting RHR) components.

2044 All RHR system (& portions of Electrical and I&C sytems supporting RHR) periodic surveillance procedures.

2045 All RHR system (& portions of Electrical and I&C sytems supporting RHR) test procedures.

ENGINEERING (3000-3999) (Lloyd)

3024 Copy of controlled version of I&C Loop diagrams for RHR system (& portions of Electrical and I&C sytems supporting RHR).

3025 Summary description, including 10 CFR 50.59 safety evaluations, for engineering modifications initiated or completed during last three years for the RHR system (& portions of Electrical and I&C sytems supporting RHR). (packages for these modifications are to be made available for SE review at site).

3026 Safety Review Committee (SRC) minutes of the above mods, as applicable.

3027 List of modifications on hold/backlog/deferred on RHR system (& portions of Electrical and I&C sytems supporting RHR).

3028 List of Design Basis Documents for RHR system (& portions of Electrical and I&C sytems supporting RHR).

3029 List of calculations or evaluations performed by Engineering during the last three years, to determine operability of safety-related systems. Attach copies of all for RHR system (& portions of Electrical and I&C sytems supporting RHR).

3030 List of all RHR system (& portions of Electrical and I&C sytems supporting RHR) open/active temporary modifications, showing date of installment, date when modification would be overdue.

CORRECTIVE ACTIONS (4600-4999) (Madison)

4621 RHR system (& portions of Electrical and I&C sytems supporting RHR), both open and closed corrective action items, such as: station problem reports, deficiency reports, correction action reports, deviation reports, quality action reports, material deficiency reports, or any similar program/initiative.

September 6, 1995
ENGEVAL.OSP

EVALUATION PLAN (PHASE 2)
FOR COOPER SPECIAL EVALUATION
ENGINEERING AND TECHNICAL SUPPORT

0.0 Introduction

The Cooper Special Evaluation (SE) consists of two phases: 1. Evaluation of the licensee's Diagnostic Self Assessment (DSA) and 2. An independent diagnostic evaluation by the NRC in areas where the DSA's evaluation was not sufficiently effective. The scope of this evaluation plan does not include the first phase and is limited to the second phase. The first phase, when completed, would have determined the areas and the scope of the second phase. The second phase is the followup evaluation to independently assess the DSA's findings and conclusions and is to pursue potential significant safety performance problems and causes which may not have been sufficiently evaluated by the DSA. The two phases together should ideally be equivalent to a regular diagnostic evaluation (DE). **[Note: This first draft shows all areas in a regular DE, including those covered by the DSA. Once the first phase is completed and the areas effectively performed by the DSA are determined, those areas will be deleted from this plan.]**

This evaluation will identify and/or assess the engineering issues associated with selected plant safety-related systems and the effectiveness of the licensee's engineering organizations in managing these issues and contributing to safe and reliable plant operation. The evaluation will include both the site engineering and corporate organizations, and also will include their ability to obtain and utilize contractor engineering support.

The engineering functions to be evaluated and various evaluation topics under each functions are indicated. Type of documents to be reviewed, analyzed, and evaluated and conclusions to be made under each function and topic are indicated. However, the team will explore further into topics by requesting, reviewing, and analyzing additional documents and evaluating additional related topics as the situation demands or additional facts on each topic become available.

The above evaluation is conducted through: 1. Accomplishment of a limited scope vertical slice evaluation of selected safety system, 2. Identification of communication, coordination, or interface problems associated with providing technical support, and 3. Identification of weaknesses in areas such as technical adequacy, timeliness, or thoroughness associated with responses to emergent work, plant deficiencies, or engineering modifications.

D/16

Engineering performance during recent outages will be evaluated through interviews, document reviews and observations (if available) and the probable causes of any performance deficiencies assessed. These causes for deficiencies will then be considered during the evaluation of the licensee's performance during power operations to assess whether similar deficiencies are likely to occur while at power(?). Each area evaluated will include an evaluation to determine the degree that the quality assurance function is practiced in line activities. As more insight is obtained, items specific to this plant may be included or deleted. **[?? Pre-identified issues will be evaluated in the appropriate areas. The list of engineering pre-identified issues is attached. The areas in which these issues will be included are indicated by each issue.??] [?? Persons with the lead for each area are indicated. Other team members will contribute as requested by the team leader.??]**

1.0 Residual Heat Removal Design, Performance and Material Condition **(DSA EP 3.11)**

This section will document the team's findings on a limited vertical slice evaluation of the residual heat removal system (RHR) and portions of electrical and I&C systems supporting RHR (hereafter referred to as the systems). This will include an assessment of the ability of these systems to perform their intended safety functions through a review of mechanical, electrical, and instrumentation and control areas. Material condition deficiencies are those conditions that are not in accordance with the approved design. The first step in this process will be an in-office review of functional requirements and other documentation.

1.1 System Walkdowns (All)

The first onsite activity will be a walkdown of the systems, using controlled P&IDs, to observe design and material conditions and determine any obvious discrepancies between the as-built design and drawings. The evaluation topics will include:

- Significant discrepancies, if any, between the as-built design and installation and current design documents.
- Single failure vulnerabilities.
- Discrepancies between operating procedures/practices and design requirements.

1.2 Mechanical Design (???)

The evaluation topics will include:

- Review the design basis and other documents such as calculations and analyses for the systems and determine the design requirement for each major component during normal and accident conditions. The review should evaluate the adequacy of design assumptions and boundary conditions.

- Assess control of design documents, their usage during the design modification process, and revisions to documents subsequent to modification implementation.

- Evaluate the condition of the system components and structures.

- Verify that safety-related portions of the systems have been seismically qualified and that non safety-related portions are automatically isolated in the event of their failure or during accident conditions.

- Examine the result of flooding or Appendix R scenarios in important spaces to verify that operations will not be compromised.

- Evaluate adequacy of valves.

- Evaluate adequacy of erosion/corrosion control.

- Evaluate adequacy of heat exchanger fouling control.

1.3 Electrical, Instrumentation and Control Design (???)

Since the plant received an EDSFI in 1989?, the major effort should be in: (1) areas not included in the EDSFI, (2) An audit of some EDSFI issues that the licensee reports have been resolved/corrected, and (3) a review of the timeliness of licensee actions on EDSFI issues that have not been resolved/corrected.

The evaluation topics may also include the following as time permits:

- Adequacy of design bases of electrical support systems

- Cable tray fill concerns and derating

- Starting of motors under degraded voltage conditions
- Breaker/fuse coordination
- Breaker/bus capacity under normal and faulted conditions
- Load sequencing and EDG loading under LOCA/LOOP conditions
- Electrical separation criteria
- Appendix R considerations
- EQ considerations
- Lack of bypassing of EDG trip functions during accident conditions

2.0 Operational Technical Support
(DSA EP 3.1)

The effectiveness of the operational technical support supplied by both site engineering and corporate engineering will be evaluated. This evaluation will divide this support into three broad areas: 1) The scope and depth of routine plant support, 2) The identification and evaluation of safety problems and deficiencies and 3) The resolution of safety problems and deficiencies and followup corrective actions. Several issues will be studied as the central part of the evaluation of technical support. Selected engineering issues/problems from section 1.0 and issues/problems from the SE operations and maintenance teams, including some that emerge while onsite, such as operability determinations, will be used for this portion of the evaluation. **Input from the SE operations and maintenance teams will be vital and will be requested.** Some of these issues/problems may be those that operations and/or maintenance need engineering on, but for various reasons engineering does not yet have ownership. In addition to those engineering issues/problems from Section 1.0, the following maintenance and operations issues/problems will be studied as cases in evaluating operational technical support:

- Recent operability determination - mechanical (???)
- Recent operability determination - electrical (???)
- Recent IST, LCO, or TS assistance request - mechanical (???)
- Recent IST, LCO, or TS assistance request - electrical (???)

- An operation or maintenance requirement for engineering assistance that emerges while onsite - mechanical (???)

- An operation or maintenance requirement for engineering assistance that emerges while onsite - electrical (???)

2.1 Routine Support

Many issues that develop to where they are problems do so because there is a lack of engineering support in the area. For each of the above issues, review and assess the level of engineering support that was (or is) provided to the plant in this area. Your evaluations should clearly state whether a lack of support or the quality and timeliness of the support contributed to the occurrence or safety significance of the issue/problem that is evaluated. **As indicated earlier, the Engineering Team will rely heavily upon the operations and maintenance teams to advise us of areas in which engineering support is weak.** Some areas in which engineering should provide routine support to the plant include:

- Operability determinations

- Root cause analyses

- Review of plant procedure revisions and special test procedures.

- Review of technical specification (TS) interpretations and Part 21 evaluations.

- System and component safety reviews (in addition to those performed as part of a modification.)

- Review of the design and implementation of the IST program.

- Responses to such operational matters as licensee event reports (LERs), set point changes, or unanticipated system responses either during normal operation or an event.

- Analysis of equipment performance tending data and recommendations for changes to preventive maintenance schedules.

- Identification of post-maintenance and post-modification testing requirements and acceptance criteria

- Recommendations for troubleshooting of complex problems

- Development of specifications for the procurement of commercial grade parts

- Monitoring to ensure that unauthorized modifications are not performed as maintenance activities without proper review (i.e., 10 CFR 50.59) and approval.

- Evaluation of external information such as vendor bulletins, safety operational evaluation reports, and NRC generic communications.

For each of the above issues, review and assess the following documents/areas as they pertain to the particular issue/case. This should include a review of the last 2 years of any periodic reports:

- Requests for engineering assistance from plant staff.

- Plant problem/discrepancy reports.

- Plant problem/discrepancy reports (e.g., DRs) that were (or should have been) engineering's responsibility to resolve.

- Applicable assessments/audits, both internal and external.

For each of the above issues, any licensee meeting where the issue is discussed, (while the team is onsite), should be observed.

For each of the above issues, the key individuals, that were (or according to organization, should have been) involved, should be interviewed, either formally or informally (structured or unstructured).

Conclusions to reach: Plant personnel did/did not receive sufficient engineering support during the time and/or circumstances leading up to the problem/discrepancy.

2.2 Identification and Evaluation of Safety Problems and Deficiencies (???) **(DSA EP 3.9)**

This section will evaluate engineering's ability to identify and acknowledge the existence of (and take ownership of) plant problems and deficiencies and to evaluate their safety significance. For each of the above selected issues, the following points should be addressed.

- The threshold for problem identification. The effectiveness of the means by which site engineering and corporate engineering are made aware of a problem/deficiency that one or both of these groups should become involved in. Was there a questioning attitude that found the problem or was the problem self-evident, e.g., leak.

- Support of line management in the engineering organization for broad and independent thinking and actions for identifying safety issues.

- The effectiveness of vertical communications and whether the staff is encouraged to identify problems.

- Adequacy of submittal of requests for engineering assistance (initial supervisory screening and review)

- Adequacy of assignment and control of the requests (prioritization and qualification of assigned individual). Backlog of requests/documents awaiting response/evaluation.

- The role of PRA in assigning safety significance.

- Results from assessments/audits, either internal or external, e.g., resulted in the identification and escalation of problems.

- The quality and timeliness of engineering safety reviews.

- Root cause analyses; timeliness and adequacy (quality) of analyses.

- Effectiveness with which contractors are used.

Conclusions to reach: **Quality and timeliness of the engineering response/evaluation of the safety issue.**

2.3 Resolution of Safety Problems and Deficiencies. (???)
(DSA EP 3.1, 3.2, 3.8, & 3.10)

This section will evaluate the ability of engineering (both systems and design) to make sound decisions regarding the proper disposition of a problem after the evaluation is complete and the ability to resolve issues and deficiencies once the decision for resolution has been made. In each case, the following points should be addressed:

- Elevation of problems to the proper level of management for resolution (internal communications and procedures).

- Effectiveness in work load management, scheduling and prioritization. Backlog of identified issues/deficiencies with resolutions awaiting implementation.

- Disposition of operability issues and operability determinations. **(DSA EP 3.8)**

- Expansion of the scope of corrective actions to include applicable related systems, equipment, procedures, and personnel actions.

- Engineering use and reliance upon QA activities and use of feedback to improve engineering processes. **(DSA EP 3.10)**

- Adequacy of monitoring of resolution (supervisory review, tracking and close-out)

- Ability to bring timely, quality and rigorous contractor assistance to bear on a problem and to properly oversee these contractors.

- The independent design verification function is performed properly for design work performed by a second party (contractor).

- Implementation of corrective actions. Actions necessary to prevent recurrence of a deficiency.

- Timeliness, quality and rigor of the products.

- Lessons learned assessments.

Conclusions to reach: **Quality and timeliness of the engineering products (resolutions) and followup corrective actions to prevent recurrence.**

3.0 Plant Modifications (???)

This section will evaluate the ability of engineering design and construction to scope, design and implement plant modifications. The evaluation will include timeliness, quality and engineering rigor. The use of contractors will be evaluated similar to the evaluation in section 2.0. The independent design verification function will be evaluated for some modifications designed by an outside contractor. Modification safety reviews (CFR 50.59) will be

evaluated here. The backlog of modifications awaiting implementation and the reason (funding, design, etc.) will be evaluated. The evaluation of engineering support for post modification testing also will be included. **The latter item will require input from operations and/or maintenance teams.**

3.1 Permanent Modifications
(DSA EP 3.3)

Review the program procedures, status listing of modifications for last 2 years, and a selected sample of modification packages to evaluate the plant design change and modification process. The topics to be evaluated will include:

- Adequacy of control of the program (program procedures, prioritization, status, and backlog of plant modifications (PMs))

- Quality of preliminary assessment (need for modification, cost/benefit analysis, management review, basis for accepting/rejecting the modification, etc.)

- Quality of the modification packages (thoroughness of safety evaluations (50.59), completeness, quality of reviews, identification of affected documents, number of revisions (too many revisions reflect poor initial design), etc.)

- Quality of installation (installation procedure, results of post-installation walk-down and testing, etc.)

- Adequacy of post-modification activities (timely revision of affected documents, operator training on modified system, close-out documentation for modification, etc.)

3.2 Temporary modifications
(DSA EP 3.7)

Review the program procedures, status listing of modifications for last 2 years, and a selected sample of modification packages to evaluate the adequacy and control of temporary modification process. The topics to be evaluated will include:

- Control of temporary modification (TM) program (adequacy of program procedure, need for TM (Vs. PM)

- Quality of TM packages (including 50.59 evaluations, independent verification of installation and removal)

- Control of TM backlog. Licensee should periodically review and document all open TMs and justify keeping them open. (Too many open TMs indicates inadequate control. TMs older than 6 months may indicate inadequate control or need for a PM),

4.0 Plant Configuration Management and Document Control (???)

The evaluation of plant configuration management and document control will be performance-based and conducted on a "time available" basis. Most of the evaluation will be as a product of where performance issues in this area are found during the other evaluations previously discussed.

4.1 Configuration Management
(DSA EP 3.4 & 3.5)

Review and assess any indicated configuration management issues and determine whether deficiencies have adversely affected the site or corporate engineering performance. For each performance issue the associated topics to be evaluated, when applicable, will include:

- Effectiveness of the methods used to validate the design basis documentation, such as technical specifications, procedures and FSAR. This evaluation will include engineering ownership/actions to maintain the plant design (licensed basis)

- Adequacy of any instrument setpoints. The control of plant setpoints should ensure that equipment setpoints are documented and controlled, and changes thereto are properly reviewed, approved, implemented, and documented. This should include setpoints for: alarms, interlocks/permissive, time-delay, protective functions, limit/torque switches for valves, relief valves. **This item will require input from/coordination with operations and maintenance teams.**

- Adequacy of the control of any computer software. The controls for new software and modification to existing software should ensure that they are properly verified (initially and periodically), approved, and documented.

- Effectiveness of the tracking of any plant electrical load growth resulting from plant modifications and the ability of electrical system to support safe plant operation.

- Adequacy of licensee's control of fuses.

4.2 Document Control
(DSA EP 3.6)

Review and assess any document control issues indicated and determine whether deficiencies have adversely affected the site or corporate engineering performance. For each performance issue the associated topics to be evaluated, when applicable, will include:

- Adequacy of document control (timely receipt, processing, distribution, storage, and retrieval)

- Adequacy of the maintenance and use of controlled documents, including controlled drawings, available in the master files and satellite files (e.g., control room). Verify that only controlled drawings reflecting as-built conditions were used to perform the work.

- Adequacy of the maintenance and use of controlled vendor technical manuals (e.g., those that are intended as replacements, substitutes, or supplements for station procedures). These manuals should be regularly updated to reflect vendor technical bulletins, or changes resulting from plant modifications.

5.0 Evaluation of Engineering Performance through Selected Case Studies

Case studies are similar to the issues/problems that will be evaluated in Section 2.0. However, case studies do not necessarily involve technical support to the plant, at least not direct technical support. The case studies below are also broader and/or more general issues than is intended in Section 2.0.

- Case Study 1 (Topic to be selected later)(???)

- Case Study 2 (Topic to be selected later)(???)

- Case Study 3 (Topic to be selected later)(???)

Additional information will be requested, on the case study issues, to provide a complete picture of how the issues were resolved. In addition, engineering will be further assessed by conducting onsite interviews with individuals cognizant of the issues and reviewing documentation not previously available.

6.0 Inservice Testing (IST) - Section XI (???) (DSA EP 2.14)

The objective of this section is to evaluate the effectiveness of Section XI testing activities to identify: component defects, variances in performance, and their use in verifying operability and in maintaining the design function of equipment. Evaluation of the testing will be performed of its conduct, techniques, acceptance criteria, and results and of their effects on the function(s) of the device tested. **Depending upon the area to be reviewed, efforts will be made to coordinate actions with the engineering and operations evaluation teams.** The team will review what is accepted or rejected by the operations department. These evaluations will be made by review of Section XI requirements as applied to the RHR system, conducting interview with post maintenance test personnel, inservice test personnel, performance/predictive test personnel, and surveillance test personnel, as well as observing the conduct of in-plant test activities. Records of ASME Section XI trends, alert ranges, and action required or taken will be reviewed to determine the effectiveness of the pump and valve test program. Interview with system engineers will be conducted to evaluate integration of data, the trends, evaluation of test results, and effectiveness of action taken. Observation of testing activities will be conducted through tag-alons with test crews as available. The evaluation will include:

- Pump testing and tending:
  - Are the right pumps in the program?
  - Performance history
- MOV testing and tending:
  - Are the right valves in the program?
  - Performance history
  - Incorporation of GL 89-10
- AOV testing and tending:

- Are the right valves in the program?

- Performance history

- Safety related air supply system, leakage, design peculiarities (i.e., nitrogen backup/availability)

- Relief valve testing and tending:

  - Are the right relief valves in the program?

  - Performance history

  - Is the testing schedule acceptable?

- Check valve testing and tending:

  - Are the right check valves in the program?

  - Performance history

  - Is the testing schedule acceptable?

  - Incorporation of SOER 86-03

For each of the above, are the relief requests reasonable? What level of review of test data is performed by the operations department?

7.0 Engineering Management and Organization (RLL)
(DSA EP 3.1)

The licensee's engineering management and organization will be evaluated in conjunction with the evaluation of many of the technical issues discussed earlier. One of the first tasks will be to understand what management's expectations are for both the site engineering and corporate engineering and how these expectations have been communicated and, most importantly, if they are understood down to the worker level. In addition to the evaluation methods discussed earlier, a number of interviews will be conducted in the organization to facilitate the evaluation. **The results of these interviews will be made available to the M&O team for their evaluation.**

Review the program procedures and site/systems engineers (SE) files, documents, and other work products for last 2 years (interview with a selected

group of SEs will help) to evaluate the effectiveness of the SE program. Review the program procedures and corporate engineering files, documents, and other work products for last 2 years (interview with a selected group of corporate engineers will help) to evaluate the effectiveness of the corporate engineering program. The topics to be evaluated in each case will include:

- Adequacy of assignment of work (qualification and training, work load, backlog)

- Effectiveness of communication and interfaces of site and corporate engineering departments with each other, particularly the timely involvement in identifying and resolving system and component problems

- Effectiveness of communication and interfaces of site and corporate engineering departments with other plant departments, particularly the timely involvement in responding to requests for assistance.

- Ownership of plant problems.

- Vertical communications, e.g., flushing problems upwards.

Two specific issues that will be evaluated for both site and corporate engineering are:

- The effectiveness of the organization in using and responding to the recommendations of "outside" assessments/audits.

- The potential for sustained and permanent improvement in the technical support area due to any new programs, practices, or resource allocations.

ENGINEERING PRE-IDENTIFIED ISSUES

(Later??)

~~PREDECISIONAL~~

09/09/94

PLAN FOR EVALUATION OF MANAGEMENT AND ORGANIZATION AT COOPER NUCLEAR STATION

Overall Objective And Methodology

The Management and Organization (M&O) Team's overall objective is to evaluate the effectiveness of the licensee's M&O in maintaining safe plant operation at the Cooper Nuclear Station (Cooper) and to determine the causes of deficiencies in Cooper's performance. The licensee's Diagnostic Self Assessment (DSA) will be evaluated to determine its efficacy for utilization in the evaluation process. The evaluation will include the functions of organizing and staffing, integrated planning, work planning and control, leadership and direction, establishing and achieving performance objectives, problem solving and decisionmaking, corrective actions, improvement initiatives, self assessment, and human resource management. An evaluation of communications and teamwork will be a part of each of the above functional evaluations as appropriate. The evaluation will include both strengths and weaknesses. The report will contain findings and conclusions based on how effectively the various managers and their organizations plan, implement, manage and control their work, establish and achieve performance objectives, and respond to problems affecting (directly or indirectly) safety performance.

The evaluation of corrective actions will consider practices and systems for the identification, assessment and resolution of deficiencies; and identify the probable root causes for identified problems and licensee corrective actions in the areas in need of improvement. Specific attention will be directed at evaluating the licensee's actions regarding identified concerns resulting from the DSA.

The M&O evaluation will also focus on the licensee's self assessment capabilities including the Quality Assurance function. The evaluation will assess the licensee's capability to perform and utilize self-assessments based upon the performance of QA and others. The performance of the DSA team will be evaluated separately. NRC's contribution to the identification and resolution of performance issues at Cooper will also be evaluated.

Implementation

The evaluation will be performed in four stages. The first stage will comprise the onsite evaluation of the DSA process. Stage 2 will encompass the continued evaluation of the DSA and the normal diagnostic evaluation preparatory efforts. Stage 3 will consist of an onsite evaluation to investigate selected DSA issues and independently evaluate issues identified during Stage 2. The final stage (Stage 4) is the root cause analysis and report writing effort.

Stage 1 will be accomplished in accordance with Appendix D and will consist of

~~PREDECISIONAL~~

interviews of DSA members and licensee personnel, observations of DSA interviews and meetings, and document reviews. Forms for the documentation of interviews, observations and potential issues are contained in Appendix A. Particular attention will be placed on determining the scrutability and thoroughness of the DSA process. The normal DET M&O report outline contained in Appendix C will be utilized to judge the completeness of the DSA process. The basis for DSA findings and DSA issue validation and integration performance will also be evaluated.

Stage 2 will be accomplished mostly in NRC headquarters and will consist primarily of document reviews, including Appendix A forms completed during Stage 1. A list of other documents available is maintained in the SE library. This list will be updated as appropriate by the SET management assistant. The SET library will contain documents requested by the SET as well as documents requested and gererated by the DSA. Additionally, the M&O Team Leader will accompany the SET Team Manager during interviews of regional management and observations of licensee corporate Board meetings. A list of management and organization areas of interest and NRC/DSA delta will be compiled from Stage 1 efforts, the in-office document review, and information derived from interviews with senior NRC management. Each issue and area will be assigned to a M&O team member for resolution. However, all M&O team members will be cognizant of and work towards resolution of all issues. This list, to be included as Appendix E, will be updated as appropriate by the M&O Team. The ability of the DSA and the licensee to identify problems, evaluate their safety significance and to recommend or implement corrective actions will be closely examined by the SET.

During Stage 3, the M&O Team will concentrate mostly on interviews and observations. The M&O interviews will usually be scheduled for 1 to 1-1/2 hours. Each M&O member should conduct or participate in an average of 3 interviews per day. Results from these interviews will be summarized on the Special Evaluation Interview (SEI) sheets (Appendix A1) on a daily basis and provided to the M&O team leader. Interviews must be scheduled through the SET management assistant. Interviews with Department heads and below should be closely coordinated with the appropriate functional area team. When practical, interviews should be conducted jointly with members of the appropriate functional area team. One interview schedule will be posted for the entire SE team. The M&O team leader will provide oversight of this list to ensure a thorough review without unnecessary repetitiveness. The intent is to schedule interviews 1-2 days in advance. Corporate interviews may require scheduling further in advance. A list of typical questions for the M&O team is attached as Appendix B. These questions are included only as examples.

Almost all the management for Cooper is located onsite. However, members of the M&O Team will travel to licensee corporate offices during the first week of the Stage 3 onsite period. The corporate evaluation will be structured to understand the corporate-site functional relationships and the extent of corporate involvement in identified site problems.

The list of areas of interest and NRC/DSA delta developed in Stage 2 will be

~~PREDECISIONAL~~

revised regularly with the goal of narrowing and consolidating the list to a manageable amount of safety-related issues that can be evaluated in depth. This M&O list should be coordinated closely with the issues list of the other teams. This list will therefore become the identified issues list around which the M&O input to the SET report will be written. As additional information is gathered, this list will be refined and provide input to the "strawman" list of potential root causes. This "strawman" list will facilitate brainstorming sessions during team meetings to develop potential root causes and aid in the development of conclusionary statements to be utilized in writing the final report. DSA root causes will also be considered for inclusion to the "strawman" list.

Other functional area teams will be requested to provide specific information on the management and organization in their functional areas. This information will be evaluated by the M&O team along with their own data and the list and status of issues will be updated regularly. Close coordination with other functional area teams is essential. The intent will be to exchange briefings individually with each functional area team during the weekend onsite. **During the second week on site, M&O team members may accompany other functional area teams during functional area team meetings or during the ride to or from the site to facilitate the exchange of information.** Findings and observations by other functional area evaluators that pertain to M&O will be pursued, verified, and correlated for possible extension to plant-wide or corporation-wide strengths or weaknesses by M&O team members. The extent that the licensee was previously aware of a problem will be evaluated in each case.

Observations will be made as the opportunities exist or develop. The licensee's list of regularly scheduled meetings will be reviewed and one or more members of the M&O team will attend as appropriate. The team will also be alert for unscheduled meetings or discussion among the licensee's staff that develop and are of interest. These observations will include such things as communications, teamwork, problem solving and decisionmaking, and approach to safety. **For meetings of interest that cannot be attended by the M&O team, other members of the SET will be asked to attend and provide feedback.** Significant items or issues emanating from the observations will be documented on SEI data sheets.

Support will be provide to other functional areas regarding issues such as training and industry operating experience.

The last week onsite will be used to gather data and come to closure on previously identified issues and begin to formulate root causes for significant weaknesses. Identification of new issues will have a low priority during this last week onsite. Identified issues will be evaluated for impact on plant performance. Programmatic issues will be evaluated only if there is reason to believe the issue has at least an indirect (but significant) impact on performance. Programmatic issues, when evaluated, will also be pursued to determine the role and involvement of management in the issue.

~~PREDECISIONAL~~

For Stage 4, the SET will return to the NRC offices in Rockville and prepare the SET report. The report format has not been determined. However, the outline for the Management and Organization section may follow the final M&O identified issues list. A list of M&O subjects that potentially could be on the M&O issues list is attached as Appendix C. This list is only illustrative; the actual issues list is expected to be more descriptive and specific. This Appendix C list will also provide a place to "pigeon hole" information gathered during the evaluation that is not yet identified as a real issue, but is of enough interest to collect and monitor for further evaluation.

~~PREDECISIONAL~~

Appendix A1

NRC PREDECISIONAL DATA

INTERVIEW SUMMARY NO: DATE: / /

INTERVIEWEE: TITLE:

INTERVIEWER: COPIES TO: OPS MT ENG M&O

Narrative - Indicate in left margin if an issue is a Strength(S), Weakness(W) or Improvement Area(IA). Indicate in the right margin which identified issue(s) this material supports (or refutes). For material that is not assigned to an issue, indicate which section of Appendix F is applicable. Narrative should properly characterize licensee's prior knowledge of issue. Refer to Interview Checklist. Additionally, technical issues (not M&O related) should be identified by functional area in the right margin.

~~PREDECISIONAL~~

Appendix A2

COOPER SPECIAL EVALUATION OBSERVATION

___ M&O ___ OPS ___ MT ___ ENG No: M&O - _____

___ Lic Identified Date: _____

___ SET Identified Rev.-

AUTHOR _____

POTENTIAL ISSUE(S)/OBSERVATION(S):

EXAMPLE(S)/SOURCE(S):

PROBABLE CAUSE(S):

REMARKS/LICENSEE ACTION:

~~PREDECISIONAL~~

APPENDIX A3

COOPER DSA OBSERVATION

NUMBER: _____ DATE: _____ Rev: _____

EVALUATOR: _____

Area/DSA Member Observed: _____

Narrative Observation:

Identified Strengths/Weaknesses

~~PREDECISIONAL~~

Identified Issues

~~PREDECISIONAL~~

APPENDIX B

M & O TEAM QUESTIONS FOR MANAGERS AND SUPERVISORS

(Pick questions that apply to your particular interview)

A. IMPROVEMENT PROGRAMS

1. What improvement programs are being implemented in YOUR department?

2. Discuss the effectiveness of these programs

3. Over the past year, has upper management's emphasis on improvement programs, increased, decreased or stayed the same? Give examples to support your response.

4. How closely is management involved in the implementation of these programs? How does management track and monitor these programs? Is it effective?

5. Are the improvement programs making a difference ?

6. Do you have resources to implement these programs effectively? Discuss.

~~PREDECISIONAL~~

7. Are improvement programs focussed on production or safety - or both ? Give examples.

8. Why was program established? (i.e., in response to ...)

9. Were there other previous improvement plans and/or initiatives that attempted to accomplish the same objectives?

10. When was the program established?

11. Were the resources (personnel and financial) determined/estimated to implement the program?

12. What are the resulting action items and who was assigned responsibility? (obtain documentation)

13. What organization/person is responsible for monitoring the progress of program implementation?

14. Do you have/know the current status of all action items? (obtain documentation)

15. Were there any major delays in implementing any and/or of the action items? If so, which ones and what were the causes?

~~PREDECISIONAL~~

16. How is program effectiveness determined/measured, and how and to whom is this information provided? (i.e., methods, performance indicators, etc.) (obtain documentation)

17. Has program effectiveness been independently determined by a third party? If so, were there any weaknesses identified? (i.e., QA audit, etc.)

18. Is the program expected to be permanent or is there an expected completion date? When?

19. In your opinion, are these programs timely and on a reasonable schedule? What milestones were met early? What milestones have not been met?

20. What is the biggest problem with accomplishing the action plans?

21. When we talk to your staff, what will they tell us about the various action plans?

22. What will craft people have to say about any of the action plans?

23. What part do you play in those plans?

24. Who had input in the development of these plans?

~~PREDECISIONAL~~

25. How is accountability accomplished regarding these plans?

26. How were these plans communicated to craftworkers?

27. Are there additional programs you would initiate in this department? Which ones and why?

B. COMMUNICATIONS

1. With whom do you communicate frequently? Are there others that you communicate with less frequently but which are important?

2. With which of these is communications best? Worst?

3. What percentage of your workday is spent in meetings?

4. What improvements are needed in your communications?

5. How good are communications at the working level? When we ask this questions at the working level what will they say?

6. How would you characterize the flow of information from above?

7. Name 3 positive/3 negative aspects of communication at Cooper.

~~PREDECISIONAL~~

8. What has management done to enhance communication effectiveness?

9. How often do you interface with craft level employees?

10. Do you think you are well-informed about what is going on at the site?

11. Do you think people feel free to communicate with their bosses and other managers, even if they are reporting problems?

12. Would most people report a problem if it were caused by personnel error?

C. GOALS AND OBJECTIVES

1. Do you know what Cooper Station goals/objectives relate to your job or group?

2. Who in this department participates in the development or implementation of those goals and objectives?

3. Do you think these goals/objectives are supported by management in terms of implementation, resources in particular?

~~PREDECISIONAL~~

4. What influences Cooper's work goals/objectives most ? (NRC requirements/PUC actions, power production, safety, cost)

5. How are goals and objectives communicated to craft level employees?

6. Do you think goals and objectives are supported by craft level employees and firstline supervision?

7. What methods of accountability are implemented in your department regarding station goals and objectives? How are you held accountable?

D. QUALITY

1. What impact does QA have on you? Your organization?

2. For your area, are you made aware of audit or surveillance findings? What about resultant corrective actions?

3. How would you characterize the quality of your group (capability, work ethic, education, training etc.)?

4. How would you rate QA's effectiveness?

~~PREDECISIONAL~~

5. Is management receptive to QA's (and other oversight groups/committees) concerns?

E. STAFFING, RESOURCES AND WORKLOAD

1. Do you have enough (too much) manpower to effectively meet the job requirement? Why?

2. Are there people doing the wrong job because of staffing issues?

3. What is the turnover rate in your department? What are the reasons?

4. Is there much crossover of employees from other sites within NPPD?

5. Is there much infusion of new personnel from outside NPPD?

6. How is your time spent? Technical, Supervising, Teaching, Administration, Meetings, Contractor Supervision?

7. How do your people spend their time?

8. What is the basis for setting priorities? Can you get outside help for high priority items? How about medium priority things?

~~PREDECISIONAL~~

9. How much time do you have to spend, and how much time do you actually spend, on your high priority issues? To what extent are these issues planned or reactive?

10. How often are you out in the plant? When were you last at the XXXXX location? What do you do when there?

11. How often are you on the second shift? Graveyard shift? Weekend? When were you here last for each? What do you do when there?

12. When did your boss last do the above? (refer to #10 & #11) What did he/she do?

13. If you suddenly had unlimited resources, where would you apply them first?

14. What is your shortest resource?

15. Do you participate in the budget process? Explain.

F. MANAGEMENT SUPPORT

1. Does management provide adequate oversight to your job/department? How is this accomplished - management presence, communication, documentation?

~~PREDECISIONAL~~

2. What kind of management and professional development training is provided? How often?

3. Have you been trained in the management of change?

4. Describe the last management training you received. How did you incorporate this training into your assignment? What results were obtained?

5. How often do you interface with your boss? Describe a typical example.

6. How often are performance evaluations accomplished? What are the rating criteria?

7. Describe the last award or reward given to you or someone in your department.

G. MANAGEMENT INFORMATION SYSTEMS

1. Do you have computer MIS in your department to help plan, schedule, monitor and report work? If so, describe.

2. Are these systems integrated across departments; are they tied into corporate headquarters?

~~PREDECISIONAL~~

3. Are these systems easy to use? Do your people know about them and how to use them?

4. What improvements do you believe are necessary? Why? Are any planned?

H. ROLES AND RESPONSIBILITIES

1. Does the current organizational structure define roles and responsibilities clearly? Why/why not?

2. Does the structure provide responsibility over contractors/vendors?

3. Does authority match responsibility? Accountability?

4. If you could change two things at Cooper, what would they be?

APPENDIX C

2.4 MANAGEMENT AND ORGANIZATION

2.4.1 CORPORATE DIRECTION AND SUPPORT

2.4.1.1 Mission, Policies, Values or Culture Statement

2.4.1.2 Expectations - Goals and Measurable Objective; Standards

2.4.1.3 Resource Allocation

2.4.1.4 Corporate Oversight

2.4.1.5 Strategic Plan

2.4.2 MANAGEMENT OVERSIGHT AND CONTROL

2.4.2.1 Involvement/Focus/Direction/Management Attention/Observation (Management by Walking)/Leadership

2.4.2.2 Monitoring, Evaluating, Feedback, Followup, and Coaching

2.4.2.3 Interfacing - Horizontal and Vertical Communications

~~PREDECISIONAL~~

2.4.2.4 Organizational Structure, Reorganization, Span of Control, Layers, Change Management, and Organizational Stability

2.4.2.5 Safety Ethic/Systems/Evaluations, Safety Committees, SORC, SRAB

2.4.2.6 Responsibility, Authority, Accountability, Delegation

2.4.2.7 Participative Management (e.g., Involvement in the Decisionmaking Process and Quality Circle Program)

2.4.2.8 Professionalism

2.4.2.9 Recognition/Rewards/Incentives

2.4.2.10 Expectations and Standards

2.4.2.11 Time Management/Meetings

2.4.3 ORGANIZATION, CULTURE, AND CLIMATE

2.4.3.1 Organizational Climate - Attitudes, Morale, Trust, Motivation

2.4.3.2 Organizational Culture - Perceptions, Values, Heroes, Hidden Organization

2.4.4 PROBLEM SOLVING PROCESS

2.4.4.1 Identification and Prioritization

2.4.4.2 Root-Cause Analysis

2.4.4.3 Corrective Actions

2.4.4.4 Communications (Methods and Attitudes)

2.4.4.5 Ownership of Problems And Work Processes

2.4.4.6 Response Mode (Reactive/Proactive, Internal/External)

2.4.4.7 Industry Experience/Lessons Learned

~~PREDECISIONAL~~

2.4.5 STAFFING AND HUMAN RESOURCES/MANAGEMENT

2.4.5.1 Personnel Relations/Human Relations/Employee Concerns

2.4.5.2 Job Qualifications and Job Descriptions

2.4.5.3 Personnel Planning (Manpower)

2.4.5.4 Union (Labor) Relations, Bargaining Unit

2.4.5.5 Career Planning/Development/Management Succession

2.4.5.6 Personnel Performance Review System

2.4.5.7 Work Environment

2.4.6 INTEGRATED PLANNING AND WORK CONTROL

2.4.6.1 Planning Processes (Goals, Objectives)

2.4.6.2 Short-Term (Monthly, Annual Plans, Organizational Development)

2.4.6.3 Long Term - 5-Year Business Plan

~~PREDECISIONAL~~

2.4.6.4 Workload Balance and Administrative Burden

2.4.6.5 Administration of Management/Work Processes

2.4.6.6 Tracking Systems, MIS, Document Control

2.4.6.7 Scheduling Work

2.4.6.8 Productivity

2.4.7 [RESERVED]

2.4.7.1

2.4.7.2

2.4.8 COMMUNICATIONS

2.4.8.1 Engineering

2.4.8.2 Operations

2.4.8.3 Maintenance

2.4.8.4 Site - Corporate

~~PREDECISIONAL~~

2.4.9 SELF-ASSESSMENT

2.4.9.1 Quality Assurance Department

2.4.9.2 Other Programs/Processes/Committees

2.4.9.3 PI's

2.4.9.4 Tracking and Trending

2.4.9.5 Management Commitment

2.4.9.6 Status of Completed and Ongoing Self-Assessments

2.4.9.7 Relationship between QA and Plant Organization

2.4.10 CONTROL OF CONTRACTORS

2.4.10.1 Use of Contractors in Line Positions

2.4.10.2 Supervision of Contractors On Site

2.4.10.3 Quality Verification of Contractor Products and Services

~~PREDECISIONAL~~

2.4.11 MANAGEMENT INITIATIVE AND PERFORMANCE IMPROVEMENT PROGRAMS

2.4.11.1 Reactor Trip Reduction

2.4.11.2 Personnel Errors

2.4.11.3 Operational Improvement Plan

2.4.11.4 Consultant Studies (Communications/Interfaces)

2.4.11.5 Other Initiatives

2.4.12 CAUSES FOR COOPER PERFORMANCE WEAKNESSES

~~PREDECISIONAL~~

Appendix D 8/11/94 (AM)

Management & Organization Plan - August 15 thru 19

Monday, August 15:

1. Review DSA RFIs and Licensee responses, including reading and followup questions with DSA members.

2. Review DSA findings/issues, including any licensee responses.

3. Review DSA interviews of licensee personnel. Ensure records will be maintained.

4. Observe interviews/observations of licensee by DSA.

5. Observe DSA counterpart debriefs.

6. Attend DSA team meeting.

Tuesday, August 16:

1. Interview DSA M&O team - this will include questions regarding the DSA process, individual procedures, personal observations, NRC contribution, and licensee response:
   Jay Doering
   Harry Kister

2. Observe additional interviews/observations.

3. Continue review of documents.

4. Observe DSA counterpart debriefs.

5. Attend DSA team meeting.

Wednesday, August 17:

1. Interview Cooper's DSA Counterpart Team - this will include questions regarding counterpart performance and NRC contribution as well as probing questions to determine licensee response to DSA:
   Bob Beilke
   Garrett Smith
   Ron Deatz

2. Followup questioning of DSA M&O team. Potentially, tour the facility to discuss selected issues. Note: Team Manager my wish to accompany.

3. Observe M&O and DSA roll-up/root cause effort.

~~PREDECISIONAL~~

4. Continue review of documents.

5. Observe DSA counterpart debriefs.

6. Attend DSA team meeting.

Thursday, August 18:

1. Observe DSA root cause assessment meetings.

2. Continue document review.

3. Observe DSA counterpart debriefs.

4. Followup questions with DSA members.

5. Observe DSA team meeting

Friday, August 19:

1. Observe DSA exit.

2. Attend SET exit.

Note: SET team meetings will be held during site-to-hotel and hotel-to-site transits.

~~PREDECISIONAL~~

APPENDIX E

IDENTIFIED ISSUES LIST

1. Management Systems, including MIS, appear to be weak.

2. The organizational discipline of Planning and the execution of plans is deficient. M&O will concentrate on long-range, higher-level planning including outage planning.

3. Human resource and organizational development is less than adequate. HR/OD tools available are not used. Corporate HR/OD support is not strong. The "Human Factor" is not considered during root cause investigations.

4. Corrective Action Processes are inadequate. Workers have been hesitant to identify plant problems. Consequently, numerous operator work-arounds are evident. Subsequent to recent emphasis on identification of problems, excessive and growing backlogs exist. Root cause evaluations lack rigor and depth. Resultant corrective actions do not address the root cause and result in additional problems and repetitive equipment failures. Additionally, corrective action implementation is frequently delayed due to a lack of accountability and "vision."

5. Self Assessment is sporadic and lacks outside perspective (OER) and self-critical perception. However, many current issues were previously identified, but remain uncorrected due to a poor corrective action system and a lack of a sense of urgency.

6. Independent Oversight, including Quality Assurance, failed to detect problems and promote effective change. SORC and especially SRAB members suffered from a lack of sufficient independence. QA assessments and audits frequently missed significant problems. However, QA sporadically identified problems and repetitive issues which were not adequately addressed because of either management's failure to take action or QA's failure to escalate issue appropriately.

7. Staffing was identified by a previous assessment as below average and in some areas such as Maintenance and Engineering as weak. However, the DSA characterized this area as adequate. Backlogs and work/modification delays will be analyzed to determine if staffing was a contributing factor. In addition, staffing will be evaluated as part of issues 1 through 6 above.

8. Resources (other than staffing) were also determined by the DSA to be adequate. Information supplied by AEOD indicates that O&M and Capital spending is slightly below average. However, some significant projects and modifications have been repetitively postponed due to cost concerns and continued economic pressures may inappropriately inhibit needed

process and program improvements. Resources will be considered during the evaluation of issues 1 through 6 above.

9. Communications are weak. While the DSA did not address this issue directly, poor communications contributed to several identified weaknesses such as corrective actions and independent oversight. Communication processes will be evaluated for effectiveness.

1
Dear President.....

This letter forwards the Special Evaluation Team (SET) report for the Cooper Nuclear Station (CNS). The team assessed the effectiveness of licensed activities performed by Nebraska Public Power District (NPPD) in achieving safe operation at Cooper, and determined the causes of performance deficiencies. The team of evaluators, led by a Nuclear Regulatory Commission (NRC) manager, evaluated safety activities at Cooper from August 15-19, 1994, and September 26 through October 7, 1994. Evaluations were also conducted at the corporate offices during these periods. Findings were discussed with you at an exit meeting on November 17, 1994, at the Cooper Station. This exit meeting was open for public observation.

To gain an independent perspective, the team was staffed with members having no recent responsibility for the regulation of NPPD. Safety performance was evaluated in the areas of operations, maintenance, engineering, and management and organization, including an evaluation of findings made by your Diagnostic Self-Assessment Team (DSAT).

A declining trend in performance was evidenced by recent NRC inspections conducted between May and August 1994, surrounding the identification of operability concerns affecting the primary containment system, emergency diesel generators, and the control room emergency filter systems which produced substantial concerns regarding inadequacies in management control and oversight, maintenance, testing, design control, and procedures. These conditions either existed or went undetected for years even though there were processes and programs in place that should have resulted in the identification and correction.

During July and August 1994, your Diagnostic Self-Assessment Team found deficiencies in the areas of design control, configuration control, engineering experience, testing, quality of maintenance, long-term equipment reliability, procedural adequacy and compliance, industrial safety, conservative operating philosophy, training programs, human resource development, planning, management systems, self-assessment, and system functionality. The DSAT attributed these deficiencies to weak management, poorly defined programs, and ineffective self assessment. The SET efforts confirmed that the findings of the DSAT accurately characterized the station's performance deficiencies and their causes.

Additionally, the SET identified numerous significant equipment problems which lead to the determination that several safety-related systems were inoperable, including residual heat removal, standby liquid control, core spray, and service water. Your staff was unaware of these deficiencies until they were identified by the SET. The number and individual importance of these equipment problems represented a potential challenge to safe plant operation.

D/18

I note that many of the findings of the DSAT and SET have been previously identified by your staff and other assessment activities, and that previous corrective actions were not effective. Although progress is being made towards addressing these issues in the newly developed performance improvement plan, I remain concerned that equipment and performance issues continue to exist at CNS.

It is important that you and other NPPD managers carefully review the enclosed report, and place special emphasis on the areas requiring additional management attention. Following this review, I request that NPPD determine the actions needed to ensure a long-term resolution of CNS performance deficiencies and their causes. I also request that NPPD provide my office within 60 days of the date of this letter, its plans for addressing the root causes.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure will be placed in the NRC Public Document Room. Should you have any questions concerning this evaluation, we would be pleased to discuss them with you.

Sincerely,

James M. Taylor
Executive Director for Operations

Enclosure:
Special Evaluation Team Report
for Cooper Nuclear Station

cc w/encl: See next page

DISTRIBUTION: See next page

OFFICE:	DEIIB:AEOD	DEIIB:AEOD	D:DOA:AEOD	DD:AEOD	D:AEOD
NAME:	EWMershoff	SDRubin	CERossi	DFRoss	ELJordan
DATE:	11/ /94	11/ /94	11/ /94	11/ /94	11/ /94

OFFICE:	D:NRR	RA:RIV	EDO		
NAME:	WTRussell	LJCallan	JMTaylor		
DATE:	/ /94	/ /94	/ /94		

OFFICIAL RECORD COPY

cc w/enclosure:

Distribution (w/encl)

DCD/Central Files
JTaylor
JBlaha
JMilhoan
VMcCree
EJordan
DRoss
TMartin, RI
SEbneter, RII
JBMartin, RIII
SRubin
DOA R/F
EDO R/F
AEOD R/F
DEIIB R/F1111111111111111111111111111

19 pgs

Nebraska Public Power District

COOPER NUCLEAR STATION
P.O. BOX 98, BROWNVILLE, NEBRASKA 68321
TELEPHONE (402)825-3811
FAX (402)825-5211

NLS940022
July 27, 1994

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington D.C. 20555

Gentlemen:

Subject: Diagnostic Self Assessment At Cooper Nuclear Station
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

Reference: Meeting Between Nebraska Public Power District and the NRC Held June 23, 1994.

On June 23, 1994, the Nebraska Public Power District (District) attended a meeting at NRC Headquarters. During that meeting, the NRC indicated its intention to perform a two phase Diagnostic Evaluation to provide additional information to enable NRC senior management to make more informed assessments concerning Cooper Nuclear Station safety performance. It is the District's understanding that Phase One will be an in depth document review and that the results of Phase One would be used to determine the extent of the Phase Two onsite effort.

Following our meeting, the District initiated plans to conduct a Diagnostic Self Assessment (DSA) of the Cooper Nuclear Station. Our objective in performing this self assessment is to gain additional insight into plant performance, identify any additional areas requiring improvement, and identify appropriate corrective actions to effectively secure these improvements. **The Diagnostic Self Assessment will be a formal independent assessment similar in scope and depth to an NRC Diagnostic Evaluation and will review significant aspects of plant operation, maintenance and testing, engineering and technical support, and management effectiveness.** The DSA is being conducted during July and August 1994 by a team **composed of industry experts independent of CNS.** The plan for conducting the DSA is enclosed for your review. The results of the assessment will be formally documented and available for NRC review.

Since the independent DSA is similar in scope and depth to **Phase Two of an NRC Diagnostic Evaluation**, the District requests that the NRC consider using the results of the DSA as their Phase Two effort in assessing Cooper Nuclear Station performance. Accordingly, the District welcomes NRC observation of our

D/19

9408020095 2pp

assessment activities. A formal report of findings will be available for use as part of your overall assessment and conclusions. The DSA Team Leader will also be made available for a public meeting to discuss the results of their assessment.

Please contact me if you have any questions, or would like any additional information.

Sincerely,

G. R. Horn
Vice President - Nuclear

Enclosure

cc: Regional Administrator w/enclosure
USNRC-Region IV
Arlington, TX

NRC Resident Inspector w/enclosure
Cooper Nuclear Station

NPG Distribution w/o enclosure

COOPER NUCLEAR STATION
DIAGNOSTIC SELF ASSESSMENT (DSA)
IMPLEMENTATION PLAN

Objective

Conduct an in depth independent Diagnostic Self Assessment of the performance of Nebraska Public Power District's (NPPD's) Cooper Nuclear Station (CNS).

Overall Scope

The NPPD DSA will evaluate performance in the areas of operations and training, maintenance and testing, engineering and technical support and management and organization. The evaluation will include specific emphasis on assessment of CNS's performance history. The results of past NRC diagnostic evaluations and experience gained from other industry initiatives will be utilized as a basis for the evaluation. Some of the significant problem areas identified from these activities which will be included in the DSA are:

- Management's effectiveness in resolving underlying root causes and improvement in overall organizational performance
- Effectiveness of site and corporate management leadership
- Effectiveness of the onsite QA organization
- Effectiveness of line organization performance (self) assessment activities
- Ability and capacity of the organization to simultaneously support normal operations, deal with extraordinary plant problems, and respond to significant regulatory initiatives
- Management tolerance of inadequate organizational performance
- Management tolerance of equipment problems
- Effectiveness of management processes and work control processes
- Effectiveness and technical adequacy of engineering support
- Understanding of the facility design basis and adequacy of conformance

Self Assessment Schedule

The self assessment will consist of four weeks of onsite evaluation activities beginning on July 25, 1994 and contining through August 19, 1994. Progress toward meeting the objectives will be continually evaluated and the need for additional team resources and/or onsite time will be determined. The onsite activities will be followed by two weeks of report preparation. The assessment report executive summary and key findings will be available shortly after the conclusion of the assessment. NPPD will be prepared to discuss the results of the DSA and its overall findings with NRC at a public meeting. A final report will be issued after the public meeting.

DSAT Management and Composition

An experienced nuclear utility executive team manager has direct responsibility for and control of the DSA. The DSA Team manager will report to the NPPD President and Chief Executive Officer and concurrently to the Vice President, Nuclear. See Attachment A for the background and experience of the assigned team members.

The DSA Team manager will direct and manage the DSA during the assessment process and ensure that the objectives and schedules described herein are achieved. He will insure that safety concerns identified by the team are promptly reported to the site manager.

Methodology

The DSA will use performance based evaluation techniques to assess both past and present NPPD performance. Most of the team are INPO trained peer evaluators and several team members are former NRC inspectors and managers who have experience in application of safety-oriented, performance based assessments. The DSA will also utilize the guidance from the NRC Diagnostic Evaluation Program Directives and Handbook in conducting the assessment.

The team's selection of specific issues and evaluation subjects will be guided by its review of the plant history, including Cooper performance information collected or developed by INPO. The team is also including the information provided via NRC DET "requests for information" in their review. The DSA team will review plant event and problem histories, directly observe NPPD's handling of contemporary issues, evaluate plant and corporate NRC-licensed programs and their implementation, and conduct a vertical slice audit of at least two important safety systems.

The DSA will apply the evaluation methodology used by NRC in its performance of Diagnostic Evaluations. Level 1 of the DSA evaluations will focus on plant safety performance with respect to personnel, equipment and procedures. Level 2 of the evaluations will concentrate on program adequacy and performance. Activities at Level 3 will seek to understand the effectiveness of management in directing the plant's activities and responding to the problems identified in Levels 1 and 2. The DSA will, using the information developed in the Level 1-3 activities, identify root causes for significant verified problems identified at those levels.

Functional Area Assessments and Attributes

The following set of attributes have been provided as initial entry points for assessing the four functional areas. The attributes will be modified based on the team's findings as the evaluation progresses. Review of activities in <u>each</u> functional area will focus on safety and performance issues which warrant senior station and corporate management attention. Issues for which NPPD has not taken effective corrective action or was not aware will be clearly defined, evaluated by

the team, and documented.

1. **Operations and Training**

The effectiveness of training programs will be evaluated for Operations, Maintenance, Engineering Support, Chemistry, and Health Physics, including observation of simulator training activities, control room activities, classroom training and work processes.

The adequacy and effectiveness of operational activities by observation of work processes, interview of workers and managers, review of procedures, and evaluation of past and current problems will be evaluated. Individual attributes considered will include:

Adequacy of Shift staffing
Shift Supervisor Command and Control
Operating shift professionalism
Control Room Decorum, (free from distractions, control room access, etc.)
Shift routine and control room shift turnovers
Awareness and control over plant activities
Control Room Alarm status
Operator "Work-Arounds"
Supervision of activities outside the control room
Response to plant annunciators and off normal conditions
Equipment out of service controls
Control over surveillance and maintenance activities
Log keeping (In and outside control room)
Observation of simulator drills
Adherence to procedures (philosophy and practice)
Operability Determinations (Compliance with T.S. and Plant procedures)
Event reporting
Verification of system lineups
Independent verification process
Walkdown of Selected Systems
Housekeeping
Design Change Interfaces with Procedures and Training
Performance of surveillances and return to normal activities
Quality of Communications/Interfaces with other departments (On shift, Shift turnover meetings, Plan of the Day Meetings)
Operations Department staffing and morale
Effectiveness of interfaces between operations and testing groups
Surveillance procedure review, field verification and validation
Conduct of start up testing

Post trip review (process for unit restart following reactor trip).
Emergency Plan Implementation

Utility self assessment activities will be reviewed for effectiveness including: QA audits and surveillances, management oversight of their own activities; formal and informal self-assessments done by work groups; third party or contractor technical evaluations and assessments.

2. **Maintenance and Testing**

Assess material condition via plant tours keying on safety systems and important balance of plant systems; review backlogs and backlog prioritization system(s); evaluate the impact of open maintenance on safety systems; and, review trend data and performance indicators.

Maintenance backlog will be reviewed by evaluation of management responsibility assignments, system engineer involvement in backlog management, backlog prioritization, management awareness of backlog status, trend data, and performance for key safety systems. Forced outage planning will also be reviewed. These review swill be done in conjunction with evaluations of material condition and deficiency identification and correction.

The operations interface with maintenance will be evaluated by review of operator work-arounds for plant problems, operator involvement in routine maintenance scheduling and prioritization, and work control.

Maintenance work observations will be conducted to review safety related and important balance of plant work activities for control of plant conditions, worker safety measures, workmanship and proper installation, adequacy of work instructions and their use, presence and effectiveness of supervisory oversight, and successful outcome of the activity.

Supervisory and management oversight of maintenance activities will be evaluated by field observations, staff interviews, review of plant problems for supervisory presence, and management and supervisory time management and commitments (meetings, administrative workloads, etc.)

Workers, supervisors, and managers will be interviewed to determine the content and extent of communication of management expectations. Application of expectations will be observed during field activities.

The interface between maintenance, operations, and engineering will be evaluated to determine the effectiveness of technical support activities including input to maintenance prioritization, ownership and involvement of systems engineering of plant hardware and its problems, involvement in and effectiveness of root cause and equipment failure analyses, and involvement in

the control of temporary and permanent modifications.

Procedures and work control documents will be reviewed to determine the adequacy of the performance and quality standards imposed by management.

Corrective action program activities including recent deficiencies and their resolution will be reviewed relative to human performance of maintenance personnel. Training activities will be evaluated for the use of remedial training in identified problem areas.

Maintenance rework history and tracking methodology will be reviewed to evaluate maintenance effectiveness.

Work control processes will be evaluated including pre-job activities, adequacy of maintenance planning and scheduling functions, emergent work controls, operations involvement, technical support interfaces, control of work impacting Technical Specifications LCOs, and adequacy of in-process and completed work.

The vendor and technical information program (VETIP) will be reviewed to assure that vendor information is current, available and being used by the plant staff, is properly reflected in maintenance activities.

The management of the preventive maintenance (PM) program will be evaluated to include the adequacy of preventive maintenance for safety related and important balance of plant systems, including conformance with vendor recommendations, adequacy of instructions to workers, management of PM scheduling and backlogs, handling of PM identified deficiencies, and the contribution of the PM to improved reliability.

Station problems related to surveillance testing including reportable events and deficiencies will be evaluated. Surveillance testing, post modification testing, and post maintenance testing will be evaluated for adequacy including scheduling and completion, organizational interfaces, adequacy of programs, procedures and their implementation, and conformance with the license and design bases. This will include review of the ISI/IST, 10 CFR 50, Appendix J, and other testing programs.

Utility self assessment activities will be reviewed for effectiveness including: QA audits and surveillances; management oversight of their own activities; formal and informal self-assessments done by work groups; third party or contractor technical evaluations and assessments.

3. **Engineering and Technical Support**

Engineering and technical support staffing levels, organizational responsibilities, and functional performance will be evaluated, including the effectiveness of support to operational activities, and management of engineering backlog.

System engineering functions will be evaluated including the effectiveness of field engineering activities; interfaces with operations, maintenance, and design engineering; involvement in corrective action processes; and application of sound safety and engineering principles to plant activities

The design change program will be reviewed to determine the effectiveness of the program and its controls.

The configuration control program will be evaluated for effectiveness including review of station information that indicates potential or actual program deficiencies.

The design basis reconstitution program will be reviewed with respect to program effectiveness including program status, schedule for completion, acceptability and use of program outputs, and how the design basis documents are used at the plant.

The drawing control program will be reviewed in conjunction with the reviews of the configuration control, design change, and other programs.

Plant temporary modifications will be evaluated for program adequacy and its implementation, tracking and management of temporary modifications, and conformance of temporary modifications with the licensing and design basis.

Engineering input to and involvement in Operability Determinations and Evaluations will be reviewed for adequacy.

Engineering input to and involvement in the safety evaluation program will be evaluated for adequacy.

Utility self assessment activities will be reviewed for effectiveness including: QA audits and surveillances; management oversight of their own activities; formal and informal self-assessments done by work groups; third party or contractor technical evaluations and assessments.

A vertical slice assessment of the shutdown cooling mode of the Residual Heat Removal System and portions of the Electrical Distribution System will be conducted consistent with NRC inspection guidance.

4. Management and Organization

Organization and staffing adequacy will be assessed in conjunction with other functional areas to review the effectiveness of site management to direct and manage site activities including planning, management processes, staffing, prioritization, and management direction.

The site and corporate communications and interfaces and the effectiveness of communication of NPPD goals and objectives to workers will be evaluated, including how safety goals and objectives and relevant management expectations are set and communicated.

The effectiveness of long range planning will be assessed by how improvement and strategic plans are being developed, monitored, results measured and effectiveness determined.

Management's attitude regarding nuclear safety will be evaluated by reviewing the conduct and output of the Site Operations Review Committee and the Safety Review and Audit Board and assessing the degree of safety consciousness, conservatism and urgency displayed in management's response to problems, and management's philosophy and expectations toward the importance of procedure adherence.

Assess management's oversight activities including their awareness of plant program effectiveness, plant status, and procedures; use of performance Indicators to monitor safety performance; presence in the plant, and self assessment activities.

The effectiveness of the corrective action program will be evaluated including the adequacy of program staffing and management, review of current and past condition reports, effectiveness of cause and failure analyses, corrective action status for recent events, corrective and preventive action backlogs, effectiveness of the human performance elements of the program, review of corrective action program effectiveness reviews, and review of program trend reports.

The industry operating experience review (OER) program will be evaluated including the effectiveness of program staffing and management, adequacy of the program's procedures, and the development and implementation of actions taken in response to the items. The evaluation will also include the use of OER information in the operations, maintenance, corrective action , system engineering, design engineering, and other processes.

Utility self assessment activities will be reviewed for effectiveness including: QA audits and surveillances; management oversight of their own activities; formal and informal self-assessments done by work groups; third party or contractor technical evaluations and assessments.

ATTACHMENT A

COOPER DIAGNOSTIC SELF ASSESSMENT TEAM

Team Manager - Ralph Beedle

Assistant Team Manager - Don Beckman (Consultant)
Administrative Assistant - Leslie McAtee

Operations and Training

1. Wade Warren - (Farley) Training
2. David Morris - (Clinton) Operations

Maintenance

1. Steve Verrochi - (Pilgrim) Mechanical Maintenance Supervisor
2. Rich Clemens - (Ft. Calhoun) Outage Director

Engineering

1. Gary Welsh - (INPO) Technical Support area
2. Bob Azzerello - (Waterford) Dir. Design Engineering
3. Dan Kimball - (Catawba) Operating Experience
4. Charlie Brooks - (INPO) Operating Experience
5. Joe Connolley - (Ft. Calhoun) Performance Engineering

Management and Organization

1. Jay Doering - (PECO) Dir. Strategic Planning
2. Steve Eisenhart - (VEPCO) Quality Assurance
3. Harry Kister - (Consultant)

RALPH E. BEEDLE

Ralph E. Beedle was the executive vice president, nuclear generation of the New York Power Authority from April 1991, to February 1994. Mr. Beedle, who joined the Power Authority's staff in 1985, was responsible for the operation of the James A. FitzPatrick and Indian Point 3 Nuclear Power Plants.

Mr. Beedle was employed by the Institute of Nuclear Power Operations (INPO) from 1983 to 1985 and was responsible for nuclear station management and operations evaluations.

During twenty-one years of service in the U.S. Navy, Mr. Beedle served in many shipboard positions including commanding officer and in staff positions reporting to senior Navy officials. In his last duty assignment to a group of officers personally selected by the Secretary of the Navy, he reported to the Chief of Naval Operations for studies conducted of military and naval strategy.

He graduated from the U.S. Naval Academy in 1962 with a Bachelor of Science in Engineering and completed the Navy Nuclear Power Program in 1963. Mr. Beedle received a Senior Reactor Operator Certification from the General Electric Corporation in 1985.

DONALD A. BECKMAN

Since 1982, Mr. Beckman has provided management and technical consulting services to the U.S. Nuclear Regulatory Commission, the U.S. Department of Energy, and various commercial nuclear generating stations. These services have included assessments and inspections, quality assurance program development and support, management program support and mentoring, and operational readiness planning.

From 1977-1982, Mr. Beckman held several positions with the USNRC Region I, including Chief, Plant Systems Section and Senior Resident Inspector at the Beaver Valley Power Station. Mr. Beckman was a startup and operations manager for Burns and Roe, Inc. from 1976-77. He was a Naval Reactors certified shift test engineer and Chief Test Engineer at Newport News Shipbuilding and Drydock Co. from 1971-76. From 1969-71, Mr. Beckman was a licensed operator, shift supervisor, health physicist, and engineering officer aboard the Nuclear Ship Savannah.

Mr. Beckman received a Bachelor of Science in Marine Engineering and a U.S. Coast Guard Marine Engineer's License from the U.S. Merchant Marine Academy in 1969.

WADE H. WARREN

Wade H. Warren is Technical Training Supervisor at Farley Nuclear Plant in Ashford, Alabama. He supervises the following technical training programs: General Employee, Engineering Support Personnel, Electrical Maintenance, Mechanical Maintenance, Health Physics, Chemistry Environmental, Instrumentation and Control, Fire Brigade, and Emergency Plan.

Mr. Warren has been employed by Farley Nuclear Plant for 14 years, serving in various capacities which include Operations Shift Supervisor, Safety Audit and Engineering Review, and Operations STA/Shift Foreman.

In 1979, Mr. Warren received his Master of Science degree in Physics from Auburn University, where he was also an instructor. He received a Bachelor of Science degree in Mathematics from University of Montevallo, Montevallo, Alabama.

DAVID R. MORRIS

David R. Morris has been Director of Nuclear assessment at Illinois Power Company since 1992. He is currently responsible for the assessment and auditing of station activities, including operations, maintenance, engineering and outages.

Mr. Morris has been with Illinois Power Company since 1984 and has served in many capacities, including INPO Loaned Employee - Senior Operations Evaluator for two years. While an INPO Loaned Employee, he was responsible for plant, simulator and outage evaluations, facilitating Senior Nuclear Plant Manager and Shift Supervisor Courses Operations Workshop speaker. While an employee of Illinois Power Company, Mr. Morris served as Director of Plant Operations, Director of Outage and Maintenance Programs, Director of Nuclear Planning, Scheduling, and Outage Maintenance, Project Manager of ASME Programs and Senior Consulting Engineer.

In 1973, Mr. Morris received a Bachelor of Science degree in Mechanical Engineering from Texas A-I University, Kingsville, Texas. For the next eleven years he served in officer positions aboard submarines and shore commands with the U.S. Navy Nuclear Power Program and was an Engineer Officer aboard the U.S.S. Indianapolis. In December, 1987, Mr. Morris received his SRO license for Clinton Power Station.

STEVEN VERROCHI

Steven Verrochi is Mechanical Maintenance Division Manager Pilgrim Nuclear Power Station. He is responsible for all mechanical maintenance with six supervisors as direct reports. In his seven years at Pilgrim Nuclear Power Station, he has also had experience in Operations, Maintenance Engineering, Maintenance Planning, Maintenance Programs and Reliability-centered Maintenance Development.

Mr. Verrochi had been assigned to INPO as a Boston Edison loaned employee, he has conducted evaluations of seven nuclear sites as a maintenance evaluator.

Mr. Verrochi served eight years as a Marine Engineer in charge of power plant operations and maintenance on merchant tanker vessels. He received a Bachelor of Science degree in Engineering from Massachusetts Maritime Academy.

Richard P. Clemens, PE

Richard Clemens is currently the Outage Director, Nuclear Operations Division at Fort Calhoun Nuclear Station in Fort Calhoun, Nebraska. His responsibilities include the planning, preparation, scheduling and management of all planned and forced outages. Mr. Clemens manages a staff of 10 direct reports and over 1000 indirect reports (including engineering craft and administrative personnel) during refueling outages.

Mr. Clemens has held several positions at Fort Calhoun since he began working there in May of 1981. Those positions include Supervisor - Simulator Services, Nuclear Operations Division and Supervisor - Electrical/I&C Engineering; Production Engineering Division, Design Engineering - Nuclear.

In 1981, Mr. Clemens received his Bachelor of Science in Electrical Engineering from the University of Nebraska.

GARY WELSH

Mr. Welsh has been with INPO since November, 1985. He has participated in approximately 35 INPO plant evaluations and 20 INPO corporate evaluations. He was Assistant Manager of Nuclear Station Engineering at the Clinton Power Station for over a year as an INPO reverse loanee.

Prior to joining INPO, Mr. Welsh was QA Engineering Support Supervisor at E.I. Hatch Nuclear Plant for approximately two and one-half years. In this capacity, he was responsible for QA oversight of the Hatch 2 recirculation pipe replacement project and was certified as a Lead Auditor. Prior to his QA assignment, he was a design engineer in the Georgia Power Power Supply Engineering and Services Department, responsible for various modification activities on fossil and hydroelectric power stations, as well as temporary assignments supplementing the staff at E.I. Hatch during outage periods. During these outage periods, he performed analyses on pipe supports, served as a plant modifications and testing engineer, and served as a lead coordinator and contract administrator for the torus modifications on both units at Hatch.

Mr. Welsh has received a Senior Reactor Operator's Certification on a Combustion Engineering unit and is a registered professional engineer in the state of Georgia.

ROBERT G. AZZARELLO

Robert G. Azzarello has been the Director of Design Engineering at Waterford 3 since April, 1991. His responsibilities include design engineering, design control, engineering studies, EQ, procurement engineering, UNID system, ISI program, NPRDS, and SIMS data base maintenance, thermal hydraulic and reload analyses, PRA and 50.59 safety analysis.

Mr. Azzarello was Engineering and Construction Manager for Entergy Operations, Inc. - Waterford 3 from June, 1989, to April, 1991. This position included the additional responsibilities of plant construction and maintenance activities and design change project control.

August, 1988, to June, 1989, Mr. Azzarello was Modification Controls Manager at Louisiana Power & Light - Waterford 3. He was responsible for the plant modification budget, the overall modification process including project initiation, design, implementation, and closeout, and the scheduling and estimating of all modifications. In addition, Mr. Azzarello was Manager of Electrical/Controls from May, 1987, to August, 1988. He was able to direct the I & C and Electrical engineering services in support of the plant including station modifications, engineering requests, and licensing.

Mr. Azzarello received a Bachelor of Science in Engineering (Electrical Option) in 1973 and is a Registered Profession Engineer in the state of Louisiana.

DANIEL P. KIMBALL

Daniel P. Kimball is currently the manager of the Catawba Safety Review Group (CSRG), which is responsible for independent assessment of site operations and administration of the site corrective action program, including trend analysis and Human Performance Enhancement System. The CSRG also determines the need for operability and reportability of site problems and investigates, determines root cause, and issues site Licensee Event Reports (LERS).

Prior to 1992, Mr. Kimball was Integrated Scheduling Manager, Lead Shift Manager, Engineer in Operations, Electrical Startup Engineer and Electrical/I&C startup coordinator at Catawba.

Mr. Kimball received his Bachelor of Science degree in Engineering Analysis and Design from University of North Carolina at Charlotte in 1977. He also held a Senior Reactor Operator License at Catawba Nuclear station from 1983 through 1991.

CHARLES R. BROOKS

Charles R. Brooks has been with INPO since May, 1991. He screens reports of plant events for significance and drafts documents that disseminate important lessons learned from these events to the industry. He conducts plant evaluations in the operating experience area.

Mr. Brooks was employed by the U.S. Department of Energy, Savannah River Site, at various positions including Branch Chief for Safety Oversight Division and Director, Reactor Engineering Division - Special Projects office.

During four and a half years of service with the U.S. Nuclear Regulatory Commission as a resident inspector at Browns Ferry Nuclear Plant, Mr. Brooks also participated in inspections at Brunswick, Grand Gulf, Catawba, Watts bar, Sequoyah, Turkey Point, Farley, and Hatch.

He graduated cum laude from the University of Alabama with a Bachelor of Science in Chemical Engineering in 1977. In addition, Mr. Brooks has received SRO Certification, Human Performance Enhancement System Training and Management Oversight and Risk Tree (MORT).

JOSEPH L. CONNOLLEY

Mr. Connolley has been the Lead Test and Performance Engineer for the System Engineering Department of Omaha Public Power District Fort Calhoun Nuclear Station since 1991. He provides support to Operations, Maintenance, and System Engineering through various programs, including Steam Cycle Thermal Performance, Predictive Maintenance, Surveillance Test Program, System Performance Monitoring, Performance Indicators, and NPRDS.

Mr. Connolley was a System Engineer for Engineered Safety Features (ESF) System, OPPD Fort Calhoun Station from 1989 to 1991. He was responsible for all aspects of ESF System availability, reliability, maintenance, modifications, and testing.

From 1986 to 1988 Mr. Connolley served as Senior Electrical Engineering Consultant and finally as chief Electrical Engineer for Applied Power Associates, Inc. in Omaha, Nebraska. As Chief Electrical Engineer, he was responsible for all activities of the Electrical Engineering Department, including project management and overall direction of electrical projects from initial development to installation. While he was Senior Electrical Engineering Consultant, Mr. Connolley prepared Instrumentation and Control Special Test Procedure for Emergency Diesel Generator Control System, Nebraska Public Power District.

In 1974, Mr. Connolley received a Bachelor of Science degree from the University of Nebraska. He is a Registered Professional Engineer in Nebraska and Kansas.

JOHN DOERING JR.

John Doering is the Chairman of the PECO Energy Company Offsite Review Committee. He is also the Director of Strategic Planning for the Nuclear Generation Group. His responsibilities include leading the over sight function for Peach Bottom and Limerick stations and the corporate support function. As strategy Director he manages the formulation and execution of strategy for PECO Nuclear. He has held this position for one year.

Prior to his present assignment, Mr. Doering was Plant Manager at the Limerick Generating Station. He held this position since 1990 following two decades of experience in nuclear operations, start-up, engineering, maintenance, and support services. He has held NRC Senior Reactor Operators licenses at both Limerick and Peach Bottom.

Mr. Doering has participated in a number of industry initiatives and committees and he has presented papers covering topics including management of plant operations, operation of off gas systems, and ware house inventory selection strategy. He was an early participant with the BWR Owners Group in the development of symptomatic emergency procedures. His involvement with INPO has included participation as a peer evaluator for operations, attendance at the Senior Plant Managers Course and Mentor for the Shift Supervisor course. He conducted an operational readiness for restart assessment of the Shoreham station and was a member of the Peach Bottom Restart Over Sight Committee.

Mr. Doering is a 1965 graduate of the University of Pennsylvania with a Bachelor of Science degree in Mechanical Engineering. He served in the U.S. Navy from 1965 to 1970.

STEPHEN B. EISENHART

Stephen Eisenhart is presently employed at Virginia Power, as Nuclear Specialist assigned to the Quality Assurance group in an advisory capacity to the Manager of Quality Assurance to enhance oversight functions.

Mr. Eisenhart has been employed by Virginia Power Since 1973 in various capacities which include Senior Staff Engineer and Corporate Nuclear Safety Review. In October of 1993, he completed qualification as an evaluator in Operating Experience, O & A and as and Assistant Team Manager with INPO.

Mr. Eisenhart served six years in the U.S. Navy in the Nuclear Power Program as Engineering Watch Supervisor.

HARRY B. KISTER

Mr. Kister brings extensive regulatory, assessment and management consulting experience to the Cooper Nuclear Station Diagnostic Self Assessment Team. Most recently, he assisted Palisades Nuclear Station in preparing for an NRC DET and participated as the single consultant member of a Commonwealth Edison sponsored Self Assessment team at LaSalle. The level of effort was similar to an NRC Diagnostic Evaluation. In this role he was responsible for assessing the station management and organization function and charged with summarizing the management effectiveness issues that rolled out the functional area assessments.

Previously Mr. Kister served as an advisor to CECO's Quad Cities Business Development Team which was formed to assist CECO management in preparing for an NRC Diagnostic Evaluation. He has performed in similar consultant roles at CECO's Dresden and Zion Nuclear Stations, Niagara Mohawk's Nine Mile Point Station, Philadelphia Electric's Peach Bottom Station, and at Carolina Power and Light's Brunswick Station. He has also served as a consultant for the NRC on Team inspections at Washington Public Power's WNP-2, Indian Point Unit 3 and at Brown's Ferry Unit 2.

Prior to his consultant role, he served with the Nuclear Regulatory Commission for 12 years, both in Region I as a Projects Branch Chief, and in Region III as a Project Inspector. Mr. Kister also served as a Senior Start Up Engineer with Bechtel Power Corporation at Rancho Seco, and as a Senior Manager in the Mare Island Naval Shipyard's nuclear submarine and surface ship programs.