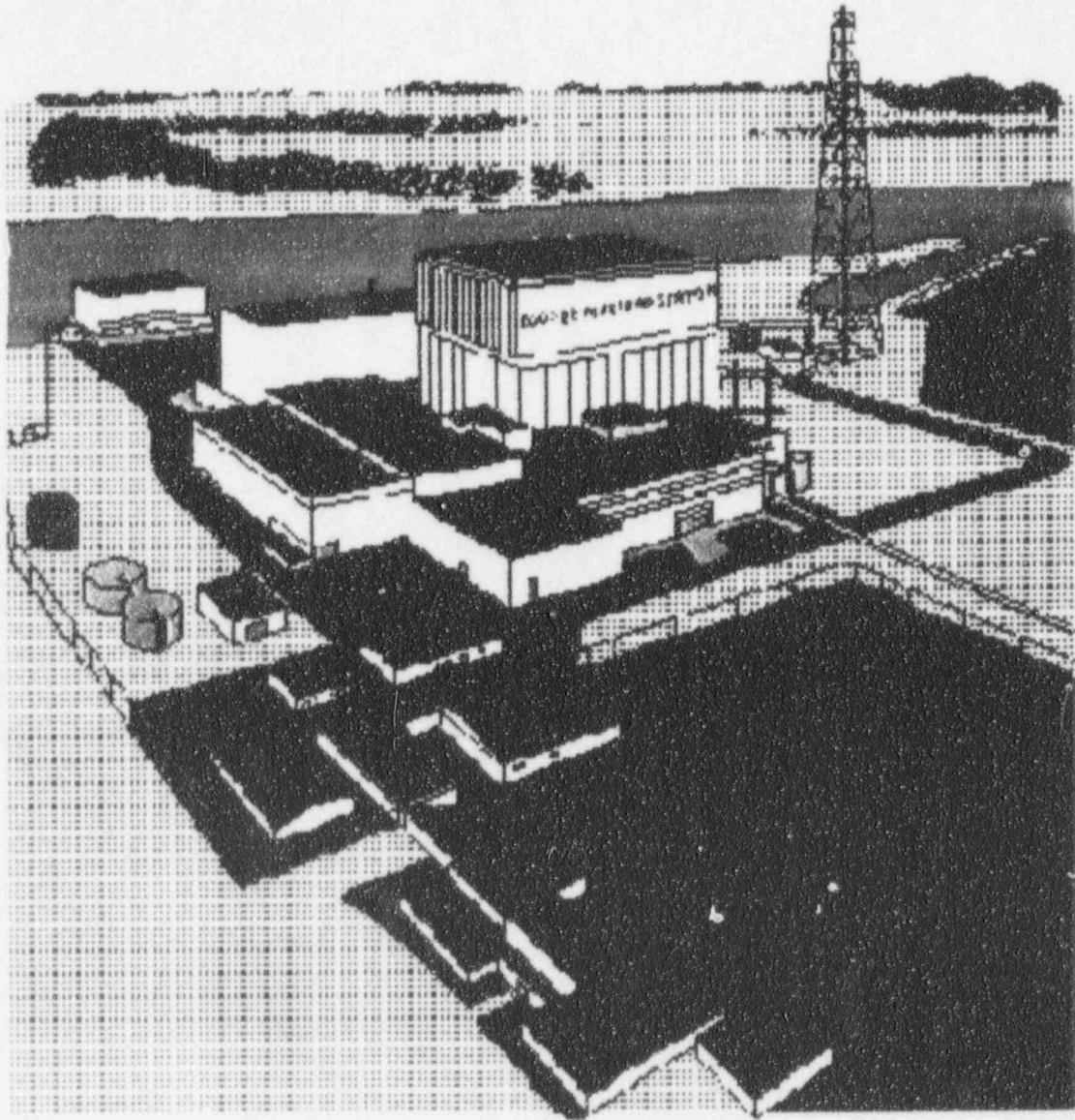


# Nebraska Public Power District Nuclear Power Group



*Restart Readiness Program  
Revision 1*

# COOPER NUCLEAR STATION

## RESTART READINESS PROGRAM

January 20, 1995

(Revision 1)

APPROVED BY:

  
\_\_\_\_\_  
PLANT MANAGER

1/20/95  
DATE

  
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SITE MANAGER

1/20/95  
DATE

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## PERFORMANCE IMPROVEMENT PLAN

### RESTART READINESS PROGRAM

#### I. PURPOSE/DESCRIPTION

The purpose of the Restart Readiness Program (RRP) is to document the methodology being used by the Nebraska Public Power District (NPPD) to complete activities necessary to return Cooper Nuclear Station (CNS) to operation following the May 25, 1994, forced outage. The Restart Readiness Program addresses how CNS will utilize Restart Lists, Performance Improvement Plan (PIP) Phase 1 Action Items, Diagnostic Self Assessment Team (DSAT) findings, NRC Special Evaluation Team (SET) Inspection findings, NRC Confirmatory Action Letter (CAL) closeouts, and NRC Restart Panel conclusions regarding activities that will provide an objective basis for restart readiness. The results of each of these efforts are incorporated into final restart readiness determinations. In addition, issues such as plant material condition, miscellaneous hardware deficiencies, and organizational readiness will be assessed and appropriately resolved prior to restart.

The Restart Readiness Program provides a transition from Phase 1 PIP activities to implementation of the Power Ascension Plan. Phase 1 involves a planning process for significant issues that must be addressed prior to plant startup. Many of these significant issues have been identified in documents such as the Diagnostic Self-Assessment Team inspection, NRC Confirmatory Action Letters, open inspection report items, and management self-identified issues. Phase 1 actions were assigned to individual managers who are responsible for ensuring adequate closeout. NPPD considers all Phase I PIP Action Item objectives to be restart issues (see discussions in Section VII of this document and Appendix C). Some Phase 1 PIP Action Items, however, may result in long-term corrective actions that may not be completed prior to restart. These actions will be screened and bases documented for why they do not need to be included on the restart list.

Subsequent to restart, Phases 2 and 3 PIPs will be completed. These activities will ensure continued high quality performance. Phase 2 will address essential management actions that will be completed in the 2-3 month period following plant restart. Phase 3 will address long-term strategic planning. It will provide the framework for managing performance improvement actions that are essential for meeting long-term objectives for safety, production, and economics. This phase will involve activities with planning cycles from one to several years. Phase 3 activities are focused on fundamental improvement strategies and long-term deficiency recurrence control.

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### II. HISTORY

The following provides a brief chronology of significant events that are relevant to current restart readiness activities. These events have contributed to the basis for why certain restart actions and processes have been deemed necessary and appropriate.

5/25/94	Cooper Nuclear Station (CNS) enters a forced outage as a result of concerns regarding relay operability.
5/26/94	Public meeting at CNS between NPPD and the NRC to discuss Integrated Enhancement Plan.
5/27/94	NRC issues Confirmatory Action Letter (Rev. 0)
6/16/94	NRC issues Confirmatory Action Letter (Rev. 1)
7/1/94	NRC issues Confirmatory Action Letter (Rev. 2)
7/26/94	Power Ascension Plan, Rev. 0 issued
7/25 - 8/19/94	Diagnostic Self-Assessment Team (DSAT) inspection
7/28/94	NPPD Responds to Confirmatory Action Letter (Revs. 0, 1, and 2)
7/29/94	Management Meeting at NRC Headquarters
8/2/94	NRC addendum to Confirmatory Action Letter (Rev. 2)
8/2/94	Power Ascension Plan, Rev. 1 issued.
8/12/94	NPPD responds to Confirmatory Action Letter (Rev. 2 addendum)
8/15/94	NRC Special Evaluation Team inspection begins
8/26/94	Performance improvement briefing for NRC
9/1/94	DSAT Report issued
9/15/94	Nuclear Group Startup Plan (Rev. 1)
9/16/94	Enforcement Conference on CAL-related issues
10/6/94	Phase 1 Plan (Rev. 2)

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### III. DEFINITIONS

#### A. Emergent Work

All new work items that occur after Integrated Restart List issuance; and therefore, have yet to be restart screened and scheduled for completion.

#### B. Integrated Restart List

A detailed list of activities that must be completed prior to restart of CNS.

#### C. Summary Restart List

A list of restart issues based on Phase 1 Performance Improvement Plan objectives.

#### D. Open Items

Items that have the potential to affect components, subsystems, or system operations that must be screened, evaluated, and dispositioned. This dispositioning will result in a determination of whether or not the item is required to be resolved prior to restart.

#### E. Startup Issue

An item assigned to a responsible manager for closeout (prior to plant restart). These issues are maintained on the Summary or Integrated Restart List.

#### F. Final System Readiness Review

The process whereby System Engineers ensure the readiness of their assigned system by reviewing appropriate documents, restart criteria, field walkdowns, and other outstanding engineering/hardware issues.

#### G. Department Readiness Review

The process whereby Department Managers ensure the readiness of their area of responsibility by reviewing of items such as performance indicators, organization changes, personnel, and self-assessment of performance results.

## **PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM**

### **H. Licensing Regulatory Closure**

Verification by Licensing that all restart actions required by NPPD and the NRC have reasonable documentation and bases.

### **I. Program Readiness Review**

An assessment by department program owners to determine the health and effectiveness of programs owned by that department. The results of this assessment will be incorporated into department readiness affirmations.

### **J. Site Readiness Review**

A final-stage review by the Management Review Committee (MRC) and other senior District managers for restart readiness which involves integrated assessments of system and department readiness reviews in addition to restart list closure, Phase 2 and 3 plans, and other ongoing self-assessments.

### **K. Performance Improvement Plan**

A three phase document that summarizes processes, methodologies, and bases for ensuring that performance at CNS improves.

### **L. Responsible Manager**

The manager who is accountable for ensuring that a restart issue is satisfactorily completed.

### **M. Critical Systems List**

Comprised of those systems that could contribute the greatest to safe and reliable operation of CNS.

### **N. Focus Programs List**

CNS programs that have specific structure and purpose, and have been selected by management as being appropriate for performance monitoring.

## **IV. RESPONSIBILITIES**

### **A. Site Manager**

Principle manager responsible for review, approval, and implementation of the Restart Readiness Program and all revisions thereto.

## **PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM**

### **B. Plant Manager**

Principle manager responsible for review, approval, and implementation of the Power Ascension Plan and ensuring prompt revision as necessary.

### **C. Management Review Committee**

A management team composed of the Plant Manager, Senior Manager of Safety Assessment, and Corporate Division Manager of Nuclear Engineering & Construction. The Plant Manager is the Chairman of the MRC. All MRC members are expected to be present during all MRC meetings where restart determinations are made. Exceptions to this expectation may only be granted by the MRC Chairman. The MRC has the primary responsibility for determining that items are appropriate for addition to the restart list, that self-assessments are satisfactory, and that organization performance has been improved to the point that restart of CNS is appropriate.

### **D. Responsible Manager**

Manager accountable for ensuring that the item has been properly assigned and closed-out. The Responsible Manager (or designate) typically will present restart item screening conclusions and the restart item closeout presentation to the MRC.

## **V. RESTART READINESS PROCESS**

The restart readiness process involves the collective review and assessment of events and activities, and associated resolutions to determine if CNS is ready to resume operation. The primary contributor to restart conclusions will be the satisfactory closeout of Phase I Action Items. As discussed herein, Phase 1 Action Item objectives provide the basis for the CNS Summary Restart List. More detailed restart issues are included in the Integrated Restart List. The addition or deletion of a restart item from these lists may occur only with the approval of the MRC. This process is similar to approaches recently used by other nuclear plants with similar deficiencies.

Also providing input into restart readiness decisions is the closeout of several self-assessment initiatives. Restart readiness self-assessments will be performed for critical systems, significant programs, and CNS departments. These self-assessments will utilize the results of Phase I Action Item closeout, as appropriate. The MRC will determine the acceptability of self-assessments and make a site readiness determination. Once it is concluded that the site is ready for restart, implementation of the Power Ascension Plan begins. The Power Ascension Plan provides direction regarding additional restart actions.

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### VI. PHASE I CLOSEOUT

Closeout of all Phase 1 activities was viewed by CNS management as necessary to demonstrate clearly that sufficient changes have occurred at CNS to address and to prevent recurrence of declining performance. The method of Phase 1 closeout, disposition of Phase 1 findings, and implementation of resultant corrective actions are discussed in Appendix A of this document.

### VII. RESTART LIST

As discussed in the Phase 1 Performance Improvement Plan, the process used to identify restart action categories included a review of CAL items (and responses), open items, DSAT issues, SET issues, and NPPD-identified issues. Two levels of restart items exist at CNS. The Phase 1 Plan provides action items that broadly define restart item categories and documents responsible NPPD managers. The list of Phase 1 Action Item objectives is the Summary Restart List. The Summary Restart List is provided as Appendix C to this document. This list has been approved by senior management as the scope of actions that must be completed prior to restart. The second level of restart items, the Integrated Restart List, contains more detailed itemized descriptions of the specific activities that must be completed prior to restart. The Integrated Restart List also must be approved by the Management Review Committee. Approval of additions to these lists is addressed in Section VII.A below and Appendix D. Emergent restart issues will have a focused evaluation to determine whether they should be added to, or deleted from, the Integrated or Summary Lists. These lists are not intended to address routine issues that would normally be required by, for example, technical specifications, previous commitments to the NRC not specifically related to restart, and other activities designated by the Site or Plant Manager. Also, these lists do not include all issues that could be scheduled for completion during the outage. Many outage items may reasonably be rescheduled until post-restart if circumstances do not allow their completion prior to plant startup. See Appendices B and L for a flowchart on how NPPD will address outage work items. The restart categories addressed in the Phase 1 PIP are:

- Independent Oversight and Self-Assessment: roles and responsibility of SRAB, SORC, QA and QC and organizational self-assessment.
- Corrective Action Program, Planning and Performance Monitoring: problem identification, root cause analysis, planning and issue resolution, performance monitoring and follow-up.
- Work Control: identification, tracking, planning and scheduling.
- Design Control and Configuration Management: plant design change control, clearance program, valve lineups, and drawing control.

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- Engineering Support: roles, responsibilities, and support to operations and maintenance.
- Plant Testing: IST, surveillance, post-maintenance testing, and preconditioning.
- Operational Experience Review (OER).
- Procedural Control: technical quality, procedure changes, and procedure adherence.
- Additional Management Issues: issues that are not specifically addressed in individual program and process categories.

### A. Development of Restart Items List

#### 1. Identification of Restart Items

Restart items generally evolve from material condition issues, ongoing NRC inspections, and NPPD assessment activities. Potential restart items also may evolve from employee input to supervisors, through CNS management's review of Performance Improvement Plan activities, or from other self-assessment or improvement processes. In this light, CNS has developed a Potential Restart Item Form which may be submitted by any NPPD employee (to the MRC) who believes that an item should be evaluated by the MRC for restart implications. Restart Items may be addressed by the MRC individually or as a group. Inclusion or exclusion of a group of items is appropriate only if the activities are similar based on the following factors:

- Safety significance, and
- extent of condition, and
- source (e.g., hardware issues, process issues, maintenance work requests, etc.).

A more detailed discussion of the process used for submittal of this form is provided in Appendix D. Specific restart item identification builds upon the same screening criteria utilized in the Phase 1 Plan. The screening criteria are repeated below for convenience.

#### Level I Screening Evaluation:

Issues were evaluated to identify potential safety or operability concerns. These issues were automatically categorized as restart items.

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### Level II Screening Evaluation:

Issues that were not categorized as restart items during the Level I screening evaluation were reassessed to determine if they still should be considered restart items. Satisfying any of the following criteria qualifies the item as a restart item. An event or finding must be categorized as a restart item if the event or finding involves or could reasonably lead to:

- an event, component failure, deficiency, or condition that could result in operation in an LCO Action Statement, or
- failing to perform a required surveillance test or other license requirement or meet a commitment to an outside agency, or
- failure of power production equipment that could result in a plant transient, derating, or plant shutdown, or
- conditions that have resulted in repetitive safety system equipment failures, or
- potential licensing basis deficiencies requiring maintenance to restore to conforming conditions (i.e., deficiencies in safety-related or other qualified equipment, e.g., EQ, Appendix R, or seismic), or
- potential design basis deficiencies, i.e., deficiencies in safety-related equipment or other technical specification equipment not in conformance with the USAR, or
- deficiencies in configuration management programs, processes, engineering analysis codes, or documentation that have, or could have, a reasonable likelihood of affecting equipment operability, or
- conditions that may create an unacceptable potential for an unplanned radioactivity release to the environment or discharge effluent to the environment which is in excess of limits.

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### **B. Development of the Outage Maintenance Schedule**

Maintenance work for the current outage is controlled in accordance with an outage schedule that contains maintenance work that must be completed prior to plant restart. In addition to meeting the technical specification requirements for equipment operability, the schedule will contain other maintenance activities that satisfy at least one of the eight Level II startup criteria stated above. Decisions to add hardware items to the approved startup schedule are controlled as described in the flowchart provided in Appendices B and D. These flowcharts describe how potential restart issues are screened and closed-out.

### **C. Closeout of Restart Items**

The following provides a standardized format for addressing Integrated Restart List items.

#### **1. Closeout Documentation**

The Responsible Manager for each Summary Restart List item must maintain the master set of documentation for issue closeout. The following closeout process applies to Phase 1 Action Plan items and other significant issues as directed by the MRC. All other issues, e.g., Maintenance Work Requests, Condition Reports, Nuclear Action Item Tracking issues, etc., will be closed using normal station processes. The documentation will be maintained in a binder containing information in the following format:

#### **A. Summary:**

- Explain why issue is closed/objectives satisfied.

#### **B. Closeout Actions:**

- Actions taken to closeout each Action Plan step.
- Why actions envelope the "extent of condition."

#### **C. Results**

- Performance Improvements in general.
- Any measurable indications/examples of improvement.

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### D. Follow-up Actions

- Actions to ensure continuation of improvements.

Attachments: Supporting documentation verifying closure of each Action Plan step.

1. Index
2. Action Plan
3. Gantt chart with status pages (if appropriate)
4. Support documentation; e.g., QA inspections, procedure changes, cover pages of documents and applicable pages.

Approvals: (signatures)

### VIII. SELF-ASSESSMENT

A key to ensuring restart readiness is an effective self-assessment program. Self-assessments will determine the readiness for restart and therefore, better ensure successful subsequent operations. Structured self-assessments will be performed for Department Readiness, Program Readiness, and System Readiness. This is accomplished through the conduct of pre-milestone and periodic management assessments of performance and readiness effectiveness reviews. The collective perspective of the Management Review Committee will provide the necessary focus on critical work activities, synergistic effects, and issues that need to be resolved to support the objectives of the readiness review.

#### A. OBJECTIVES

Structured self-assessments will be conducted which will achieve the following objectives:

- Ensure that there are effective communications between station management and staff to assure that important issues are well-understood, facilitate teamwork, and instill a continued sense of ownership of the issues and results,
- Ensure that significant performance or other emergent issues identified during the outage are resolved satisfactorily,

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- Define a path for continued performance improvement through linkage of assessment results that are appropriate for longer-term resolution in the Phase 2/3 Performance Improvement Plans.

### 1. Conduct of Self Assessments

Self-assessment at CNS will provide the cornerstone for determining readiness for restart and evaluating the effectiveness of long-term improvement results. It also provides mechanisms for ensuring that momentum gained from processes, management, and culture changes continues. To be effective, self-assessments must be part of an environment that reinforces performance improvement as a way of doing business and must create the change mechanisms that will improve performance and sustain it at a high level.

The MRC will review self-assessments to ensure that the following issues are addressed:

- A vision of required organizational performance, clearly stated and shared by the organization.
- Ownership and accountability by organizational members to achieve the objectives through managed improvement. For example, the Phase 1 Plan assigns responsibility and accountability to action plan managers for completion of necessary improvement activities.
- A value system that promotes the proactive identification and correction of problems by empowered individuals. The management team provides management expectations and guidance necessary to ensure that managers can succeed.
- A focus on operational readiness by using performance criteria established to measure assessment results. This is provided by the restart performance measures developed in the Phase 1 Plan and readiness review criteria.

#### a. System Restart Readiness

- Prior to restart, each responsible system engineer will review the status of each system as indicated in Appendix E and will affirm restart readiness of the system to support safe and reliable restart and full power operation. The objective is to assess collectively and document system readiness from a hardware standpoint, to support management restart decisions, to reinforce ownership for system performance and improvement with system

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

engineers, and to lay the foundation for post-restart work/improvement prioritization. Appendix E provides a list of systems that must go through the System Restart Readiness process, summarizes applicable criteria, and provides the form that will be used.

As discussed in the Phase 1 Plan, the process requires both an initial multi-disciplined assessment of system status and a final assessment and affirmation (signature) by the System Engineer prior to restart (see Appendix E). Incomplete activities at the time of the final system readiness assessment will be identified to the MRC and their impact on restart determined. The System Engineer must prioritize those remaining items and determine whether inclusion into the Phase 2 or Phase 3 Plan is appropriate. Technical specification systems will be verified operable before entry into a mode where they are required to be operable.

- Walkdowns will be conducted to assess material condition. Specific emphasis will be placed on systems that are safety significant and important to plant reliability. Walkdowns at system operating temperature and pressure will be conducted as appropriate to confirm appropriate system restoration.
- System engineers will confirm the material condition of the system; the completion of walkdowns; the completion of the review of information related to significant recurring or repetitive equipment problems; development, implementation, and completeness of actions to address them; and the establishment of compensatory measures (as appropriate) for post-restart items/issues.
- System readiness assessments will be reviewed by the system engineer's supervisor, SORC, and the MRC as indicated in Appendix E. System readiness affirmations also will provide input into department readiness affirmations discussed in Section VIII.A.2.h below, and into the overall Management Review Committee's assessment of site readiness.

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### b. Department Restart Readiness

- Prior to restart, managers responsible for each major functional department indicated in Appendix F will affirm restart readiness of that department's ability to support an error-free startup and safe and reliable operations. This will ensure department completion of assigned restart actions; ensure that programs, processes, organization, and personnel/management capability are sufficient to support safe and reliable operation; ensure that post-restart work and improvement efforts are sufficiently defined, prioritized, scheduled, and controlled; and ensure that appropriate post-restart assessments and monitoring processes are in place.
- This assessment process is complementary to the individual program assessments described in Section VIII.A.2.i of this program. The process for conducting these departmental assessments incorporates input from program assessments under the department's responsibility and other assessment areas. Other areas include completion of assigned restart actions, organization, personnel and management capability, post-restart work and improvement efforts, and post-restart assessment and monitoring processes.
- Final department and program readiness affirmations will be presented by the assigned manager to the Management Review Committee. The compilation of these reviews form one of the principal bases for determining the station's readiness for restart.
- The checklist to be used by department managers to complete the self assessment of their departments prior to restart also is provided in Appendix F. This checklist is open-ended in that the questions for each principal area of assessment are intended to be explored to the extent necessary to determine that the affected area is acceptable for supporting the startup objectives and, as appropriate, that additional improvement actions are identified for post-startup implementation. Some of the actions specified and areas to be reviewed are not applicable to all departments (e.g., startup shift staffing), and should be disregarded if not applicable.

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### c. Program Readiness Assessments

Specific guidance for program restart assessments was provided in a December 9, 1994, memorandum to Program Managers. A general description of this guidance is provided below.

- Program owners will assess the health and effectiveness of programs owned by that department. The results of this assessment will be incorporated into the department readiness affirmations.

Past problems with programs at CNS resulted, in part, from unclear ownership, process control weaknesses, and technical program inadequacies. This program assessment is an important element of CNS performance improvement in that each program owner must establish clear accountability and responsibility for his/her programs. To ensure a consistent, thorough method of assessing site programs, specific assessment guidance has been developed (see Appendix H). This guidance and the list of programs that will be assessed are provided in Appendix H.

- Program owners are expected to provide periodic summaries of identified program weaknesses from internal and/or external evaluations, trending, and corrective action documents. Results of these assessments should be documented and recommended actions will be evaluated by the MRC for restart implications and/or appropriate long-term enhancements.

### d. Site Readiness Assessment

- The overall site readiness assessment will consist of a "program rollup" of several interfacing and overlapping inputs. These include the system and department readiness affirmations described above, the closeout/disposition of all restart list items, the review of organization and personnel adequacy and other input from personnel and management. See Appendix I.

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- The MRC will review and evaluate both the individual inputs and the rollup of these inputs and provide, in consultation with the Site Manager, a recommendation to the Vice-President Nuclear for restart authorization. The MRC readiness assessment will be completed before initial mode change. Preliminary or intermediate assessments will be conducted as determined appropriate by the MRC, SORC, the Site Manager, or the Vice-President Nuclear. The SRAB also may review site readiness for initial mode change as it deems appropriate.
- A Power Ascension Plan has been prepared and approved by senior CNS management. This document provides specific requirements for startup management, preparing plant hardware, and methodologies that will be used during the actual startup process.

### **3. Review of Self-Assessment Results**

The review of the results of the management self-assessments to assure that organizational performance meets expectations for plant restart will be performed by the MRC. This review provides the vehicle for establishing and reinforcing expectations with assigned managers, receiving feedback on organizational performance results, and obtaining early feedback on corrective action for performance deficiencies or emergent issues that may impact performance results.

The schedule for the completion of assessments and presentations to the MRC will be controlled by the Phase 1 Project Manager or designate. This individual will ensure that review briefings are scheduled, assist in clarifying assessment processes and requirements, and track and assign further assessments (or other actions) which may evolve from management review of the results.

## **IX. QA OVERSIGHT**

Independent oversight of the Restart Readiness Program will be conducted by the Quality Assurance Division through assessments of selected Phase 1 Action Plans, scheduled audits, and specific evaluations of significant emerging issues. Audits in progress and scheduled will emphasize evaluation of identified and potential areas of weakness within the scope of the respective audit. Assessments and surveillance activities will be planned and implemented to focus on evaluation of field performance and operational activities executed to correct identified deficiencies and prepare the plant for return to safe power operation.

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APPENDIX A - PHASE 1 CLOSEOUT

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

NUCLEAR POWER GROUP PHASE 1 PLAN  
CLOSEOUT REPORT

PURPOSE AND SCOPE

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### **NUCLEAR POWER GROUP PHASE 1 PLAN CLOSEOUT REPORT PURPOSE AND SCOPE**

The purpose of the Nuclear Power Group Phase 1 Plan Closeout Report ("Closeout Report") is to identify and summarize the actions that have been taken at Cooper Nuclear Station (CNS) to resolve the issues identified in the Phase 1 Plan. The Phase 1 planning process involved a comprehensive evaluation of issues identified in numerous sources including NRC enforcement actions, the Diagnostic Self Assessment Team (DSAT) Report, the Confirmatory Action Letter (CAL), and issues self-identified by CNS management. Based on a comprehensive evaluation and screening of the issues identified in these various documents, the Startup Plan Team responsible for development of the Phase 1 Plan identified the subset of management, program/process, and material condition issues that required resolution prior to startup. The Phase 1 issues are addressed in the Plan's three constituent parts: (1) the Phase 1 Action Plans; (2) Material Condition Items; and, (3) the Phase 1 Action Item List. Lists of the three sets of issues are included in Enclosures 1, 2, and 3, below.

The Closeout Report will assess the effectiveness of the actions undertaken at CNS to closeout each of the issues addressed in the Phase 1 Plan. In sum, the purpose of the assessment is to determine whether the issues set forth in the Phase 1 Action Plans, list of material condition items, and Phase 1 Action Item List have been effectively addressed -- or remain barriers to safe plant restart. In addition, the assessment will gauge whether actions have been taken to clearly communicate management's expectations regarding the Phase 1 improvement initiatives.

The Closeout Report will be structured first, to describe the purpose, development, and scope of the Phase 1 Plan. An assessment of the actions taken at CNS to closeout the issues set forth in each part of the Phase 1 Plan will be summarized in the Closeout Report. A more detailed, issue-by-issue explanation of the actions taken to close out the Phase 1 issues included in the Action Plans, List of Material Condition Items, and Action Item Lists will be available in matrices found in Appendices A, B, and C of the Closeout Report. In addition, closure packages for each of the Phase 1 Action Plans -- containing documentation verifying closure of each action plan step -- will be available for review at CNS.

# PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

## ENCLOSURE 1

### PHASE 1 ACTION PLAN

Action Plan

ID #                      Issue

- |     |  |
|-----|--|
| 1.1 | Revise the SRAB Charter; Address Member Independence and Revise Membership                       |
| 1.2 | Improve SORC Effectiveness   |
| 1.3 | Independent Assessment of Startup Action Plan, Confirmatory Action Letter, and Condition Reports |
| 1.4 | Quality Control  |
| 2.1 | Corrective Action  |
| 2.2 | Departmental Performance Indicator Goals/Monitoring  |
| 3.1 | Establish and Implement a Plan for Integrated Work control, planning, and Scheduling             |
| 3.2 | Implement Effective LCO Tracking and Work Coordination Interface System                          |
| 4.1 | Plant Configuration Verification (1 of 2)  |
| 4.1 | Plant Configuration Verification (2 of 2)  |
| 4.2 | Identify and Review Priority Vendor Manuals  |

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- 4.3 NED Review of Procedures and DCNs to Ensure Configuration Control
- 4.4 Efficient Resolution of Design-Basis Questions
- 4.5 Surveillance Procedure Adequacy
- 4.6 SORC Approved MWRs and Subsequent Design Changes
- 4.7 Inadequate Calculation Control Prior to Implementation
- 4.8 Multi-discipline Team System Reviews
- 5.1 Improve NED Site Support during Startup and Power Ascension (S/PA)
- 5.2 OD/OE Review
- 6.1 Pre-Conditioning
- 6.2 IST and Surveillance Testing
- 7.1 Startup Experience Following Extended Outages
- 7.2 Open OERs
- 7.3 Reactor Vessel Thermal Transient
- 8.1 Develop Procedure Hierarchy to Identify Controlling Procedures
- 8.2 Special Instructions

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- 8.3      Screen Backlog of Procedure Changes for Significant Items for Startup
- 8.4      ADAM Changes
- 8.5      Method for Handling Surveillance Test LCOs Without Allowed Outage Times
- 9.1      Resolve the Lack of Program Ownership in the NPG
- 9.2      Nuclear Safety Awareness
- 9.3      Management Observations - Field Coaching Team Plus Management Observations
- 9.4      Industrial Safety
- 9.5      Licensing Submittals

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### ENCLOSURE 2

#### MATERIAL CONDITION ISSUES

The following list of material condition issues can be found in Appendix B of the Phase 1 Action Plan:

- Service Water switches plugging with silt.
- Low pegging of RHR HX divider plate indicators due to plugging.
- 111 Type 2 and 827 Type 4 open items; 2400 discrepancies unresolved (tagging, labeling, physical repairs, procedure revisions).
- Tygon tube "gutter" to address leak around flanged connection on "A" RHR HX.
- RHR pump 1B failure to achieve reference value for number of test (e.g., Dp @ 10 psi short of reference value).
- Cause of shutdown cooling isolations was leakage past pump minimum flow valve that indicated closed but was not fully seated.
- Caution tag informing operators that operation of DGSA-V-37 or -38 with failing PCV could overpressurize DG H&V air piping.
- Unexpected opening of HPCI pump minimum flow valve during surveillance testing at full power (1/19/94).
- Leakage past seat in Vessel level injection valve NBI-SOV-738/739; isolation of NBI-V-577A/B.
- Control switch for main turbine bearing lift pump is in manual to prevent operation while the speed input to its control circuit is erratic.
- 200 gpm leakage by the seat of the B RFP minimum flow valve, which is kept isolated as a result.
- Due to leakage by the seat of the demin water LCV, it is isolated. This requires operators to manually open DW-34 prior to starting the Mechanical Vacuum Pump from the MCR.

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

- Caution tag guidance not to bias RFC-MA-84A/B positive due to causing RFPs not to go into track and hold following a scram (93-02).
- Monitoring of potential erosion of portion of RHR system not established as required by modifications made to flow trim on valves MO-27A/B and 34A/B.
- Leakage in REC piping not adequately monitored.
- Installation of SCRAM discharge level transmitters with improper bolting.
- During B Loop shutdown cooling, flow turbulence caused "chugging" sounds in vicinity of HX bypass valve, RHR-MO-66f3.
- Failure to test or maintain essential relays on a regular basis, including 18 ground detection relays (50G) on 4160V buses 1F and 1G and Emergency Transformer overvoltage relays.
- Two overhead troughs outside MVP room have drain hoses that end outside sump barriers, creating potential for pooling in corridor.
- Possible cavitation noise at water box south of downstream of RF-28MV.
- Excessive failures of LLRTs on one valve without apparent root cause or detailed evaluation.
- Approximately 250 terminations require repair.
- Work to replace exhaust manifold on #2 DG was not in accordance with vendor specifications.
- Contrary to vendor specifications, bolts on "A" SWP coupling were not tightened with a torque wrench, bolting was not cleaned and lubricated prior to assembly, and tightening pattern was not used by work crew.
- Work performed on MWR 94-4203 and MWR 94-2923 (8/2/94) to set impeller clearance on "A" service water pump not in accordance with vendor specifications.
- Fuel pump (5L, #2 D/G) replaced using special instruction that did not include torquing of bolts.

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

- Degraded condition of MO39B RHR MOV is not identified in the MWR system. Operability Determination No. 94-50 identifies installation of 250V control relay in place of 125V control relay for Auxiliary oil pump on HPCI pump.
- Operability Determination No. 94-58 identifies installation of an undersized relief valve on the EDG starting air system (DGSA-RV-15RV).
- Operability Determination No. 94-63 identifies that various check valves installed in the NBI, RCIC, RR, MS, and HPCI were not supplied safety-related.
- Operability Determination No. 94-77 identifies lockwashers used on RHR pump motors A,B,C, and D were supplied commercial grade on an essential purchase order and may not be qualified for use.
- The plant's corrective action did not include checking other motor boltings on the three remaining RHR pump motors.

# PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

## ENCLOSURE 3

### PHASE 1 PLAN ACTION ITEM LIST

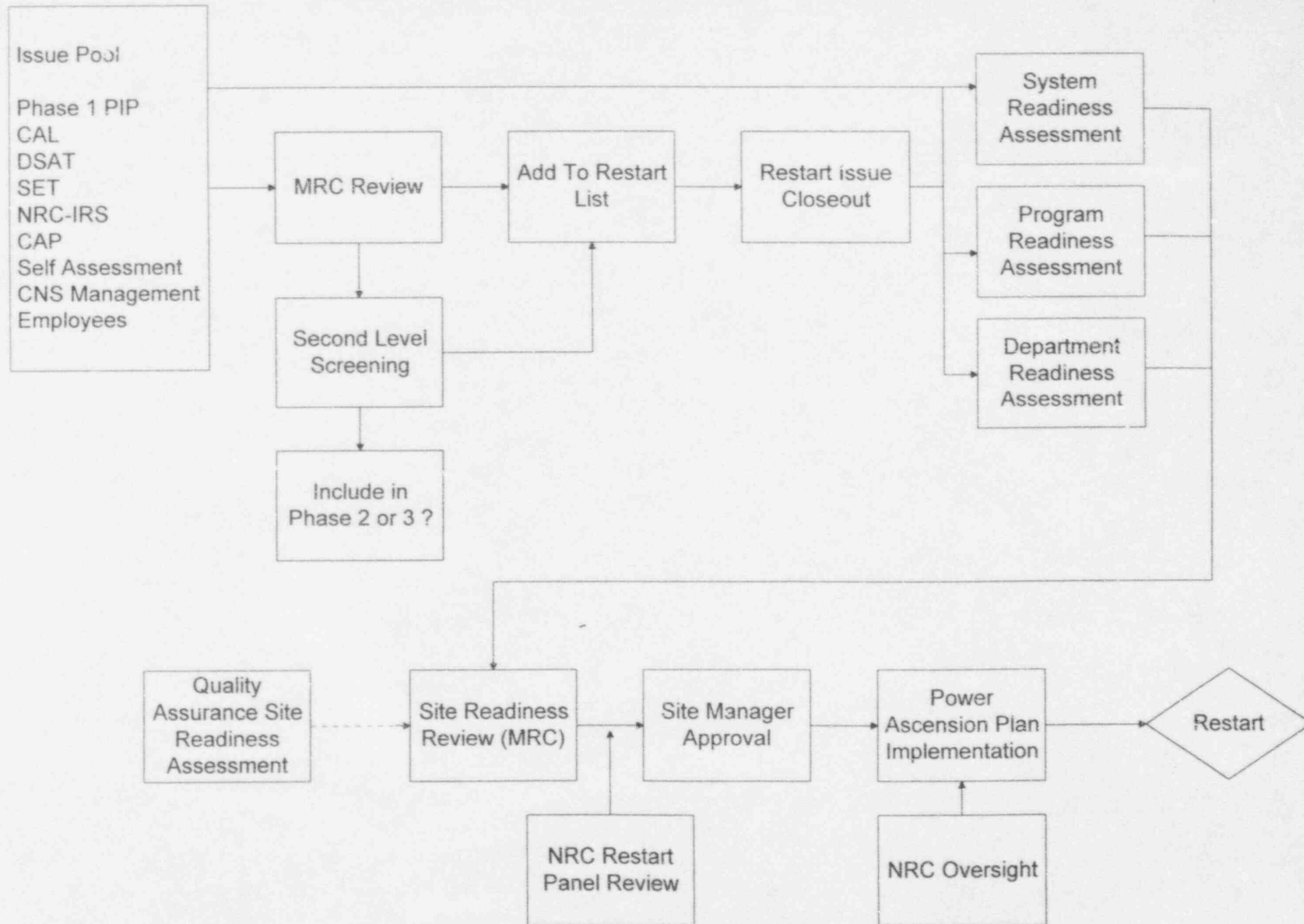
The following items are delineated in Appendix A of the Phase 1 Plan:

- Determine whether control of spare parts for safety classification is a startup issue.
- Submit letter to NRC to clarify MOV testing schedule.
- Resolve CS-5A maintenance and testing commitments.
- Complete OER review and determine generic implications.
- Resolve recommendations from MWR Maintenance Work Practices Review.
- Determine whether action is necessary prior to startup for the "design change correcting the problem" issue.
- Evaluate the power ascension plan for integration with Phase 1 Plan, including establishing management expectations (e.g., for error-free startup).
- Determine whether action is necessary to ensure technical adequacy of design changes.
- Ensure that specific issues are addressed in revised clearance order program: (1) non-operators operating equipment; (2) pull-to-lock protection use; (3) overriding danger tags; and, (4) independent verification.

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

APPENDIX B - RESTART READINESS PROCESS FLOW CHART

# CNS READINESS REVIEW PROGRAM



PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

APPENDIX C - SUMMARY RESTART LIST

## COOPER NUCLEAR STATION

### SUMMARY RESTART LIST

The following provides the CNS Summary Restart List. This list addresses broad actions that must be completed prior to restart. They are the framework for the Phase 1 Performance Improvement Plan. A more detailed list, the Integrated Restart List, provides a detailed listing of specific activities that must be completed prior to CNS restart.

1. **Revise the SRAB charter; address member independence and revise membership**

Ensure SRAB procedures and membership provide effective independent review, audit and oversight of NPG activities to ensure Cooper Nuclear Station is safely operated and maintained. Changes must ensure SRAB is self-critical and challenges line management.

2. **Improve SORC effectiveness**

Improve independent oversight ability of SORC to ensure that an appropriate review is performed for all proposed additions, deletions, and changes to safety-related activities.

Enhance the process utilized by SORC to ensure sufficient independent oversight is maintained.

3. **Independent Assessment of Startup Action Plan, Confirmatory Action Letter, Condition Reports**

To conduct the independent assessments as described above and provide timely reporting of results as appropriate. To ensure a quality startup plan and that significant issues are appropriately addressed prior to startup.

4. **Quality Control**

1. Provide increased consistency in the application of QC requirements.
2. Provide increased QC inspection for additional activities.
3. Impose limitations on the amount of persons reviewing and specifying QC requirements.

4. Coach/counsel QC personnel on new program requirements.
5. **Corrective Action**

Use the dedicated Corrective Action Program group to provide clear management of the program and establish a self-critical root cause culture at CNS which ensures rigorous investigation and effective correction of all conditions adverse to quality.
6. **Departmental Performance Indicator Goals/Monitoring**

To develop management tools to obtain and monitor challenging goals for key station performance indicators.
7. **Establish and implement a plan for integrated work control, planning, and scheduling**

Correct existing deficiencies in work package content, work coordination, and daily scheduling through implementation of a work process improvement plan.
8. **Implement effective LCO tracking and work coordination interface system**

Improve tracking of technical specifications-related equipment that is out of service to limit challenges to safety systems caused by work coordination problems.
9. **Plant Configuration Verification (1 of 2)**

Determine if the standby alignment of the plant safety systems is properly specified such that, if called upon to automatically initiate, the systems will meet their design objectives.
10. **Plant Configuration Verification (2 of 2)**

Perform valve, switch, breaker, and damper lineup walkdown and initiate corrective action for discrepancies.
11. **Identify and Review Priority Vendor Manuals**

Determine if the backlogged safety-related vendor manuals/vendor manual changes and certain non-safety related vendor manuals/vendor manual changes have recommended PMs that should be addressed prior to startup.

12. **NED review of procedures and DCNs to ensure Configuration Control**

Provide mechanisms for assuring that changes to configurations reflect station design. This includes strengthening review of drawing changes and specific procedures.

13. **Efficient Resolution of Design-Basis Questions**

Provide a more efficient method of responding to design basis questions and identifying design basis information and upgrade the quality, detail and accuracy of 10CFR50.59 evaluations before they are submitted to SORC for review and approval.

14. **Surveillance Procedure Adequacy**

Complete surveillance procedure validation for CSCS and RPS.

15. **SORC Approved MWRs and Subsequent Design Changes**

Provide added assurance that SORC approved MWRs used to implement modifications receive a higher level technical review to guard against design deficiencies or violation of design basis.

16. **Inadequate Calculation Control Prior to Implementation**

Ensure calculations that are approved prior to the associated field modification/implementation are appropriately identified.

17. **Multi-discipline Team System Reviews**

Complete multi-discipline review of all open items and conduct walkdowns for the RHR and SBGT systems. Revise system checklist for walkdowns and conduct multi-discipline reviews of all critical systems prior to startup.

18. **Improve NED Site Support during Startup and Power Ascension**

Provide a coordinated review of the NED/CNS Engineering functions and interfaces related to startup and power ascension, and develop an upgraded interface agreement better defining work function, and responsibilities

Provide augmented NED on-site support for CNS startup and power ascension activities.

19. **OD/OE Review**

Review ODs and OEs for degraded and nonconforming conditions that currently exist and assess startup significance.

20. **Pre-Conditioning**

Complete resolution of the CAL pre-conditioning issues.

21. **IST and Surveillance Testing**

1. Verify IST program scope and testing adequacy by constructing the basis for component IST requirements and identifying discrepancies.
2. Conduct an evaluation of [types and numbers of] surveillance tests performed to determine program adequacy.

22. **Startup Experience Following Extended Outages**

Conduct special operating experience search for startup issues following long shutdown.

23. **Open OERs**

Evaluate current open OERs for startup significance.

24. **Reactor Vessel Thermal Transient**

Review the reactor vessel and attached piping thermal transients and determine that the thermal fatigue limits have not been exceeded and assure margin adequate for further operation exists.

25. **Develop procedure hierarchy to identify controlling procedures**

Identify all procedures which control and take precedence over other procedures. Screen lower level procedures for compliance with controlling procedures.

26. **Special Instructions**

Develop procedural controls and methods that ensure work performed using Special Instructions is performed at a quality and safety level consistent with that of existing SORC approved procedures.

27. **Screen backlog of procedure changes for significant items for start-up**

Identify all in-process procedure changes requiring approval prior to start-up or early in start-up sequence and ensure entry into tracking system.

28. **ADAM Changes**

Purge ADAM (class "B" model, as defined in NUREG 0654) of all reference to dose, dose rate and any use thereof for determination of PARs.

29. **Method for handling surveillance test LCOs without allowed outage times**

Provide administrative controls for allowed out-of-service times for Technical Specification surveillances.

30. **Resolve the lack of program ownership in the NPG**

Establish effective ownership for programs which affect reactor safety.

31. **Nuclear Safety Awareness**

Strengthen the NPG nuclear safety culture and establish high standards of safe, reliable nuclear plant operation.

32. **Management Observations - Field Coaching Team Plus Management Observations**

Increase Management and Supervisory involvement in the field in order to:

1. Assess station material conditions
2. Assess compliance with established radiological and industrial safety work practices
3. Assess compliance with station work documents
4. Coach and mentor personnel in the field
5. Re-enforce management's expectations and standards in the field
6. Improve organization communication channels

### 33. Industrial Safety

One of the major objectives of the District is to protect its employees and the public from accidents. Whenever economically possible, the District will eliminate hazards from employee work areas. However, where hazards cannot be economically removed, it becomes the responsibility of each supervisor and employee to recognize these hazards and deal with them in a manner that will prevent accidents.

### 34. Licensing Submittals

Development of internal procedures and practices that assure that all licensing submittals contain accurate information and that all commitment made to external agencies are completed on time.

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

APPENDIX D - POTENTIAL RESTART ITEM EVALUATION FORM

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### RESTART WORK ITEM ADDITION BASIS CHECKLIST

RESTART ITEM IDENTIFIER: \_\_\_\_\_

Check the basis for adding the item to the Restart List. The absence of a mark indicates that the item should not be added to the Restart List. If no criterion is satisfied, this form still must be completed and signed by the Responsible Manager.

#### Level I Screening Evaluation:

\_\_\_\_\_ Issues were evaluated to identify potential safety or operability concerns. These issues were automatically categorized as restart items.

#### Level II Screening Evaluation:

Issues that were not categorized as restart items during the Level I screening evaluation must be reassessed to determine if there are other reasons for considering them restart items. Satisfying any of the following criteria qualifies the item as a restart item.

If an event or finding involves or could reasonably lead to:

- \_\_\_\_\_ an event, component failure, deficiency or condition that could result in operation in a LCO Action Statement, or
- \_\_\_\_\_ failing to perform a required surveillance test or other license requirement or meet a commitment to an outside agency, or
- \_\_\_\_\_ failure of power production equipment that could result in a plant transient, derating, or plant shutdown, or
- \_\_\_\_\_ conditions that have resulted in repetitive safety system equipment failures, or
- \_\_\_\_\_ potential licensing basis deficiencies requiring maintenance to restore conforming conditions (i.e., deficiencies in safety-related or other qualified equipment, e.g., EQ, Appendix R, or seismic), or
- \_\_\_\_\_ potential design basis deficiencies, i.e., deficiencies in safety-related equipment or other technical specification equipment not in conformance with the CNS USAR, or
- \_\_\_\_\_ deficiencies in configuration management programs, processes, engineering analysis codes, or documentation that have, or could have, a reasonable likelihood of affecting equipment operability, or
- \_\_\_\_\_ conditions that may create an unacceptable potential for an unplanned radioactivity release to the environment or discharge effluent to the environment which is in excess of regulatory limits.

Based on the above, the issue should \_\_\_\_\_/should not \_\_\_\_\_ be added to the Restart List.

\_\_\_\_\_  
Screened By

\_\_\_\_\_  
Date

\_\_\_\_\_  
Responsible Manager Signature

\_\_\_\_\_  
Date

# RESTART WORK ITEM ADDITION/DELETION FORM

Retain \_\_\_\_\_ Add \_\_\_\_\_ Delete \_\_\_\_\_

<b>RESTART ITEM IDENTIFICATION:</b> (RESTART LIST#, WORK DOC.#, SYS, ETC.)	<b>RESTART ITEM OWNER</b>
	<b>ADDITION/DELETION INITIATOR</b>
<b>ITEM/WORK DESCRIPTION:</b>	
<b>REASON FOR ADDITION/DELETION:</b>	
<b>EVALUATION:</b>	
Cognizant System Engineer/Supervisor Signature _____ Date _____	
-or-	
Cognizant Manager Signature _____ Date _____	
<b>MANAGEMENT REVIEW COMMITTEE (MRC) APPROVAL</b>	
MRC Approval Signature _____ Date _____	
<b>For Group items, list all applicable documents:</b>	

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

APPENDIX E - SYSTEM READINESS ASSESSMENT

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### SYSTEM READINESS ASSESSMENT

The following activities will occur as part of the final stage system readiness reviews.

Final System Readiness review (See attached form)

1. The System Engineer will review and affirm that for the subject focus system:
  - a. The system readiness review is complete with any concerns resolved.
  - b. System Engineer material condition walkdowns on focus systems are complete.
  - c. Emergent items since completion of Rev. 0 of the Restart List have been properly dispositioned as restart or non-restart.
  - d. Reviews of information related to recurring equipment/system problems (adverse trends) have been completed and a plan to address open items is in place -- compensatory measures have been established, as appropriate.
2. Engineering Manager, Plant Manager and Site Manager approval have been obtained.

**PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM**

**FINAL SYSTEM READINESS REVIEW CHECKLIST**

SYSTEM NAME: \_\_\_\_\_ SYSTEM ENGINEER \_\_\_\_\_

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

- \_\_\_\_\_ All multi-discipline review items have been dispositioned.
- \_\_\_\_\_ Identify and disposition items that have emerged since the most recent multi-disciplined review.
- \_\_\_\_\_ MRC-approved restart items have been completed or appropriately dispositioned.
- \_\_\_\_\_ Identify system MWR and CR backlogs and address/discuss cumulative effects.
- \_\_\_\_\_ Perform final system walkdown to EOI 93-01.
- \_\_\_\_\_ Document results and initiate process to followup on significant findings.

**REMARKS** (The System Engineer can provide any additional relevant information deemed necessary to provide a complete summary of system readiness -- provide continuation sheets as necessary.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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**ENGINEERING MANAGEMENT REVIEW & APPROVALS**

Supervisor Signature \_\_\_\_\_ Date \_\_\_\_\_

Engineering Mgr. Signature \_\_\_\_\_ Date \_\_\_\_\_

**COMMENTS:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**MANAGEMENT REVIEW COMMITTEE (MRC) APPROVAL**

\_\_\_\_\_  
MRC Chairman Date

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

Critical System List

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### Critical Systems List

1. Service Water
2. Control Rod Drive
3. Core Spray
4. Electrical Equipment
5. Residual Heat Removal
6. Reactor Core Isolation Cooling
7. Primary Containment
8. Main Steam
9. Diesel Generator
10. High Pressure Coolant Injection
11. Nuclear Boiler Instrumentation
12. Instrument Air
13. Standby Gas Treatment
14. Reactor Equipment Cooling
15. Primary Containment Isolation System
16. Reactor Protection System
17. Heating & Ventilation (Essential)
18. Standby Liquid Control
19. Neutron Monitoring
20. Automatic Depressurization
21. Radiation Monitoring
22. Turbine Generator Controls
23. Switchyard

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

APPENDIX F - DEPARTMENT READINESS ASSESSMENT

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### Department Restart Readiness Assessment

Departments in the General Office and at CNS will conduct an assessment of actions needed to support department readiness for restart, addressing areas indicated below. Readiness will address both hardware and software considerations for restart and beyond. The overall objective of this effort is not just to ready the plant and site for a moment in time, but to lay the foundation to carry CNS forward with effective operations beyond restart.

#### Applicability

- Site Manager direct reports and their direct reports.
  - Plant Manager
    - Manager, Engineering
    - Manager, Operations
    - Manager, Maintenance
    - Manager, Radiological
    - Manager, Scheduling
  - Senior Manager of Safety Assessment
    - Manager, Licensing
    - Manager, Events Analysis
    - Manager, Nuclear Safety Support
  - Senior Manager of Site Support
    - Manager, Emergency Preparedness
    - Supervisor, Security
    - Manager, Site Services
    - Manager, Nuclear Training
- Corporate Division Manager of Nuclear Engineering and Construction
  - Division Manager, Nuclear Engineering and Construction
    - Manager, Nuclear Engineering
    - Manager, Engineering Support

# **RESTART READINESS PROGRAM**

## **DEPARTMENT READINESS ASSESSMENT**

**Department:** \_\_\_\_\_

**Department Manager:** \_\_\_\_\_

**IRG Review:** \_\_\_\_\_

**MRC Approved:** \_\_\_\_\_



## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### DEPARTMENT RESTART READINESS ASSESSMENT CHECKLIST

— Assess the current management and organizational structure. Assure that the organizational responsibilities, functions and interfaces are adequately defined, necessary training is completed, and appropriate communication of startup objectives, Restart Readiness Program and the Startup and Power Ascension Plan has occurred. Determine if there are any changes required to support startup. Describe long-term plans for organizational improvement.

— Assess the backlog of outstanding commitments to assure that startup objectives can be met. Assure that all assigned restart items have been verified as completed.

— Complete the review and evaluation of the program assessments assigned to your department. In the aggregate, determine if there are any deficiencies or other performance results from the program assessments that would prevent achieving the startup objectives.

— Review past performance trends from an assessment of the corrective action program results. Review open and closed condition reports that are associated with the department and assess their generic implications on performance as it might relate to achieving the startup objectives. Determine if the condition report backlog has been correctly characterized and is being managed to closure in a timely manner.

— If applicable, assess the adequacy of snift staffing plans to support the Startup and Power Ascension Plan.

— Determine the current workload and management capability. Determine if the post-restart workload is adequately characterized, prioritized and scheduled. Determine if appropriate performance monitoring processes are in place and periodic assessment established.

— Describe any longer-term, departmental improvement actions. Describe plans for conducting post-restart assessments.

— Who are the "customers" of the department? What mechanisms are in place to assess how effectively the department is meeting its needs. By polling department "customers," determine how effective these mechanisms are in providing feedback (i.e., what do customers say versus that the feedback mechanisms are saying). What enhancements are planned to improve inter-departmental communications with customers.

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### DEPARTMENT ASSESSMENT READINESS CHECKLIST (cont)

Specific organizations are to include in their self assessments the following activities to support startup as indicated:

#### Operations

- \_\_\_ Evaluate the adequacy of surveillance test scheduling to ensure there are adequate checks, responsibility assignments, and controls such that all required surveillance tests are completed.
- \_\_\_ Ensure that the startup schedule is available and reasonably sequences activities necessary to support plant startup.
- \_\_\_ Assess outstanding equipment clearances to ensure that there are no outstanding operability issues.
- \_\_\_ Evaluate the nature and extent of any operations issues, including a backlog review of maintenance, engineering, and temporary modifications. Evaluate the potential for these to impact the objective of an error-free start-up.

#### Maintenance

- \_\_\_ Evaluate post-maintenance tests, plans and schedules to ensure that tests are completed successfully during startup.

#### Events Analysis

- \_\_\_ Determine the status and acceptability of operating experience review for any unresolved SOER and OER issues.

#### Licensing

- \_\_\_ Review the outstanding external commitment assessment results to determine that all appropriate items have been resolved.

#### Training and Operations

- \_\_\_ Evaluate simulator training results for operating crews for startup.

\_\_\_ Attach this checklist (completed) to the Department Restart Readiness Management Verification form (attached).

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

APPENDIX G - LICENSING READINESS

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

**LICENSING REGULATORY CLOSURE AFFIRMATION**

1. The Licensing Manager shall ensure that reasonable documentation exists to verify completion of all restart actions agreed upon between the NRC and NPPD.
2. The open license tracking items have been reviewed and determined acceptable for startup.
3. All open commitments to outside regulatory agencies have been reviewed and determined to be acceptable for startup.

Exceptions:

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Licensing Manager

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MRC Approval

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

APPENDIX H - PROGRAM READINESS ASSESSMENT

# **RESTART READINESS PROGRAM**

## **PROGRAM READINESS ASSESSMENT**

**Program:** \_\_\_\_\_

**Program Owner:** \_\_\_\_\_

**Program Manager:** \_\_\_\_\_

**Program ID Number:** \_\_\_\_\_

**Independent Review Group Recommendation:**

- ☐ **Requires Restart Assessment**
- ☐ **Requires Post-Restart Assessment**
- ☐ **Acceptable At This Time**

**IRG Reviewer:** \_\_\_\_\_



## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### INITIAL PROGRAM ASSESSMENT & SCREENING

PROGRAM: \_\_\_\_\_ OWNER: \_\_\_\_\_

When completing the initial program self-assessment screening or the more detailed self-assessment, it is important to provide the appropriate level of information. One word answers are inadequate, and pages of detailed descriptions are unnecessary and not required. The following paragraphs are intended to provide the program owner with sufficient guidance for the program review documentation. Throughout the self-assessment processes, emphasis should be placed on program impact on CNS restart criteria. Obviously, the expectation is that all CNS programs will eventually achieve and maintain a recognized level of excellence. However, the first step in meeting that objective is to recognize current deficiencies and prioritize actions to address the problems uncovered. The program review process will help in identifying the deficiencies, focusing on the impact to CNS restart will assist in establishing the priorities.

If the conclusion reached by the program owner is that the program status supports CNS restart, substantiated by the logic and rationale associated with the answers to the following questions, the program will not need a more in-depth self-assessment process outlined in the following discussion. The program will be reviewed by the Management Review Committee to validate the status and assure adequacy to support restart.

The program manager should document the conclusions from the assessment in the format of the following individual sections. The completed assessments will be retained by CNS as appropriate for review and assessment by QA and the NRC.

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### INITIAL PROGRAM ASSESSMENT AND SCREENING

#### **A. Describe the Program and Scope.**

Why is the program in existence? Is the program mandated by regulation? Is it referenced or found in Technical Specifications, USAR or other licensing base documents? If the program isn't based on regulation, what is the basis for its existence? The important aspect is for the owner to understand the overall purpose of the program and have the ability to articulate that understanding in the terms of describing the primary objective or mission of the program.

Explain the program impact on nuclear safety. Does the program have a regulatory compliance impact? Explain how the program impacts operations. Those programs with strong ties to plant operation should receive increased attention and scrutiny. In answering this question, the impact on plant reliability should be considered.

Describe the changes in the program, including those resulting from the Phase I Performance Improvement Plan, DSAT, SET, or other evaluations.

#### **B. Describe the performance indicators for the program.**

How is the success of the program measured? What data and performance indicators are available? Are they consistent with industry standards? Are the indicators complete and comprehensive, i.e., do they provide the true picture of program performance? How are these performance indicators used to determine the status of the program? Consider recent trends. Describe any actions taken based on the information and analysis associated with performance indicators? What type of feedback loops have been constructed to assure the actions taken are effective? (Questions C through F address performance indicators from external organizations).

#### **C. Has this program been the subject of any NRC inspection or INPO evaluation during the past 18 months? If so, what were the overall results?**

Has the program been the subject of an NRC inspection, a routine NRC resident report or the subject of a special inspection? All pertinent external evaluations during the past 18 months should be included. If the NRC or INPO has looked at this program over the past 18 months, what were their conclusions? What was done to the program as a result of these findings? What has changed (positive or negative) regarding the program since the time of the inspection? Do the external results correlate with internal results? If not, can they be explained or the differences justified?

#### **D. Have any NRC Notices of Violations (NOVs) been written on this program over the past 18 months? If the answer is yes, describe the number and their relative significance using the NRC rating system and your own words.**

Explain the relative significance of the violations. The response to the NOV is a source of this information along with your understanding of the program status at the time of the violation.

#### **E. Have any industry experience notifications pertaining to this program been received during the past 18 months? Summarize the responses to these notifications.**

Has the program been the subject of an NRC Information Notice, Generic Letter, or Bulletin. Has the program been the subject of INPO SOERs or SERs. Has the operating experience review program provided any adverse performance input applicable to this program? Are there any known industry notifications pending on this program?

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### INITIAL PROGRAM ASSESSMENT AND SCREENING (cont)

- F. Have any Condition Reports (CRs) been written against the program within the past 18 months? How many remain open? What does the CR process tell about the program?

The number of Crs has a bearing on program performance, but the number alone is insufficient to tell the full story. What are the relative ages of the Crs? What is the breakdown of categories (significance)? How are Crs being managed? In the aggregate, what does the CR process indicate about program adequacy?

- G.. Provide your assessment of the overall status of the program?

Given all of the information compiled above, how would you rate the current program adequacy. This should be done in terms of adequacy to support CNS startup, and in terms of adequacy relative to successfully accomplishing the program's primary objective. The base criteria defining adequacy are contained as the restart criteria in the Restart Readiness Program. Would you conclude that this program's status is adequate to support restart of the Cooper Nuclear Station? Provide sufficient logic and details to support your conclusion. You will be expected to review your position with the MRC.

Comments:

Program Owner/Date: \_\_\_\_\_ / \_\_\_\_\_

Responsible Manager/Date: \_\_\_\_\_ / \_\_\_\_\_

Reviewed by MRC/Date: \_\_\_\_\_ / \_\_\_\_\_

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### DETAILED PROGRAM SELF-ASSESSMENT PROCESS

This process is implemented when the results of the initial self-assessment screening process discussed above, requires additional, detailed self-assessment to confirm restart readiness or determine necessary compensatory actions. The answers to previous screening questions are used as a starting point for further self-assessment. The objective is to determine acceptable program standards, current program status, actions required prior to startup, and longer-term performance improvement issues.

This self-assessment process is expected to result in a short report (5 - 10 pages) that includes a description of the actions that have been taken to bring the program to a level of adequacy that supports CNS restart.

The department manager should document the conclusions from the assessment in the following individual section format. The completed assessments will be retained by CNS for future reference.

- A. List the current industry standards (or other criteria) against which the program should be measured?

It is important to understand the criteria and standards used by the industry to determine program success. Standards may be found in reference material, including material from INPO, EPRI, the NRC and CNS licensing documents. The standards need not be exhaustive, but they should provide the program owner with a high confidence that they are appropriate for the purpose.

- B. Describe any current program performance deficiencies, concentrating on how the program is not meeting the above standards or criteria.

Use the initial program screening efforts to determine the set of problems and/or program shortcomings that led to the conclusion that the program was not adequate to support CNS start-up. Is the list complete? Are there other program issues that need to be considered? How can we be sure all significant program deficiencies have been identified? Address people, process and management system deficiencies that relate clearly to shortfalls in performance.

- C. What are the causal factors or root causes associated with program deficiencies?

Corrective actions cannot be adequately constructed until there is an understanding of the underlying causal factors or root causes. In this step a root cause determination needs to be performed consistent with the deficiencies and the impact of the program on CNS restart.

- D. Considering the deficiencies and the causal factors, what corrective actions have you taken to improve the program to a level of adequacy for CNS restart?

Once the causal factors have been determined, corrective actions can be developed. At this point interest is only on those actions required to raise program performance to a level adequate to support CNS restart. The program manager should not wait for MRC review to initiate the required corrective action.

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### INITIAL PROGRAM ASSESSMENT AND SCREENING (cont)

- E. Describe longer-term (post startup) actions that will enhance program performance to a level that will meet our long term objectives of achieving top-quartile performance in safety, production and cost performance.

The final step in the self-assessment process is to consider other program improvement actions that are not required for startup, but that will raise the program to the desired level of performance.

Department Manager/Date: \_\_\_\_\_ / \_\_\_\_\_

Reviewed by MRC/Date: \_\_\_\_\_ / \_\_\_\_\_

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### FOCUS PROGRAM LIST

#### Cooper Nuclear Station

1. Operability Determinations/Evaluations
2. Surveillance Testing
3. LCO Tracking
4. Plant Labeling
5. Process Instrumentation Calibration Program
6. Operating Experience Reviews
7. Corrective Action Program
8. Safety Review and Audit Board
9. Station Operations Review Committee
10. Assessment (Quality Assurance)
11. Industrial Safety
12. Records Management
13. Radwaste Storage and Disposal
14. In-service Inspection
15. In-service Testing
16. Appendix J Testing
17. Check Valves
18. Welding
19. Erosion/Corrosion
20. Snubbers
21. Commercial Grade Dedication

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### FOCUS PROGRAM LIST (CONT)

#### Cooper Nuclear Station (cont)

22. Shelf Life
23. Reliability and Performance Monitoring
24. Shift Technical Advisor Program
25. Vendor Manuals
26. System Engineering
27. MIC Monitoring and Mitigation
28. Equipment Data File
29. Predictive Maintenance
30. Preventative Maintenance
31. QA Audit/Surveillance Program
32. QA Supplier Audit Program
33. Quality Control
34. Work Control

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### FOCUS PROGRAM LIST

#### Nuclear Engineering and Construction Division (NECD)

1. Instrument Setpoints
2. Equipment Qualification
3. Equipment Classification
4. Fire Protection - Appendix A/R
5. Meter Banding
6. Relief Valve Setpoints
7. Temporary Shielding
8. Seismic Qualification of Equipment
- Design Change Program
10. Electrical Protective Relay Setpoints
11. Fuse and Breaker Coordination
12. Load Studies (AC/DC/DG)
13. Pipe Hangers
14. MOV Program
15. CNS Severe Accident Analysis
16. Design Basis
17. Configuration Management

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### FOCUS PROGRAM LIST

#### Training

1. Instrument & Control Technician
2. Mechanical Maintenance
3. Electrical Maintenance
4. Chemistry Technician
5. Health Physics Technician
6. Engineering Support Personnel
7. Simulator Certification
8. Shift Supervisor
9. Licensed Operator Requalification
10. Shift Technical Advisor
11. Initial Licensed Operator
12. Senior Reactor Operator
13. Station Operator

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

APPENDIX I - SITE READINESS ASSESSMENT

## PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

### Site Readiness Assessment

The Management Review Committee shall consider the following in providing its affirmation to the Site Manager.

- Organization and Personnel Readiness
- Systems Readiness
- Department Readiness
- Outage Closure
- Restart List Closure
- Post-restart Plans Established
- Assessments Complete
- Other

# SITE READINESS ASSESSMENT FORM

## ROLL UP AND REVIEW OF SITE READINESS ASSESSMENTS:

(Principal Areas to be Reviewed)

\* Organization and Personnel

\* System Readiness

\* Department Readiness

\* Program Readiness

\* Outage Closure

\* Restart List Closures

\* Post Restart Plans

\* Assessments

\* Other (Specify)

## REVIEW AND APPROVAL FOR INITIAL MODE CHANGE

MRC REMARKS

SORC REMARKS

MRC Chairman Approval \_\_\_\_\_ Date \_\_\_\_\_

SORC Approval \_\_\_\_\_ Date \_\_\_\_\_

## REVIEW AND APPROVAL FOR SITE CRITICALITY

MRC REMARKS

SORC REMARKS

MRC Chairman Approval \_\_\_\_\_ Date \_\_\_\_\_

SORC Approval \_\_\_\_\_ Date \_\_\_\_\_

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

APPENDIX J - CROSS REFERENCE OF DSAT FIELD NOTES AND PHASE 1 PLAN

DSAT FIELD NOTES NOT INCORPORATED  
INTO THE PHASE 1  
PERFORMANCE IMPROVEMENT PROGRAM

FIELD NOTE	SUPPLEMENTAL INFORMATION
WW-27	All
WW-25	All
WW-21	All
WW-20	All
WW-15	Guidance on when system lineups should be conducted
WW-13	All
WW-06	All
WW-02	All
RB-11	Phase 2/3 Plans on AOT Phase I only covers instrumentation
RB-09	Guidance on when periodic valve lineups are required
RB-05	All
DM-09	Phase 2/3 Plans
RB-02	Phase 2/3 Plans
DM-08	Example 5
DM-07	All
DM-01	All
DM-11	Example 7
DM-10	Examples 2, 6, Causes 1,3
WW-26	Phase 2/3 Plans
SV-23	Examples 1, 2, 3 Phase 2/3 Plans
SV-22	Example 1 and Overall Description
SV-21	Example 3
SV-18	All
SV-16	Examples 2, 3, 5, Phase 2/3 Plans
SV-15	All
SV-12	All
SV-07	Phase 2/3 Plans to address rework, work arounds, and increased out-of-service times
SV-04	Phase 2/3 Plans

FIELD NOTE	SUPPLEMENTAL INFORMATION
SV-06	All
SV-01	Description - Phase 2/3 Plans
RC-13	All
RC-14	All
RC-12	All
RC-05	All
RC-04	Threshold for what constitutes a DC, and MWR 94-006 item
RC-02	All
WW-18	All
WW-03	All except dose assessment model items
SE-16	All
SE-15	All
SE-14	All but QC item
SE-13	All
SE-12	All
SE-09	All
SE-08	All
SE-05	All
SE-07	All
SE-04	All
SE-03	All
SE-02	All
SE-01	All
RC-15	TPCN, PCN items
RC-10	All
RC-06	All
RC-01	All
JD-12	All
JD-10	All
JD-09	All

FIELD NOTE	SUPPLEMENTAL INFORMATION
JD-08	All
JD-01	Examples 1, 4, 6, 8, 9, 10 Causes 1, 2, 3, 4
DK-06	All
DK-05	Examples 2, 3
DK-01.1	Examples 2, 3, 4, 6, 7
DB-01	Phase 2/3 Plans
WW-17	Verify captured by DM-09
WW-14	All except for work control/special instructions
RA-10	Review examples to verify drawing corrections OK
RA-09	Examples 1, 2, 3
RA-08	All
RA-05	Phase 2/3 Plans
JC-02	All
JC-01	All
GW-19	Description, Programmatic and Management Phase 2/3 Plans
GW-18	Example 4
GW-17	Examples 2, 3
GW-16	All
GW-15	Examples 1, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
GW-14	All
GW-13	All
GW-12	All
GW-11	All
GW-10	Phase 2/3 Monitoring
GW-09	Examples 1, 2, 3, 4. Phase 2/3 Drawing Change Program plans, correction of previous deficiencies, etc.
GW-05	All
GW-04	All
GW-03	All
GW-02	All

FIELD NOTE	SUPPLEMENTAL INFORMATION
DK-04	System Engineering Monitoring Program
CB-21	All
CB-19	All
CB-18	EWR Process Phase 2/3 Monitoring of Root Cause Analysis process and implementation of corrective actions
CB-17	All
CB-16	Narrow focus/complianced based evaluation of generic issues
CB-15	All but SIL 564 item
CB-14	All
CB-13	Phase 2/3 Action on OER Program Ensure specific items listed as examples have been reviewed during recent OER review project
CB-12	Phase 2/3 monitoring of Root Cause Analysis adequacy, and Corrective Actions correlate with root cause analysis
CB-11	All
CB-10	Phase 2/3 Plans for OER Program, Post-trip review procedure adequacy
CB-09	All
CB-08	All
CB-07	All
MCB-01	Failed or absent barriers, Phase 2/3 assessment and monitoring of CAP performance, OER Phase 2/3 Plan and assessment of OER Program performance
MGW-01	All of Description
MGW-02	All of Description, RHR-MO-27A/B and 34A/B example
MGW-06	Phase 2/3 Plans regarding configuration control
MGW-07	Phase 2/3 Plans regarding design control and example regarding testing of modification to see if it works
MCB-02	Phase 2/3 monitoring and assessment of issues listed
MJD-01	All
MJD-02	All
MJD-03	All except example 4
MJD-05	Phase 2/3 assessment of NPG's ability to execute plans

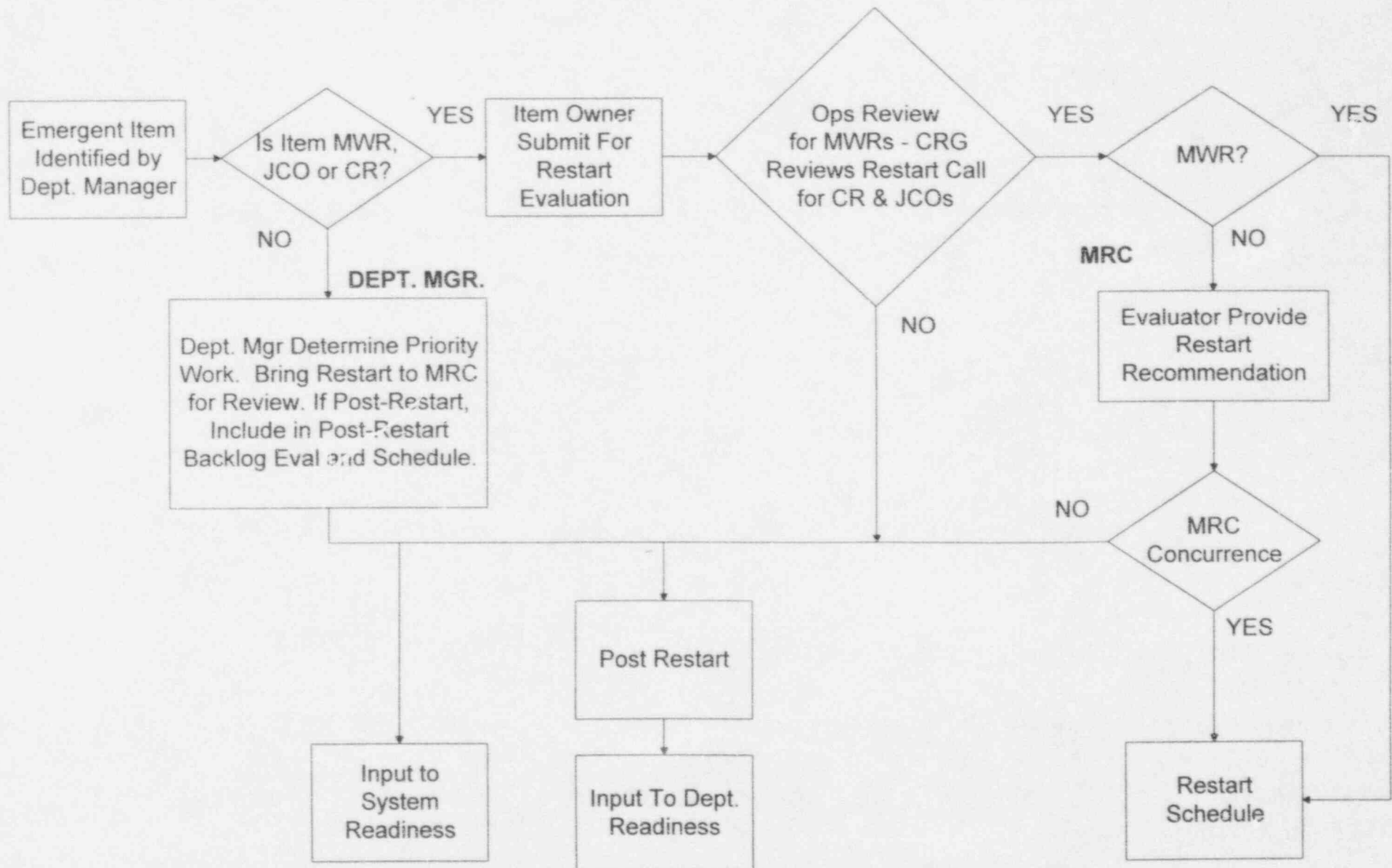
FIELD NOTE	SUPPLEMENTAL INFORMATION
MJD-06	All
MJD-07	Phase 2/3 Plans of independent oversight
MJD-08	All
MJD-09	All
MSV-05	Phase 2/3 assessment of description
MRB-01	Phase 2/3 Plans and assessment of work control program
MSV-01	Phase 2/3 assessment of the quality of Maintenance work activities
MSV-02	Phase 2/3 Plans to resolve inadequacies in station procedures and instructions
MSV-03	Phase 2/3 Plans to resolve long standing equipment problems
MRB-02	Phase 2/3 assessment regarding compliance with established programs and procedures
MWW-03	All
WW-17	Examples 1, 2, 3
RC-04	All
DM-10	Examples 2, 6
SV-01	All Examples
RA-09	Examples 2, 3
GW-17	Example 2
DK-04	Example
CB-07	Example
CB-13	All
GW-14	Examples 1, 2, 3
GW-15	Examples 1, 3, 5, 7, 9, 10, 11, 13, 14, 15
MGW-02	MO-27A/B, MO-34A/B Example
MCB-02	Example 4, Item d
WW-16	Closed out by DSAT Team
WW-10	Closed out by DSAT Team
WW-11	Closed out by DSAT Team
WW-09	Closed out by DSAT Team

FIELD NOTE	SUPPLEMENTAL INFORMATION
WW-08	Closed out by DSAT Team
WW-12	Closed out by DSAT Team
RB-07	Closed out by DSAT Team
WW-01	Closed out by DSAT Team

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

APPENDIX K - EMERGENT ISSUES FLOWCHART

## EMERGENT ISSUES



PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

APPENDIX L - MAINTENANCE WORK REQUEST SCREENING

