Nebraska Public Power District

COOPER NUCLEAR STATION
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NLS9400026
August 8, 1994

Mr. L. J. Callan
Regional Administrator
NRC Region IV
611 Ryan Plaza Drive
Suite 400
Arlington, Texas 76011

Subject: Response to Request for Additional Information
Cooper Nuclear Station
Docket No. 50-298, DPR-46

References: 1. Confirmatory Action Letter (Revision 2) dated July 1, 1994 to Guy R. Horn - Nebraska Public Power District (CAL 4-94-06B).

2. Letter from G. R. Horn (NPPD) to L. J. Callan (NRC) dated July 29, 1994, "Response to Confirmatory Action Letter."

3. Meeting Between Nebraska Public Power District and the Nuclear Regulatory Commission on July 29, 1994, concerning restart readiness.

4. Confirmatory Action Letter Dated August 2, 1994, to Guy R. Horn - Nebraska Public Power District (CAL 4-94-08).

Dear Mr. Callan:

On July 1, 1994, Confirmatory Action Letter 4-94-06B was issued which verified, among other things, that Nebraska Public Power District (the District) would provide the Nuclear Regulatory Commission (NRC) Region IV office with a letter that discussed eight areas of interest.

On July 29, 1994, the District provided the letter to the NRC and participated in a meeting with the NRC to discuss plant restart. With these two activities completed, all items in CAL 4-94-06B that were agreed upon as a precursor to plant restart were satisfied. However, at this meeting, the NRC requested additional, more detailed information regarding the District's component and system preconditioning policy, and its relationship to the implementation of testing programs. The NRC also requested, prior to restart, that the District document some of the detailed discussions held during the meeting and, in some cases, provide more detailed information on how reviews addressed in the July 29, 1994, letter were conducted. Attachment 1 to this letter provides the detailed information.

On August 2, 1994, the NRC issued CAL 4-94-08, which requested that (as a supplement to the CAL 4-94-06B response) the District describe its basis for concluding that an adequate review of Cooper Station operational experience,

industry experience, and NRC information has been conducted to support plant restart. The NRC requested that the District's discussion also address two recent cases where previous District reviews apparently did not address certain precursor information. Attachment 2 to this letter provides this information. The NRC requested that all of the above information be provided before plant restart and that the information be discussed at a public meeting, currently scheduled for August 12, 1994, at the Cooper Station.

All of the District's activities, collectively considered, represent an extensive amount of work aimed at confirming that there are no significant issues at the Cooper Station which would warrant continued plant shutdown. The District has been very responsive to NRC concerns and often has conducted investigations that typically would not be considered a condition for plant restart. The District acknowledges that some of its reviews (e.g., Operating Experience Reviews) may not have identified all issues. Although some investigations are ongoing, the District does not anticipate that its continuing efforts will uncover deficiencies that have a significant impact on public health and safety. If any safety significant findings occur, the District will take appropriate actions up to and including plant shutdown, if necessary. Of course, further evaluations will be conducted as soon as possible, consistent with schedules discussed with the NRC.

If there are any questions regarding information presented in the attachments, or on other matters, please call.

Sincerely,

G. R. Horn
Vice President, Nuclear

RCG/nr

Attachments

cc: U.S. Nuclear Regulatory Commission w/attachments
Attention: Document Control Desk

NRC Resident Inspector Office w/attachments
Cooper Nuclear Station

NPG Distribution w/attachments

ATTACHMENT 1

A. DETAILED DISCUSSION OF INITIATIVES

Recent events at Cooper Nuclear Station (CNS) prompted several District initiatives to determine the scope of the equipment and process deficiencies that exist at the Cooper Station. Many of the actions taken to correct immediate deficiencies have been detailed in meetings and/or other correspondence with the NRC. While there may be several ways to perform reviews of issues, the District is confident that its approach is satisfactory for determining restart readiness. The following section details actions taken by the District.

1. CONFIGURATION CONTROL - CABLE TIE

The District concludes that the following actions represent a comprehensive investigation of the cable tie issue and should prevent recurrence of similar deficiencies. The District took the following actions to determine the scope of the problem and to correct any actual or incipient configuration control deficiencies.

First, a walkdown was conducted to verify that no similar cable tie installations were in place. None were found. The next step was to review station mechanical and electrical maintenance procedures; surveillance procedures in the chemistry, operations, and instrument and control areas; and the 14.x series instrument and control procedures, to ensure that configuration control had been maintained. Three mechanical procedures and fifteen electrical procedures required revision, along with three minor discrepancies in the operations and instrument and control procedures. No discrepancies were identified in the chemistry procedures. The above listed items will be corrected prior to next use of the procedure and do not adversely impact restart of the plant.

Concurrent with these activities, field walkdowns were performed to look for deficiencies that could have been created as a result of using the deficient procedures. No equipment configuration discrepancies were found. Based on these activities it was reasonably concluded that the cable tie condition was limited to the example identified.

To ensure that configuration control continues to be procedurally maintained, a revision has been made to Maintenance Work Practice (MWP) 5.0.4 to add guidance to further ensure that any impairments, changes, or blocking devices installed during performance of maintenance are removed prior to completion of the procedure. Also, management has held meetings with maintenance personnel to emphasize expectations with regard to configuration control, procedure compliance, and immediate correction of ambiguous or incomplete procedures. Additional meetings will be held to ensure that sensitivity to this issue continues.

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2. LOGIC SYSTEM FUNCTIONAL TESTING

The activities summarized below provide adequate assurance that logic system functional testing at Cooper Station is adequate. This concern evolved as a result of the discovery of the RHR Service Water Booster pump contacts that had not been tested. The process utilized for this issue is described below:

When the District discovered that contacts had not been tested as required, a review of the following systems was begun:

High Pressure Coolant Injection	Standby Gas Treatment
Reactor Core Isolation Cooling	Reactor Building HVAC
Reactor Protection	Diesel Generator HVAC
Control Room HVAC	Reactor Equipment Cooling
Residual Heat Removal	Core Spray
Alternate Rod Insertion	Fire Protection
Service Water	Low-Low Set
Automatic Depressurization	Diesel Generator Lube Oil
Standby Liquid Control	Diesel Generator Auto Start
Diesel Generator Fuel Oil	Primary Containment Isolation (Gr 1-7)
Diesel Generator Starting Air	Anticipated Transient w/o Scram

The elementary logic diagrams for each system were reviewed, contact by contact, and correlated against the existing surveillances. The screening methodology was as follows:

a. Does an existing surveillance actually verify the operation of the contact directly? If yes, then no further action is necessary. If no, then proceed to b.

b. Does the contact perform an automatic essential function as determined by an engineering review of the Technical Specifications and the USAR? If yes, then test prior to startup. If no, test after startup.

This review was completed on June 5, 1994, and testing commenced. In mid-July, due to a question concerning the LOCA signal auto close contacts for the Core Spray full flow test valves (which had been scheduled for post startup testing), a re-review of the post startup population of contacts was directed by senior management using this additional criterion:

Is the contact operationally significant (i.e., interlock that prevents an operator error) and not verified by existing testing? If yes, then test before startup. If no, then test after startup.

The second screen was completed on July 18, 1994. All contacts have been satisfactorily tested. A plan will be generated to address contacts requiring testing after startup.

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3. SURVEILLANCE REVIEW

The District concludes that the following activities adequately determined the extent of the surveillance deficiency revealed by the undervoltage and load shed testing inadequacies. A team of experienced Senior Licensed Operators reviewed the CNS Technical Specifications, USAR, and surveillance programs to identify any weaknesses or discrepancies. The major components (i.e., pumps and valves) of the following systems were reviewed: High Pressure Coolant Injection, Reactor Core Isolation Cooling, Residual Heat Removal (Low Pressure Coolant Injection mode), Core Spray, Automatic Depressurization, and Emergency Diesel Generators.

The review was performed as follows:

- An existing cross reference between Technical Specifications and surveillance procedures, which is maintained by the Surveillance Coordinator, was independently reviewed for correctness.

- The Technical Specification surveillance requirements were reviewed against the respective surveillance procedures to determine if the requirements were being met.

- USAR sections describing the six systems were reviewed to determine if the USAR requirements were being met by the surveillance.

The above reviews represent a significant undertaking by District personnel in a short period of time (July 2 to July 5, 1994). Reviewers developed a list of questions/discrepancies which was assigned to the appropriate departments (engineering, maintenance, etc.) for resolution. The discrepancies have been evaluated and incorporated into surveillance procedures, or corrected by USAR revisions. Additionally, the Design Basis Reconstitution Project will be accelerated and will include a review of surveillance testing adequacy for all systems in the project.

Based on the above reviews, the District has reasonable assurance that surveillance procedures adequately implement regulatory requirements.

4. DESIGN BASIS REVIEW OF THE ELECTRICAL DISTRIBUTION SYSTEM

While the reviews of various specific items were addressing individual concerns, the District determined that a comprehensive evaluation of the entire system should be performed to ensure that the problems were not endemic. As a secondary matter, this review also would address the adequacy of implementation of the Operating Experience Review (OER) program. This effort has received additional scrutiny because of its failure to adequately address the Westinghouse DB 50 breaker issue. The Electrical Distribution System (EDS) (AC Distribution, DC Distribution, and the Emergency Diesel Generators) was chosen because many of the recent problems appeared to affect electrical components and testing, and because of this system's critical nature. The investigation concluded that EDS components would have performed their intended safety function.

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Starting on July 19, 1994, a multi-discipline integrated review of the EDS was performed. The team consisted of personnel from the Engineering Department and Senior Reactor Operators. This review utilized design criteria documents (DCD) and evaluated the actual requirements at not only the systems level, but also at the component level. Included in these system level and component level reviews were support systems such as DG fuel oil, HVAC, DG lube oil, etc. Each of the commitments affecting testing or plant safety was reviewed to determine if they were adequately met. The initial review of the DCDs resulted in 49 questions requiring further evaluation and were investigated by Design Engineering, System Engineering, Operations Engineering, Configuration Management, or Operations Support Group. All of these items have been addressed. The review was completed on July 28, 1994.

B. ADDITIONAL DISTRICT REVIEWS

While the actions taken as a result of the technical issues that arose during the current shutdown provide some assurance that systems and components required for plant operation will function as required, the District concluded that additional reviews were warranted before startup. Therefore, the following actions have been taken:

1. OPERATING EXPERIENCE REVIEW

In 1993, the District recognized that its Operating Experience Review (OER) Program must be improved. This effort began in September 1993. The 1993 program began with a review by the Corrective Action Program Overview Group (CAPOG) of twenty percent of approximately two years of operating experience documents. On December 1, 1993, due to approximately a ten percent rejection of OER assessments, the sample size was expanded by another twenty percent. As discussed further in Attachment 3, the SBM switch and REC corrosion-related correspondence were not in the CAPOG sample population. Again, CAPOG re-reviews were a sampling effort that was not intended to assess all OER closeout documentation. Therefore, the fact that these issues were not satisfactorily closed was not fostered by 1993 OER oversight efforts.

However, due to the failure of the 480 VAC undervoltage trip devices, the District has commenced an additional pre-startup review of closed OER information. The scope of this review covers all closed OER responses for the years 1992, 1993, and 1994, all closed pre-1987, and 25% of 1987-1991 responses. The 1992-1994 period was chosen to validate the adequacy of the current program and represents approximately 25% of the entire historical database. A 100% review of the pre-1987 period was chosen because there was an apparent lack of formality in the program at that time. A 25% sample of the 1987-1991 population was chosen to provide assurance of program adequacy after it was formalized in 1987. This recent limited review provides a reasonable basis for the District's

conclusion that the OER program has not overlooked issues that have a significant impact on plant safety. The screening criteria used during this review are as follows:

- The item could adversely affect nuclear safety.
- The item is needed to comply with the CNS Technical Specifications.
- The consequences of not completing the OER action could affect the ability of a safety system to satisfy its design function.
- The consequences of not completing the OER action could result in reduced safety system availability.

The closure documentation for items meeting the screening criteria are then reviewed for adequacy. If the basis for closure does not appear fully adequate, the item will be re-reviewed by NPPD engineering. CNS management will determine if pre-startup actions are required for any inadequate responses as determined by engineering. If an item does not satisfy the above criteria, it is assumed that the previous review, if inadequate, would not have a significant safety impact.

Approximately 14% of the pre-1987 items, approximately 6% of the 1987 - 1991 items, and approximately 0.4% of the post 1991 items (2 out of 552) have been returned for review of response adequacy.

A full review of the OER database responses for adequacy will be performed with an estimated completion time of 2 years.

The LER database also is being screened to identify recurring issues. Recurrence of the same or similar issues is indicative of a potentially inadequate corrective action. Those items found by the screening will be evaluated against the criteria defined above to determine if corrective action review is required prior to startup and CNS management will determine if any followup corrective actions will be required prior to startup. The remaining items will be reviewed after startup and the need for further action determined.

2. ASSESSMENT OF COMMUNICATION EFFECTIVENESS

Recent events at CNS have shown that additional efforts are necessary to ensure that everyone understands management expectations, especially for those issues that have been named as causes of recently discovered deficiencies, e.g., procedure use, preconditioning, and importance of problem identification. Since the maintenance organization also has been involved in several recent findings, additional management meetings have been held with the maintenance staff to discuss issues and to communicate expectations.

To reenforce the expectations expressed in the management meetings, the Site Manager issued a memorandum to the site dated July 29, 1994. This memorandum specifically addressed preconditioning of components for the purpose of passing

surveillance tests, maintaining a questioning attitude, and the importance of clear and precise communication.

Independent of the above, from July 30, 1994, to August 1, 1994, the QA Division conducted a series of interviews with maintenance, operations, instrumentation and control, and chemistry to assess the state of understanding and acceptance of management's expectations. A specific list of questions covering procedural adherence, preconditioning, and identification and reporting of deficiencies was used. The following discussion provides a summary of the QA effort.

Preconditioning

The interviews had mixed results. For example, within the areas explored, management has been effective in communicating its expectations to NPG personnel with one notable exception. While over 93% (222 of 238) of personnel interviewed had an acceptable understanding of what constitutes preconditioning, 45% (107 of 238) did not clearly understand the importance of not preconditioning. The majority of these personnel discussed the effects on as-found readings, the ability to accurately identify problems or the inability to trend problems. While these are also important factors, the key issue of functionality does not appear to have been adequately communicated and/or absorbed. It appears that this lack of full understanding is the result of inadequate training on the subject.

CNS management is currently evaluating appropriate ways to expand preconditioning training to ensure complete understanding of the policy by all personnel.

Procedure Adherence

Interview results indicate that there is a very good understanding of management's expectations throughout the Nuclear Power Group. Virtually every individual interviewed clearly understood both the need for procedural use and compliance, as well as the need to question the adequacy of the procedures and instructions they use as part of their daily routine. Fifteen percent of interviewees, however, expressed that they did not fully understand management's expectations, many because the expectations were changing so rapidly, it was difficult to definitively state that they were understood. This is an understandable reaction to the many recent culture improvement initiatives. Through continued management reenforcement of expectations, this concern will dissipate.

Problem Identification

The interview results indicate that management has been very effective in communicating expectations in this area. Virtually all of those interviewed expressed a clear understanding of their responsibility to identify and document problems and concerns to ensure that they are corrected. However, management is concerned that interviews also indicated that several individuals are reluctant and/or uncomfortable with escalating problems that they did not feel had been resolved to their satisfaction. In this regard, reluctance by one individual is too many. Therefore, management will be increasing its focus on this aspect of problem identification.

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3. STARTUP AND POWER ASCENSION MANAGEMENT PLAN

Cooper Nuclear Station has developed a Startup and Power Ascension Management Plan to ensure that plant equipment, personnel performance, and organizational responsiveness are ready to support a safe and reliable plant startup and ascension to full power operation. A copy of this plan is provided (for information) as Attachment 3. The District does not anticipate forwarding subsequent revisions to the NRC. The Plan's purpose will be accomplished through the following objectives:

- Assign temporary positions and responsibilities to provide accountability and clear lines of responsibility during the startup and power ascension process.
- Establish communication paths to ensure accurate and timely transfer of information to support startup and power ascension.
- Describe outage activities to ensure completion of work supports a safe startup.
- Resolve emergent issues in a timely manner so safe startup and power ascension are not impeded.
- Conduct startup and surveillance testing in a safe and efficient manner to ensure that system and component operability support startup and power ascension

Two aspects of the plan are of special interest. First, each system engineer will review open items for his or her system to ensure there are no unresolved items which may impact that system. Open items for review include (among others) operating experience reviews, maintenance work requests, and temporary conditions. The completion of this review will be certified by the system engineer and reviewed by management.

Second, the manager of each station department will review open action items, condition reports, training, etc., to ensure that his department is ready to support startup and plant operation. As with the system engineer, the completion of the review will be certified by the department manager and reviewed by senior management.

Any item that meets one or more of the following criteria must be addressed prior to startup:

- The item could affect nuclear safety.
- The item is necessary for a safety system to satisfy its design function.
- The item is needed to comply with the CNS Technical Specifications.
- The item may result in reduced safety system availability, increased forced outage rate, or reduced capacity factor in the time before it is completed or resolved.

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4. FIELD COACHING TEAM

Obtaining prompt and precise feedback on performance in the field has been a problem at Cooper Station. This has occurred in great part because effective communication methods to ensure that this information exchange occurred did not exist in all areas. To remedy this deficiency for the short term, CNS has established a multi-disciplined team of CNS personnel headed by an independent manager charged with monitoring operations, maintenance, and surveillance testing in the field to ensure management requirements for proper testing and maintenance are understood and executed.

Charter

A charter has been written for this Field Coaching Team (FCT) which establishes specific criteria for observation and evaluation of field activities. At a minimum, the FCT team will observe adherence to procedures, identification and resolution of procedural inadequacies, awareness of any potential for a process or activity to contribute to preconditioning, demonstration of effective communication, and the performance of work in a safe and quality manner.

Scope

This process will focus at a minimum on:

- Adherence to procedures/instructions.
- Identification and resolution of procedure/instruction problems and inadequacies.
- Identification and resolution of any potential preconditioning problem.
- Identification and resolution of ineffective communication.
- Ensuring effective utilization of resources to accomplish tasks safely and with quality results.
- Insuring any perceived schedule pressure is corrected.
- Insuring identification of problems and generation of CRs when appropriate.
- Application and consistent use of self-checking.
- Supervisory involvement in field activities.

Process

FCT personnel will be provided with orientation training by the Site Manager to ensure that they fully understand management expectations. Once trained, team members will disperse into the field, making their presence and function known to all personnel engaged in an observed activity. At no time will the team

subvert the role of line management -- in fact, they will serve as augmentation to line management's ability to observe and correct inappropriate practices. Specific techniques for assessment will be as dictated by the activity being observed, with appropriate consideration to the level of intrusiveness necessary to fulfill the objective and purpose of the FCT process. The District currently anticipates that the FCT team will observe pre-startup testing, and startup and power ascension testing. Once the startup and power ascension is complete, the team will remain in place to observe field activities until its purpose has been fulfilled.

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SBM Switches and Reactor Equipment Cooling Piping

As noted in Attachment 1, the 1993 OER review effort established a screening criteria for determining which findings required additional focus. This effort utilized a sampling approach to determine with reasonable assurance that previous OER efforts were satisfactory. Results of an assessment of the 1993 reviews could fall in one of three primary categories: (1) the components were not part of the sample group and therefore, the District's re-review did not directly miss potential safety issues, (2) the components were reviewed by the District as part of its sampling effort and it was reasonably concluded that the issues had been adequately addressed, or (3) the components were reviewed by the District as part of its sampling effort and it was erroneously concluded that the issues had been adequately addressed.

A review was performed to determine whether the SBM switches and REC issues had been specifically assessed by the OER review. Neither the SBM switches nor the REC issues were included in the sampling review. Therefore, it is reasonable to conclude, based on current findings, that these previous reviews were adequate. This conclusion, however, should not be considered an excuse for not identifying the SBM switch and REC issues. Proper questioning attitudes should have led to further discussion and satisfactory resolution of these issues. Notwithstanding these conclusions, the District assessed the potential safety significance of SBM switch failures and the REC System. A brief summary of safety significance conclusions is provided below.

SBM Switches

A review of SBM switch operating history at CNS illustrates that since GE SIL 155, "Possible Failures of Type SBM Control Switches," recommended inspection and refurbishment of the switches in 1980, there have been two switch failures (February 1989 and July 1994) due to the phenomenon described in the SIL. Seven additional switches with broken cam followers have been observed. However, this condition did not result in switch failure and none of the failures or cracks have occurred in switches refurbished in 1980.

During recent inspections a majority of switches not refurbished in 1980, had one or more cam followers categorized as "Category B" per GE SIL 155. However, this status is not considered a failure. GE does not recommend these switches be replaced and has conducted testing that shows approximately 45,000 successful switch cycles can be expected before switch failure. Therefore, the Category B switches are expected to perform upon demand. However, the District will establish a replacement protocol for the pre-1976 switches.

With approximately 140 installed essential switches and 14 years of operating experience since switch refurbishment, two switch failures equals a failure rate of 0.001 failures per year or approximately one switch failure every eight years. Additionally, industry experience (as evidenced by industry data base searches) indicates an extremely reliable switch operating history.

The District evaluated whether any safety functions would have been defeated had the switch failures occurred during a design basis accident. In summary, no safety functions would have been adversely impacted. This is due primarily to

ATTACHMENT 2

a combination of design redundancy in the switch contacts and components that are not required to change position to perform their intended safety function.

REC System

On July 29, 1994, a pinhole leak was discovered in a 12 inch non-essential REC weld. A section of the weld containing the flaw was sent to General Electric for metallurgical examination. The examination determined that Intergranular Stress Corrosion Cracking (IGSCC) was the most likely cause. The root cause was then determined to be nitrite induced cracking similar to that experienced in 1979 and 1980 at CNS. Subsequently, a second leak was found in a 6 inch section of non-essential piping.

An inspection program was initiated using the methodology defined in NCIG-02 (revision 2), "Visual Weld Acceptance Criteria, Volume 2: Sampling Plan for Visual Reinspection of Welds." The scope of the inspection eventually encompassed Ultrasonic Testing (UT) of 117 welds in the essential portions of the system piping. Of the 117 welds examined, 5 were found to have crack-like indications. Of the 5 welds with indications, 4 were acceptable per IWB-3600. All 5 welds will be repaired prior to startup. The remaining 112 welds had no crack indications.

The District also has performed a preliminary safety assessment of the as-found condition of the REC system. Of the 5 flaws found, 4 were acceptable per IWB-3600 and did not represent a threat to piping integrity. The remaining indication was within the critical flaw size and therefore, had it continued to propagate, would have leaked before the structural integrity decreased below acceptable limits. The non-essential portions of the piping perform no safety function and are isolated on a design basis event.

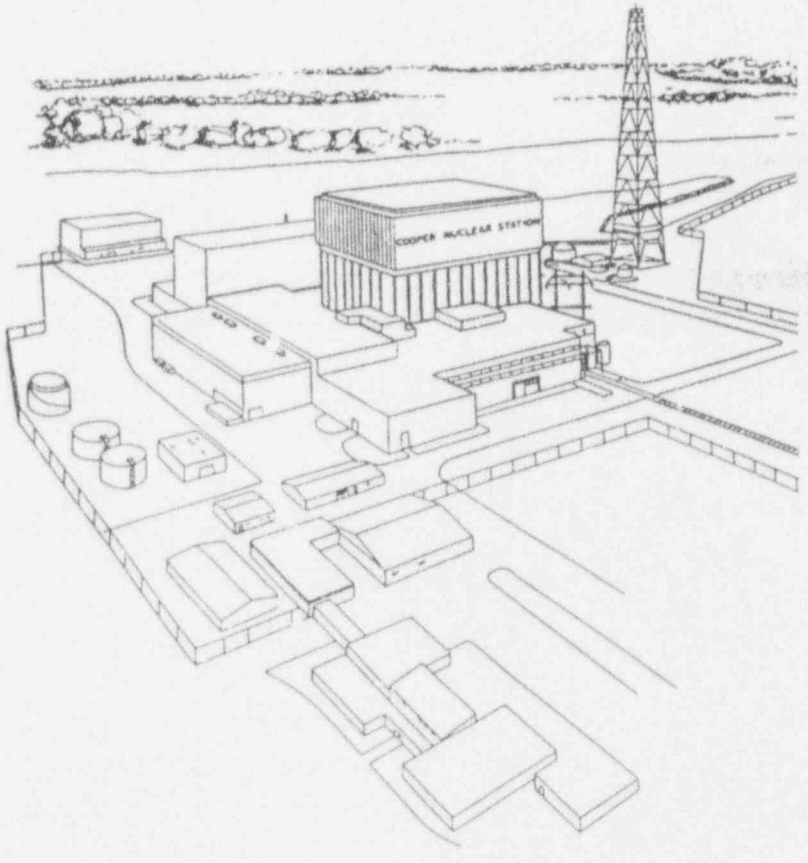
The only other safety related system in which nitrites are or were used is the Diesel Generator Jacket Water System. The use of nitrites as a corrosion inhibitor in diesel generator jacket cooling water is common industry practice. Per the Cooper-Bessemer "Model KSV Emergency Diesel Generator Lubricating Oil and Jacket Water Analysis Guidelines," (Revision 1 dated 1993), a nitrite based corrosion inhibitor program is recommended. Eight of nine current owners follow this recommendation. No leaks have occurred due to cracking in the Diesel Generator Jacket Water System at CNS and Cooper-Bessemer has no history of jacket water leakage as a result of nitrite use.

ATTACHMENT 3
NLS940026
August 8, 1994

COOPER NUCLEAR STATION

STARTUP AND POWER ASCENSION PLAN

(SHUTDOWN 94-03)



Nebraska Public Power District

Powerful Pride in Nebraska

COOPER NUCLEAR STATION

STARTUP AND POWER ASCENSION PLAN

Revision 1

APPROVED BY:

Plant Manager — Date: 8/2/94

Site Manager — Date: 8/2/94

STARTUP AND POWER ASCENSION PLAN

PREPARED BY: Jeff Boyd
Ed Jackson
Jodie Knapp
Wayne McKinzey

SUBMITTED:

8/2/94

Senior Manager Site Support — Date

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* NOTE: Final revision will be provided within 24 hours preceding plant startup.

1. PURPOSE

The purpose of this document is to establish Management's expectations for ensuring the safe and controlled return to service of Cooper Nuclear Station from shutdown 94-03 that commenced May 25, 1994. This will be accomplished through the following objectives:

- Assign temporary positions and responsibilities to provide accountability and lines of responsibility during the startup and power ascension.
- Establish communication paths to ensure accurate and timely transfer of information to support the startup and power ascension.
- Describe outage activities to ensure completion of work supports a safe startup.
- Resolve emergent issues in a timely manner so safe startup and power ascension are not impeded.
- Conduct startup and surveillance testing in a safe and efficient manner to ensure that system and component operability support startup and power ascension.

2. SCOPE

This plan addresses the activities performed to ensure that plant operation, material condition, personnel performance, organizational responsiveness, and the functioning of administrative and work control processes are fully ready for a safe and reliable startup. The development and approval of this plan are part of the criteria on which the evaluation for startup is based. This plan consists of the following major elements:

- Startup Organization
- Outage Activities
- Startup Overview

3. REFERENCES

3.1 C.O.P. 2.0.1.1, Conduct of Infrequently Performed Tests or Evolutions

3.2 G.O.P. 2.1.1, Startup Procedure

3.3 G.O.P. 2.1.1.1, Plant Startup Review and Authorization

3.4 CNS Procedure 0.2, Station Organization and Responsibility

3.5 S.O.P. 2.2.28.1, Feedwater System Operation

4. STARTUP ORGANIZATION

This section describes the additional staffing (Attachment 1), their responsibilities, and the lines of communication used during preparations for and the conduct of startup and power ascension. As a minimum, the staffing shall be available from the time the Reactor Mode Switch is placed in the "Start & Hot Standby" position until the second Reactor Feed Pump is in service (Ref. 3.5). The staffing can be established prior to startup to develop the startup schedule and make startup preparations.

4.1. MANAGEMENT OVERSIGHT

The Management Representative is an experienced NPG Manager assigned on-shift to provide 24 hour coverage throughout startup and power ascension. He is responsible for maintaining an overall perspective of the startup process. Should any significant restraints or potential schedule impacts be encountered, he shall be informed. Additional responsibilities include but are not limited to:

- Ensuring plant personnel are aware of Management's expectations on the importance of open, two-way communication.
- Fostering and supporting our questioning attitude by ensuring concerns expressed by plant personnel are acknowledged and addressed in a timely manner.
- Allocating personnel and resources as needed.
- Apprising the Plant Manager of all off-normal and emerging issues that may impact plant startup and power ascension.
- Overseeing implementation of this plan.

4.2 NORMAL STAFF AUGMENTATION

4.2.1 Operations Department

4.2.1.1 Operations Management Representative

The Operations Management Representative is an experienced individual from Operations line management assigned on-shift (Ref 3.2) to provide continuous operations management representation and presence during the startup and power ascension. His primary function is to ensure that the exercise of command and control authority by the Shift Supervisor and Control Room Supervisor is not diluted by the increased level of activities inherent in the startup. His responsibilities include:

- Providing 24 hour, continuous shift coverage.
- Coordinating emergent work activities with the Outage Director.
- Representing the Operations Manager on-shift.
- Providing immediate on-scene consultation and evaluation of emergent conditions.
- Responding to issues identified by the Shift Supervisor, assigning actions, and ensuring that each issue is properly resolved by the assigned organizational units.
- Facilitating and coordinating emergent support activities provided by other organizational units.
- Attending the shift turnover meetings in the Control Room.
- Informing the Management Representative of significant re-

straints and potential schedule impacts.

4.2.1.2 Startup Test Coordinator

This position, assigned by Plant Management, is manned on a 24 hour basis by an individual holding an SRO License or SRO Certification. The Startup Test Coordinator assists the Shift Supervisor to ensure that post maintenance and system testing is completed to support system and component operability. These responsibilities include:

- Identifying post-maintenance/modification tests to be performed during the startup and power ascension evolution.
- Identifying additional testing of plant systems and components to be performed to provide assurance that safety-related and non-safety related systems will support safe and reliable operations.
- Maintaining a Startup Test File (Attachment 2) as a subset of the Power Ascension Schedule (Attachment 3).
- Coordinating the performance of test file items with the power ascension schedule.
- Updating the Operations Management Representative with testing status.
- Informing the Operations Management Representative of significant restraints and potential schedule impacts.

4.2.1.3 Operations

Shift staffing for startup and power ascension is increased over normal levels. Additional staffing includes a Senior Reactor Operator, a Licensed Operator, and a Station Operator. Their responsibilities (Ref 3.2) are as follows:

- The Senior Reactor Operator observes overall operation in the Control Room to alert the duty crew of potential problems. This Operator is to remain independent from the duty crew and manipulate controls only if absolutely necessary and at the direction of the duty crew.
- The Licensed Operator is dedicated to verifying control rod movements. This Operator is to remain independent from the duty crew and manipulate controls only if absolutely necessary and at the direction of the duty crew.
- The Station Operator assists the duty crew during times when work load prevents the duty crew from performing manipulations in a timely manner. When not needed to assist the duty crew, this Operator is to tour the plant being observant to potential plant problems.

4.2.1.4 Instrumentation and Controls Department

Department Personnel will be on shift to provide support for the following:

- Pre-planned or required surveillance procedures.
- Emergent issues as deemed necessary by the Shift Supervisor.

4.2.2 Other Departments

Chemistry, Health Physics, Maintenance, and support organization staffing is provided on shift during the startup and power ascension evolution. Maintenance support personnel are pre-selected and designated to respond to emergent work. The personnel, reporting through the Outage Organization are assigned to shift work and are available 24 hours per day in the event of emergent work.

4.2.2.1 Chemistry and Health Physics

- Health Physics will be available for 24 hour coverage to ensure radiological coverage for emergent work and/or emergency response.
- Chemistry will provide 24 hour support for increased number of reactor coolant chemistry samples and any other emergent work.

4.2.2.2 Maintenance

Department Personnel will be on shift to provide support for the following:

- Pre-planned or required surveillance procedures.
- Emergent issues as deemed necessary by the Shift Supervisor.

4.2.2.3 Support Units

Other organizational units will be available (on-site or on-call as appropriate) 24 hours per day to respond to emergent issues. These Support Units include personnel from the following areas:

- Nuclear Engineering Department
- Plant Engineering
- Site Services
- Training

4.3 FIELD COACHING TEAM

A Field Coaching Team (FCT) process will be employed for the purpose of independently assessing performance of startup and power ascension activities. These assessments are to ensure Management expectations are understood and complied with.

The organization includes an FCT Manager who is responsible for coordination of FCT activities and for communicating the results directly to the Site Manager. Personnel assigned will possess qualifications commensurate with the activities being assessed.

Functional areas targeted for assessment are Operations, Instrument and Control, Maintenance, Engineering, Chemistry, and Health Physics.

At a minimum, the Field Coaching Team will be focusing on the following areas:

- Identification and resolution of procedure and instruction inadequacies.
- Identification and resolution of any potential preconditioning concerns.
- Identification and resolution of ineffective communication .
- Insuring effective us of resources to accomplish tasks safely with quality results.
- Insure any perceived schedule pressure is corrected.
- Insuring Condition Reports are generated when appropriate.

4.4 COMMAND AND CONTROL

This section clarifies command and control authority and lines of communication.

The duty Shift Supervisor is in charge of plant configuration and control at all times (Ref 3.4). The temporary staffing established to augment the normal operating staff during the startup and power ascension is structured to support the command and control authority of the Shift Supervisor and Control Room Supervisor.

The Operations Management Representative supports forthcoming events and coordinates actions to resolve emergent issues. He interfaces with the Management Representative and is informed of testing status by the Startup Test Coordinator. All departments inform him of potential schedule impacts. This assures an adequate flow of information between management and plant startup support personnel.

5. OUTAGE ACTIVITIES

This section describes the more significant work which was performed during shutdown 94-03 to correct or improve plant configuration.

5.1 MAJOR WORK PERFORMED

Attachment 4 lists the major work items performed during the shutdown and includes a brief description of each.

5.2 MAJOR PLANT MODIFICATIONS

The documentation provided in this section addresses the improvements that support safe and reliable plant operation. The modifications are listed by Design Change number and description on Attachment 5.

5.3 TRAINING

Prior to startup the necessary training shall be accomplished as follows:

5.3.1 Modifications

5.3.1.1 DC94-01 Battery Rooms Exhaust Fans and Non-Essential Control Building HVAC Trip. This Design Change will be presented to operators in Lesson OTH015-94 08 which contains the following objectives:

- Identify the purpose of DC94-01.
- Identify the interlocks between the essential control building HVAC system and the battery room exhaust fans and control building non-essential HVAC system.
- Identify the location of HV-REL-9A, 9B, 8A, and 8B relay panel and testjack points ECBHI-1, 2, ECBHII-1 and 2.
- Identify the change to Procedures 2.3.2.9, 2.3.2.10, 2.3.2.18, 2.4.6.6., and 2.2.38 due to DC94-201.

5.3.1.2 DC94-166, 480V Breaker Shunt Trip
5.3.1.3 DC94-223, HPCI-PS-68A, B, & C
5.3.1.4 TDC94-224, CS-MO-5A & B Time Delay Relay

5.3.2 Procedures

Lesson OTH015-94-10 will be presented to operations personnel informing them of recent Primary Containment Valve Control additions to the following:

5.3.2.1 COP 2.0.1, Operations Department Policy
5.3.2.2 COP 2.0.2, Operations Logs and Reports
5.3.2.3 AP 0.26, Surveillance Program

5.3.3 Startup Training Provided for Operators

Prior to assuming the watch, the Operations crews responsible for the startup will be trained in the simulator for the evolutions they will be performing during startup. These major evolutions will consist of the following:

5.3.3.1 Achieving criticality.
5.3.3.2 Placing Reactor Feed Pump in service.
5.3.3.3 Placing Reactor Mode Switch to Run.
5.3.3.4 Synchronizing generator to grid.

6. STARTUP OVERVIEW

This section describes the approval required for startup, the power ascension schedule, and addresses emergent issues.

6.1 STARTUP VERIFICATION

Startup Verification is written conformation that the plant systems and individual Departments are ready to support safe startup and operation.

6.1.1 System Readiness Review Checklist (Attachment 6)

This checklist provides documentation of reviews on each system by System Engineers to ensure readiness for plant startup.

6.1.2 Management Verification for Startup (Attachment 7)

Department Managers verify readiness for plant startup.

6.2 STARTUP AUTHORIZATION

Department Managers and Supervisors are responsible for performing a plant startup review, thus ensuring all applicable open items are addressed prior to reactor startup. SORC is responsible for authorizing the plant startup upon satisfactory completion of the startup review. The following shall be reviewed and resolved by Management prior to startup authorization being granted (Ref. 3.3):

- Operations Manager or Operations Supervisor shall review:
  Equipment Clearance and Release Orders, Valve Seal Log, Special Orders, Plant Temporary Modifications Control, and Surveillance Procedures.

- Engineering Manager, Operations Engineering Supervisor, or Plant Engineering Supervisor shall review:
  Design and Equipment Specification Changes, Special Test Procedure/Special Procedures, Temporary Design Changes, and Reactor Post-Trip Review Procedure.

- Maintenance Manager or Maintenance Supervisor shall review:
  Work Item Tracking - Corrective Maintenance, Work Item Tracking - Preventative Maintenance, and Unscheduled Shutdown Item List.

- QA Manager shall review:
  QA Commitments.

- Technical Staff Manager shall review:
  Open Condition Reports requiring resolution prior to startup, Commitment and Open Item Tracking, Procedure Changes, Contact Licensing for Outstanding Commitments.

- SORC Chairman (Review and Authorization)
  Review all items above and any exceptions which are forwarded to the Operations Manager for tracking and closure.

Once these items are reviewed, Attachments 6 & 7 are completed, and with Site Manager's concurrence plant startup will be authorized by the Plant Manager.

6.3 POWER ASCENSION SCHEDULE

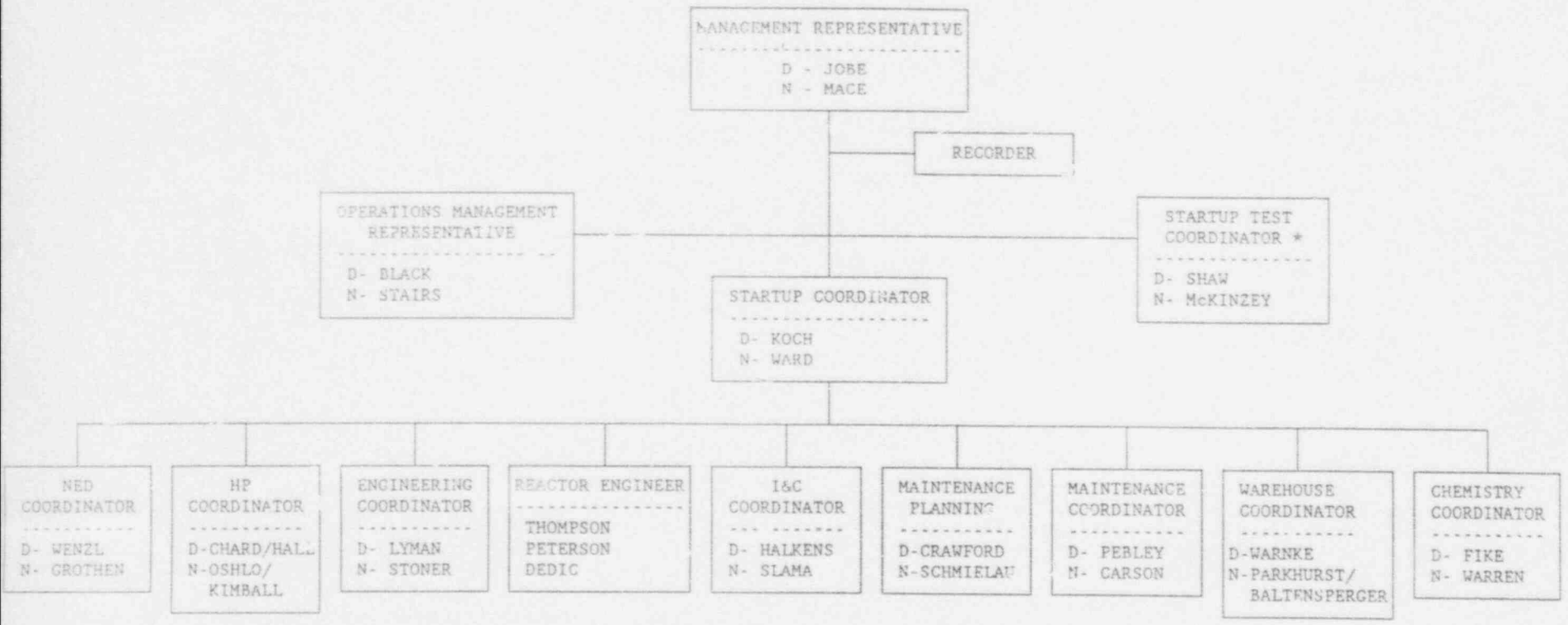
The Power Ascension Schedule (Attachment 3) is a schedule of the activities performed to progress from cold shutdown to full power operations. It is developed by the O & M Department and is based on procedural requirements for the startup. The Power Ascension Schedule begins when approval to commence the startup process has been granted.

6.4 RESOLUTION OF EMERGENT ISSUES

Emergent issues identified during startup need to be resolved effectively, with no degradation in plant configuration control, work quality, or safety. Existing processes are used to identify and track issues and to manage follow-up activities. These processes are augmented by the Operations Management Representative who evaluates new items, initiates notifications, and coordinates follow-up activities for priority items.

To ensure prompt management action, emergent issues and material discrepancies are reported in parallel to the Control Room and to the Operations Management Representative. Immediate response actions are initiated by the Control Room and follow-up actions such as initiating planning and scheduling, alerting maintenance personnel, initiating call-ins, etc., are initiated and coordinated by the Operations Management Representative with concurrence of the Management Representative.

STARTUP AND POWER ASCENSION ORGANIZATION



* = SRO LICENSE OR SRO CERTIFICATION
D = DAY SHIFT
N = NIGHT SHIFT

NOTE: 1) THE STARTUP AND POWER ASCENSION ORGANIZATION IS ESTABLISHED WHEN MODE SWITCH IS PLACED IN STARTUP AND SHALL REMAIN IN EFFECT UNTIL THE SECOND REACTOR FEED PUMP DISCHARGE VALVE IS FULLY OPEN.

2) COORDINATOR MEETINGS ARE CONDUCTED BY THE SENIOR MANAGEMENT REPRESENTATIVE AT 0630 AND 1830.

STARTUP PLAN ATTACHMENT 2
REVISION 1

MWRs BY SYSTEM
As of Aug 1, 1994

STARTUP TEST FILE

CIC	WI NUM	TEST REQUIRED	WORK PERFORMED
AOG-AOV-931AV	94-3283 94-3283	SOAP TEST STROKE VALVE	REBUILT OPERATOR REBUILT OPERATOR
AOG-HX-1B	94-3583	VERIFY NO LEAK	COVER GASKET LEAK
AOG-RV-11RV	92-2760	VERIFY LEAKAGE	REMOVED FOR TEST
AOG-RV-15RV	92-2843	VERIFY LEAKAGE	REMOVED FOR TEST
AOG-SOV-SPV11B	94-3807 94-3807	SOAP TEST VERIFY OPERATION	REBUILT SOV REBUILT SOV
AOG-TP-T2B	94-1425 94-1425	VERIFY OPERATION VERIFY LEKAGE	REBUILD REBUILD
AOG-V-330	94-1466	VERIFY LEKAGE AND OPERABILITY	REPACKED VALVE
AOG-V-331	94-1449	VERIFY LEKAGE AND OPERABILITY	REPACKED VALVE
AR-MOV-161MV	93-2936	VERIFY LEAKAGE	REBUILT VALVE
AS-AO-PCV810	94-1794 94-1392	VERIFY LEAKAGE VERIFY OPERATION	REPACKED REBUILT OPERATOR
AS-CV-15CV	93-4589	VERIFY LEAKAGE	REBUILT VALVE
ASB-B-1C	94-1436 94-0685	VERIFY LEAKAGE MP 7.0.8.1	OPEN FOR INSPECTION REPAIRED LEAK
CD-AO-OCV64	94-2544 94-2544	SOAP TEST AIR LINE VERIFY OPERATION	REPLACE AIR LINE REPLACE AIR LINE
CD-V-119	94-1926	VERIFY NO LEAK	REPACKED VALVE
CD-V-131	94-2421	MP 7.0.8.1	CUT PIPE AT VALVE
CD-V-229	94-1927	VERIFY NO LEAK	REPLACED VALVE
CRD	94-0955	MP 7.0.8.1	WELDED IN LEAKING PIPE
CRD-ACC-125(38-27)	94-1542	NPP 10.9	REPLACED
CRD-ACC-125(46-27)	94-3591	NPP 10.9	REPLACED
CRD-AO-CV126(34-31)	94-2619 94-2416	NPP 10.9 NPP 10.9	ADJ CLOSE SWITCH ADJ VALVE OPERATION
CRD-AO-CV126(46-43)	94-2620 94-0889	NPP 10.9 NPP 10.9	ADJ CLOSE SWITCH ADJ VALVE OPERATION
CRD-AO-CV127(34-31)	94-2416	NPP 10.9	ADJ VALVE OPERATION
CRD-AO-CV127(46-43)	94-0889	NPP 10.9	ADJ VALVE OPERATION
CRD-AOV-CV126(22-19)	94-2370	NPP 10.9	ADJ LIMIT SWITCH

STARTUP PLAN ATTACHMENT 2
REVISION 1

MWRs BY SYSTEM
As of Aug 1, 1994

STARTUP TEST FILE

CIC	WI NUM	TEST REQUIRED	WORK PERFORMED
CRD-AOV-CV126(26-15)	94-2376	NPP 10.9	ADJ LIMIT SWITCH
CRD-AOV-CV126(30-11)	94-2375	NPP 10.9	ADJ LIMIT SWITCH
CRD-AOV-CV126(30-31)	94-2372	NPP 10.9	ADJ LIMIT SWITCH
CRD-AOV-CV126(34-27)	94-2374	NPP 10.9	ADJ LIMIT SWITCH
CRD-AOV-CV126(38-27)	94-2373	NPP 10.9	ADJ LIMIT SWITCH
CRD-AOV-CV126(46-43)	94-2371	NPP 10.9	ADJ LIMIT SWITCH
CRD-AOV-CV127(14-11)	94-2379	NPP 10.9	ADJ LIMIT SWITCH
CRD-AOV-CV127(14-23)	94-2378	NPP 10.9	ADJ LIMIT SWITCH
CRD-AOV-CV127(22-39)	94-2377	NPP 10.9	ADJ LIMIT SWITCH
CRD-AOV-CV127(30-19)	94-2383	NPP 10.9	ADJ LIMIT SWITCH
CRD-AOV-CV127(30-35)	94-2382	NPP 10.9	ADJ LIMIT SWITCH
CRD-AOV-CV127(30-39)	94-2381	NPP 10.9	ADJ LIMIT SWITCH
CRD-AOV-CV127(34-31)	94-2380	NPP 10.9	ADJ LIMIT SWITCH
CRD-SOV-SO117(30-07)	94-2349	NPP 10.9	REBUILT SOLENOID VALVED
CRD-SOV-SO117(38-27)	94-2350	NPP 10.9	REBUILD SOLENOID VALVED
CRD-SOV-SO117(42-11)	94-2348	NPP 10.9	REBUILT
CRD-SOV-SO117(46-43)	94-2347	NPP 10.9	REBUILT
CRD-SOV-SO118(30-07)	94-2349	NPP 10.9	REBUILD SOLENOID VALVED
CRD-SOV-SO118(38-27)	94-2350	NPP 10.9	REBUILD SOLENOID VALVED
CRD-SOV-SO118(42-11)	94-2348	NPP 10.9	REBUILT
CRD-SOV-SO118(46-43)	94-2347	NPP 10.9	REBUILT
CW-V-67	94-2343	MP 7.0.8.1	REPLACED VALVE
CW-V-71	94-2343	MP 7.0.8.1	REPLACED VALVE
EE-STR-250HPC1(M014)	94-1271	SP 6.3.3.1.1	INSPECT MOTOR
ES-AO-NRV3	94-2351 94-2641	SP 6.4.8.10.1 STROKE FOR LEAKS	REPLACED OPERATOR CYLINDER REBUILT OPERATOR
ES-AOV-NRV3	94-2667	SP 6.4.8.10.1	REPLACED LIMIT SWITCH
ES-AOV-NRV4	93-4545	VERIFY OPERATION	PACKING ADJUSTMENT
ES-AOV-NRVSTV3	94-3053 94-3053	VERIFY OPERATION SOAP TEST AIR CONNECTIONS	REBUILTS REBUILTS

STARTUP PLAN ATTACHMENT 2
REVISION 1

MWRs BY SYSTEM
As of Aug 1, 1994

STARTUP TEST FILE

CIC	WI NUM	TEST REQUIRED	WORK PERFORMED
ES-MO-NRV4	93-4545	ADJUST PACKING	PACKING ADJUSTMENT
ES-SOV-NRVSTV12	94-3109	VERIFY OPERATION	REPAIR AIR LEAK
ES-SOV-NRVSTV2	94-3165 94-3165	VERIFY PROPER OPERATION SOAP TEST VERIFY NO LEAKS	REPLACED FOR LEAKING AIR AND BUZZING TOO LOUD REPLACED FOR LEAKING AIR AND BUZZING TOO LOUD
HPCI		SP 6.3.3.1.1	
HPCI-V-44	94-3413	SP 6.3.3.1.1	REPAIR
LO-F-BK01	94-3498	VERIFY D/P	REPLACED FILTER
LOGT-PI-205	94-3009	VERIFY PROP OPERATION	REPLACE GAUGE
MC-CR-1	93-4564	VERIFY PROPER OPERATION	
MC-CV-16CV	94-2060	VERIFY NO LEAKS	HINGE PIN COVER LEAK
MN APRM		SP 6.1.3	
MS-AOV-DRV8	94-1807	SP 6.4.8.2.8	REBUILT
MS-AOV-PCV62	94-1096	STROKE FOR LEAKS	REPACKED
MS-AOV-VARIOUS	93-3415	SP 6.4.8.10.1	REPAIR
MS-FE-122A	94-3060	ISLT	SWITCH SENSE LINE
MS-FE-127A&B	94-2500	VERIFY LEAKAGE	CLEANED AND INSPECTED, ADDED GAGES
MS-FE-SEVERAL	94-2499	VERIFY LEAKAGE	CLEANED AND INSPECTED, ADDED GAGES
MS-PR-SEVERAL	93-3192	VERIFY ANN OPERATION	CAL CHECKS
MS-SOV-SPV1331	94-2326] 94-2326	SOAP TEST FITTINGS VERIFY OPERATION	REBUILT SOLENOID REBUILT SOLENOID
MS-TP-1	94-2404 94-2404	MP 7.0.8.1 SP 6.4.8.9	REPLACED TRAP REPLACED TRAP
MS-TP-13	94-2404 94-2404	SP 6.4.8.9 MP 7.0.8.1	REPLACED TRAP REPLACED TRAP
MS-TP-16	94-2151	VERIFY OPERATION	REPLACED TRAP
MS-TP-SEVERAL	93-3277	SP 6.4.8.9	REPLACED TRAP
MS-V-27	94-2102	MP 7.0.8.1	REPLACED VALVE
MS-V-663	94-1581	VERIFY LEAKAGE AND OPERATION	REPLACED VALVE

STARTUP PLAN ATTACHMENT 2
REVISION 1

MWRs BY SYSTEM
As of Aug 1, 1994

STARTUP TEST FILE

CIC	WI NUM	TEST REQUIRED	WORK PERFORMED
MS-V-766	94-1598	MP 7.0.8.1	ADJ PACKING
MS-V-771	94-2386	MP 7.0.8.1	REPLACED VALVE
MS-V-872	94-1316	MP 7.0.8.1	REPLACED VALVE
MSIV		SP 6.3.9.4	
NBI-SOV-SSV739	94-3490 94-3490	MP 7.0.8.1 MP 7.0.8.1	REPAIR REPAIR
NBI-V-632	94-0163	ISLT	REPLACED VALVES
NM		NBI 10.2	
NMT-NDC-(131-4C)	94-2315	PERFOR OD-1	REPLACED RELAY
OG-V-12	94-1582 94-1582	VERIFY OPERATION SOAP TEST	REBUILT REBUILT
OG-V-13	94-1582 94-1582	SOAP TEST VERIFY OPERATION	REBUILT REBUILT
PC-TE-500D	94-2700	VERIFY OPERATION	TROUBLE SHOOTING
PMIS	94-3475	VERIFY PROP OPER	REPAIR PTS
RCIC		SP 6.3.6.1.1	
RCIC-CV-26CV	94-2290	MP 7.0.8.1	6.3.10.26
RCIC-PS-3070	94-1645	ISLT	REPLACE TUBING
RCIC-SW-S1 (MO-15)	94-4022 94-4022	SP 6.3.10.24 SP 6.3.6.2	REPLACED SWITCH REPLACED SWITCH
RCIC-SW-S2 (MO-16)	94-3958 94-3958	SP 6.3.10.24 SP 6.3.6.2	REPLACED SWITCH REPLACED SWITCH
RF-AOV-FCV11BB	94-2468 93-3275 93-3275	ISLT VERIFY OPS ISLT	ADJUST PACKING ADJUST PACKING ADJUST PACKING
RF-SOV-TBTB	94-3070	VERIFY LEAKAGE	REINSTALL
RMP-RE-130B	94-2931	SP 6.3.7.2.3	REPLACE DETECTOR
RPIS (30-03)	94-3911	VERIFY OPERATION OF RED (FULL OUT) LIGHT	REBUILT CONNECTION
RPS/TG		SP 6.1.9	
RRV-155	93-4013	VERIFY PROPER RESPONSE	PACKING
RR-V-156	93-4013	VERIFY PROPER RESPONSE	PACKING

STARTUP PLAN ATTACHMENT 2

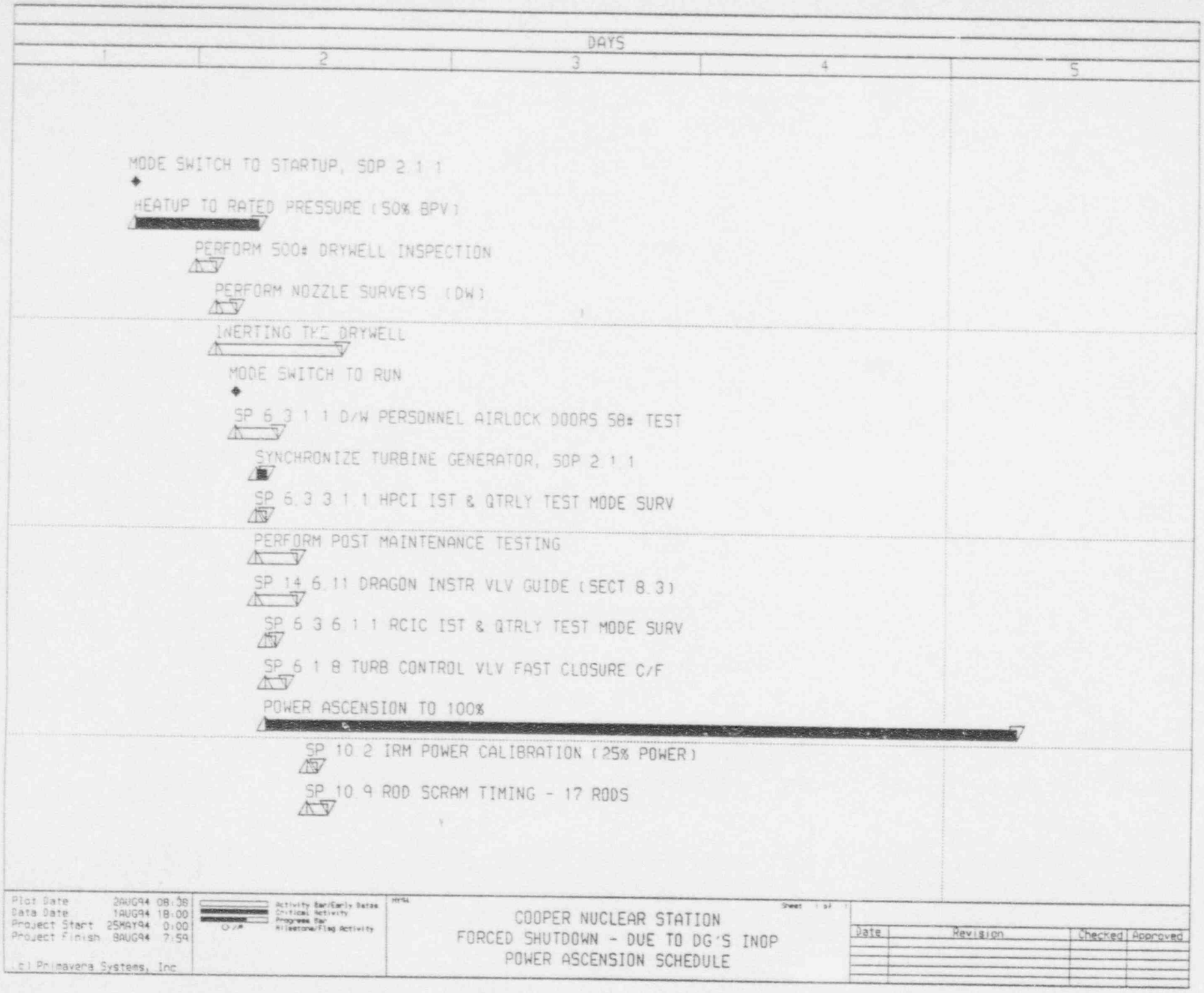
REVISION 1

MWRs BY SYSTEM

As of Aug 1, 1994

STARTUP TEST FILE

CIC	WI NUM	TEST REQUIRED	WORK PERFORMED
RR-V-186	93-4014	VERIFY PROPER RESPONSE	PACKING
RRLO-TI-1A	94-2223	VERIFY PROPER INDICATION	TEMP INDICATION
RRMG-EXC-MGA	94-2508	VERIFY OPERATION	REPLACED BRUSHES
RRMG-REL-K35A	94-2637	VERIFY LIMITER OPERATION	CAL RELAY
RRMG-REL-K35B	94-2638	VERIFY LIMITER OPERATION	CAL RELAY
RW-P-FDSP	94-2476	VERIFY LEAKAGE	REPLACED AND REPACKED
RWCU	94-3744	MP 7.0.8.1	RE TORQUED FLANGE BOLTS
RWCU-AOV-FCV55	93-3996	ISLT	REPAIR
RWCU-FE-102A	94-2964	MP 7.0.8.1	CLEANED AND INSPECT
RWCU-SOV-SPV109A	94-3289	VERIFY OPERATION	REBUILT SOV
SW-V-55	93-2223	VERIFY NO LEAK THROUGH	REPLACED VALVE
TG		SP 6.1.7	
TG-TU-VAC LINES	93-4003	VERIFY VAC INDICATION	CLEANED LINES
TG1-R-101	94-2604	SP 6.4.8.2.7	CAL VIB INST


DAYS
1
2
3
4
5
MODE SWITCH TO STARTUP, SOP 2.1.1
HEATUP TO RATED PRESSURE (50% BPV)
PERFORM 500# DRYWELL INSPECTION
PERFORM NOZZLE SURVEYS (DW)
INERTING THE DRYWELL
MODE SWITCH TO RUN
SP 6.3.1.1 D/W PERSONNEL AIRLOCK DOORS 58# TEST
SYNCHRONIZE TURBINE GENERATOR, SOP 2.1.1
SP 6.3.3.1.1 HPCI IST & QTRLY TEST MODE SURV
PERFORM POST MAINTENANCE TESTING
SP 14.6.11 DRAGON INSTR VLV GUIDE (SECT 8.3)
SP 6.3.6.1.1 RCIC IST & QTRLY TEST MODE SURV
SP 6.1.8 TURB CONTROL VLV FAST CLOSURE C/F
POWER ASCENSION TO 100%
SP 10.2 IRM POWER CALIBRATION (25% POWER)
SP 10.9 ROD SCRAM TIMING - 17 RODS
Plot Date 2AUG94 08:38
Data Date 1AUG94 18:00
Project Start 25MAY94 0:00
Project Finish 8AUG94 7:59
(c) Primavera Systems, Inc
Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity
COOPER NUCLEAR STATION
FORCED SHUTDOWN - DUE TO DG'S INOP
POWER ASCENSION SCHEDULE
Date
Revision
Checked
Approved

ACTIVITY IDENTIFICATION	ACTIVITY DESCRIPTION
942370 through 942383 942387 through 942397	CRD-AOV-CV126 & 127 Align Limit Actuators (25 total)
943396	STP-94-100-1 CS B Flow Transient troubleshooting
942646	DG-RV-15RV Replacement
942520	EE-SWGR-480F As-build wiring
942521	EE-SWGR-480G As-build wiring
943055	EE-MCC-Q(10B) CS-MO-26A Ground-replace transformer
-----	SP 94-208 Perform UV Relay Testing
942486	T. Bldg. Exh & Supply fans DP <-.25
941768	Replace Air Side Seal Oil Pump
942548	LO-P-AS Replace mechanical seal
941495	MS-HO-GV1 Replace cylinder
942410	MS-HO-SV2 Replace cylinder
942411	MS-HO-GV2 Replace cylinder
942412	MS-HO-GV4 Replace cylinder
941932	NM-NAM-AR3 Wire harness binding
941933	NM-NAM-AR7 Wire harness binding
941934	NM-NAM-AR1 Wire harness binding
942537	NMI-NE-33E, NT-34E IRM E Spiking
942315	TIP Machine 3 K3 Relay replacement
943349	REC-P-C Inboard bearing failed-Repair/replace pump
942362	RF-CV-15CV Repair hinge pin cover gasket leak
943319-02	RHR-MO-39B LLRT repair
942510	RHR-MO-16B Examine internals-LMS Compartment
942508	RRMG A & B Exciter & Generator brushes
942408	TGC-CPU-DEH01 BPV#1 Repair/replace servo/LVDT
942568	NMI-NAM-41D IRM D Spiking

STARTUP PLAN ATTACHMENT 5

REVISION 1

DESIGN CHANGE	DESCRIPTION	STATUS REPORT DATE
DC 94-209	Personnel Airlock Test connections	6-04-94
DC 94-212	Penetration X-218 Modification	6-16-94
DC 94-212A	Penetration X-209 Modification	6-24-94
DC 94-212B	Penetration X-43 & X-44 Testable Flanges	7-08-94
DC 94-212C	REC LLRT Test Connections	7-11-94
DC 94-212D	IA & SA X-21 & X-22 Isolation valves and Test Connection	7-12-94
DC 94-212D-1	Install 2" Soft Seat CVs for 65CV & 78CV	7-12-94
DC 94-212E	Instrument Valves and Caps	7-09-94
DC 94-212F	Instrument Lines Into Containment	7-18-94
DC 94-212H	PASS System X-51F	7-08-94
DC 94-212J	Piping Penetrations 2N Upgrade	7-13-94
DC 94-212M	TIP CV Removal	7-22-94
DC 94-214	Emergency Diesel Cabinet Qualification	7-01-94
DC 94-166	480V Bkr Shunt Trip	7-04-94
DC 94-222	PC-PT-2104A & B, PC-DPT-20 Replacement	7-10-94
DC 94-223	HPCI-PS-68A, B, C, & D	7-19-94
TDC 94-224	CS-MO-5A & B TDR	7-26-94

STARTUP PLAN ATTACHMENT 6

Revision 1

SYSTEM READINESS REVIEW CHECKLIST

SYSTEM NAME

SYSTEM ENGINEER REVIEW SUMMARY (The System Engineer shall initial each item below to confirm reviews are complete)

_____ System open Maintenance Work Requests
_____ Plant Temporary Modifications
_____ Preventative Maintenance
_____ ACT items
_____ System Walkdown performed
_____ Nuclear Action Item Tracking

REMARKS (The System Engineer can provide any additional relevant information deemed necessary to provide a complete summary of system readiness)

System Engineer Signature _____ Date _____

ENGINEERING MANAGEMENT REVIEW & APPROVALS

Supervisor Signature _____ Date _____

Engineering Mgr Signature _____ Date _____

COMMENTS:

SORC APPROVAL

_____ _____
SORC Chairman Date

SITE MANAGER APPROVAL *

_____ _____
Site Manager Date

* Required if comments noted

SYSTEM READINESS REVIEW

System Engineer Responsibilities

A. Responsible for screening open items and development of the System Readiness Review Checklist (SRRC) as designated in this Attachment.

B. Responsible for ensuring that all open items related to startup are identified.

C. Responsible for review of non-open item (non-tracked) based issues that could impact system readiness, such as pending plant modifications, unanswered Engineering Memoranda, work/PMs that were scheduled to be done during the October '94 Outage, etc.

D. Responsible for evaluating the integrated effects of work and/or engineering issues on the system and developing justifications to include or reschedule open items based on nuclear safety and reliability.

E. A listing of all items reviewed shall be attached to the SRRC for documentation purposes.

F. Responsible for ensuring that no open items impact safe startup of the plant.

System Engineer Review Scope

A. Prior to startup, the responsible System Engineer shall review open items on the system. Open items will be documented in accordance with this procedure. In this review, the System Engineer must consider the following sources of relevant system information:

- Open Maintenance Work Requests
- Open ACT items
- Open PMs
- Open PTMs

B. The System Engineer shall also perform a system walkdown for startup related issues and attach the results to the SRRC.

C. The following guidance shall be used by the System Engineer to assess an open item:

- The item does not adversely affect nuclear safety;
- The item is not needed to comply with the Technical Specifications;
- The item will not affect the ability of any safety system to satisfy its design function;
- The item is not likely to result in reduced safety system availability, increased forced outage rate, or reduced capacity factor in the time before it is completed or resolved.

EXAMPLES OF OPEN ITEMS

Maintenance Work Requests

Backlogged Preventive Maintenance Work Requests

Plant Temporary Modifications

Open/Walkdown Inspection Findings

ACT items

NAIT items

Unanswered Engineering Memoranda

Open Operating Experience Items (NAIT)

Commitments (NAIT)

Preventive Maintenance Activities (PMs)

STARTUP PLAN ATTACHMENT 7

Revision 1

MANAGEMENT VERIFICATION FOR STARTUP

DEPARTMENT _____ DEPARTMENT MANAGER _____

In addition to G.O.P. 2.1.1.1 requirements, the following items have been reviewed to ensure no open items will impact safety on plant startup:

Signature

1. All department open items reviewed including:
   - Maintenance Work Requests _____
   - Condition Reports _____
   - Commitment/Open Item Tracking _____
   - Procedure Changes _____
   - Training _____
   - Open OER Documents _____
2. Any other items considered important to safety. _____

I verify readiness to Startup and have completed an extensive walkdown of plant systems. The plant is ready to return to power operation. Any comments are noted below:

COMMENTS:

_____ _____
DEPARTMENT MANAGER DATE

REVIEWED:

_____ _____
SENIOR MANAGER DATE

_____ _____
* SITE MANAGER DATE

* Required if comments noted