

PALISADES PLANT
RESTART PLAN
from the
1994 FORCED OUTAGE
Revision 1

Approved *Robert A. Fenech*
Vice President, Nuclear Operations Department

PALISADES PLANT RESTART PLAN

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I. BACKGROUND

On February 17, 1994, a through wall leak was discovered on the body of the containment sump outlet check valve, CK-ES3166. The reactor was taken off-line with no anomalies noted during the shutdown. The plant was taken to a condition of less than 325 degrees F and 400 psig and held at that level until February 23, 1994 when a decision was made to take the plant to cold shutdown. Cold Shutdown conditions were met at 1113 hrs on February 24, 1994.

During the repair of the check valve, other deficiencies were identified relating to channel separation of signal wires to the Reactor Protection System (RPS) cabinets, inadequate isolation of non-1E equipment on 1E power, inverter output harmonic distortion, deficiencies with the Emergency Diesel Generators and their fuel systems, improper installation of reactor vessel insulation and problems with the Auxiliary Feedwater System.

These system problems, plus other concerns identified during and after the 1993 refueling outage showed a need for a systematic and programmatic review of plant systems, programs and departments to insure readiness to restart and to provide assurance for a safe, reliable run.

Additional reviews, including a safety function review and multi-disciplinary reviews of work orders and corrective actions were added to the scope of the restart reviews as a result of system, program, and department reviews.

II. RESTART PLAN OBJECTIVES

The overall objective of the Palisades Plant restart plan is to provide a vehicle by which plant management can effectively assess the plant's readiness for heat-up and start-up.

The plan will ensure the comprehensiveness of the restart efforts through an integrated framework of system, program, departmental, safety function, work order backlog, and corrective action backlog reviews.

III. METHODOLOGY

The Restart Plan reviews will be conducted by a Restart Review Team that will consist of: Vice President, Nuclear Operations Department (Chair), Palisades Plant Manager, Nuclear Engineer and Construction Organization Manager, Nuclear Plant Assessment Department Manager and a Senior Operations Department Representative.

The Restart Plan will provide an in depth look at the systems and programs considered important to safe generation of the plant. A list of the programs and systems designated for review is provided in Attachment 1.

Department reviews will be performed to evaluate the organizational readiness across the systems and programs boundaries. The departments identified for review are included in Attachment 2.

Multi-disciplinary reviews of both the work order backlog and corrective action backlogs will be performed.

As a validation and verification of the process, the objectives of the Palisades Performance Enhancement Plan (P²EP) will be reviewed for weaknesses identified to determine if the current status of the identified issues is adequate to support startup. Also, the system, program, and departmental weaknesses will be evaluated from a safety function perspective to ensure the cumulative effect of weaknesses in these areas is considered.

The Vice President, Nuclear Operations Department will approve the plan.

IV. PROCESS

In order to assure a safe, controlled restart and a safe, reliable power generation cycle the Restart Review Team will evaluate the readiness of plant systems, programs and departments. The team will consider the following:

- **Adverse impact on safety system availability or performance**

For example, potential for causing frequent entry into TS action statements, potential for entry into short-term TS action statements, and potential to render a component or system incapable of performing intended design function.

- **Significant challenge to plant/personnel performance because of individual or aggregate impact**

For example, high numbers of required compensatory actions, disabled annunciators, high backlog numbers, and degraded or unreliable equipment performance.

- **High potential to impact plant operating reliability**

For example, likelihood of causing trips/transients, common or single failure point weaknesses, necessitates entry into short term TS action statements, and likelihood for hardware failure before the end of the next operating cycle.

- **Need for correcting deficiencies prior to restart**

For example, actions required prior to heatup to enhance safety margin, reduce outage risk, or to reduce operational impact.

Items of concern resulting from these reviews will be noted and transmitted to outage management for tracking and close-out. The resulting Action Item List will be reviewed prior to recommending restart.

IV.A Plant Systems Review

Prior to restart, a system readiness review will be conducted by System Engineering and presented to the Restart Review Team. Its purpose is to give plant management an overview of the status of the systems important to safety. The Restart Review Team will insure that the cumulative effect of a number of marginal aspects of a system and all the systems are evaluated and considered. The review will also provide direct contact of the system experts with senior plant management to insure any concerns are communicated.

The system review will include the following items:

1. Review of the Work Order Backlog
 - a. How many work orders in each priority
 - b. Age of backlog
 - c. Discussion of specific work orders which are significant
2. Review of Temporary Modifications (TM)
 - a. Number of temporary modifications
 - b. Age of temporary modifications
 - c. Number of operations sensitive TMs
 - d. Discussion of significant TMs
3. Operator Concerns
 - a. Discuss items on the Long Range Concerns List for the system

4. Design Basis Issues
 - a. Discuss areas where the system approaches limits of compliance with design requirements.
 - b. Discuss outstanding Safety System Design Confirmation (SSDC) discrepancies on the system.
5. Modifications
 - a. Discuss modifications that have been identified as being necessary or highly desirable but have not yet been implemented.
 - b. Discuss modifications implemented this outage and potential vulnerabilities related to these modifications.
6. Industry Issues
 - a. Discuss identified industry issues on the adequacy of how they have been addressed.
7. Diagnostic Evaluation Observations Requiring Action
 - a. Present DEOs associated with the system and status of action required.
8. Corrective Action Documents
 - a. Identify outstanding corrective actions associated with the system.
 - b. Discuss outstanding corrective action document actions that have significance to startup
 - c. Cover any corrective action documents from this outage that had previously been identified for PRC review but were removed because of this review
9. Preventive Maintenance (PPAC) Issues
 - a. Discuss any PPACs on the system that have not been performed but should be, and discuss why they have not been performed.

IV.B Plant Program Review

Prior to restart, a plant program readiness review will be conducted by the Program Managers and presented to the Plant Review Team. Its purpose is to give plant management an overview of the status of the key programs affecting plant safety. The Plant Review Team will insure that the cumulative effect of a number of marginal aspects of plant performance as determined by the programs are evaluated and considered. The review will also provide direct contact of the program managers with senior plant management to insure any concerns are communicated.

The program review will include the following items:

1. **Design Basis Issues**
 - a. Discuss areas where the plant approaches limits of compliance with design requirements.
 - b. Discuss outstanding Safety System Design Confirmation (SSDC) discrepancies on the program.
2. **Modifications**
 - a. Discuss modifications that have been identified as being necessary or highly desirable but have not yet been implemented.
3. **Industry Issues**
 - a. Discuss identified industry issues and the adequacies of how they have been addressed.
4. **Diagnostic Evaluation Observations Requiring Action**
 - a. Present DEOs associated with the system and status of actions required.
5. **Corrective Action Documents**
 - a. Identify outstanding corrective action documents.
 - b. Discuss outstanding corrective action document actions that have significance to startup.
 - c. Cover any corrective action documents from this outage that had previously been identified for PRC review but were removed because of this review.

IV.C Plant Department Reviews

Prior to restart, a review of departmental readiness will be performed by each department manager and presented to the Restart Review Team. The purpose of this review is to ensure the department's organizational structure, resources and processes are adequate to support restart and continued safe operation of the plant. The process is intended to help align the management to common objectives.

The department reviews will include the following items:

1. Organizational Structure
 - a. Departmental Roles and Responsibilities/Defined
 - b. Outline of Departmental Structure
 - c. Critical functions defined
2. Department Processes
 - a. Process Weaknesses Identified
 - b. Actions to ensure effectiveness of processes
3. Resources
 - a. Current Resource Status vs. Short Term needs
 - b. Resource Planning
 - c. Departmental Work Backlog Status
4. Assessment
 - a. Performance Monitoring Systems in place

IV.D Safety Function Review

The Safety Function Review will integrate the various weaknesses identified through the system, program, and departmental reviews. This review will evaluate the cumulative effect of these weaknesses on the Emergency Operating Procedure Safety Functions. Each of the success paths for fulfilling the following safety functions;

- 1) Reactivity Control
- 2) Maintenance of Vital Auxiliaries, Electric

- 3) Inventory Control
- 4) Pressure Control
- 5) Core Heat Removal
- 6) Plant Heat Removal
- 7) Containment Integrity
- 8) Containment Atmosphere
- 9) Maintenance of Vital Auxiliaries, Water
- 10) Maintenance of Vital Auxiliaries, Air

will be evaluated for conditions that could lead to an inability to fulfill the safety function. By reviewing the individual success paths, seemingly unrelated discrepancies will be correlated to the safety function. This will provide the integrated look at the cumulative effect of identified weaknesses on the plant's ability to effectively cope with an accident.

IV.E Palisades Performance Enhancement Plan Objectives Review

Prior to startup the objectives of the Palisades Performance Enhancement Plan (P²EP) will be reviewed by the Restart Review Committee to assess the overall readiness of the plant for restart based on the areas identified by the plan as needing improvement.

This review will consist of a preliminary review of all of the P²EP objectives by the review committee to identify areas of concern. P²EP program sponsors will then be asked to present the current status and plans associated with those areas of concern to the review committee. This review is intended as a validation of the system and departmental reviews being performed under Section IV.A - C.

IV.F Work Order Backlog Review

Prior to Restart a multi-disciplinary review of the work order backlog will be performed. The team will, as a minimum, include a member from Operations, System Engineering, Mechanical Maintenance, Electrical/ I+C Maintenance, and Reactor Safety and Analysis. The review will focus both on the cumulative effect of the backlog and the individual impact of each deficiency. The review will evaluate the work orders for the following criteria:

- Adverse impact on safety system availability or performance
- Significant challenge to plant/personnel performance because of individual or aggregate impact
- High potential to impact plant operating reliability
- Need for correcting deficiencies prior to restart

Items of concern resulting from this review will be noted and transmitted to outage management for tracking and close-out. The resulting Action Item List will be reviewed prior to recommending restart.

IV.G Corrective Action Backlog Review

Prior to Restart a multi-disciplinary review of the corrective action backlog will be performed to identify issues which might have significant implications for equipment operability and warrant resolution before plant startup. The review team will consist of, as a minimum, a member from Operations, Probable Risk Analysis, System Engineering, Plant Safety and Licensing, and Reactor and Safety Analysis. The review scope will include all open Deviation Reports and Event Reports that have not been subject to the formal, enhanced operability determination process, and all open Action Item Records in the Palisades, NPAD, or commitment tracking systems. The review will evaluate the corrective actions for the following criteria:

- Adverse impact on safety system availability or performance
- Significant challenge to plant/personnel performance because of individual or aggregate impact
- High potential to impact plant operating reliability
- Need for correcting deficiencies prior to restart

Items of concern resulting from this review will be noted and transmitted to outage management for tracking and close-out. The resulting Action Item List will be reviewed prior to recommending restart.

**IV.H GOP-2, Plant Heatup (Cold Shutdown to Hot Shutdown) and
GOP-3, Hot Shutdown to Critical in Hot Standby**

These documents provide instructions for a normal Plant Heatup from Cold Shutdown to Hot Shutdown conditions, and from Hot Shutdown to Hot Standby conditions. They contain the operational reviews and verification completed prior to restart and the final authorization to restart from the Plant General Manager. The following specific reviews are included.

GOP-2:

1. **Checklists required for plant conditions have been completed.**
2. **Review of:**
 - a. Personal Protective Tagging
 - b. Caution Tags
 - c. Temporary Modifications and
 - d. Work Orders for items conflicting with plant heatup
3. **Mechanical Maintenance Superintendent verifies vital work completed**
4. **Electrical - I&C Maintenance Superintendent verifies**
 - a. vital work completed and
 - b. Restoration of Safety Injection Actuation Circuits
5. **If the plant has been in Cold Shutdown for greater than 100 days, then Operations Superintendent verifies that licensed operator refresher training on plant startup has been conducted at the simulator.**
6. **Plant Safety and Licensing Director or designated alternate, verifies**
 - a. **No outstanding Licensing commitments conflicting with plant heatup.**
 - b. **All related Corrective Action documents required prior to heatup are completed.**
 - c. **PRC has reviewed upward operation condition changes made under Technical Specification 3.0.4 (refer to Admin Proc 3.01).**

7. Engineering Programs Manager verifies
 - a. Facility Change projects required to be completed prior to plant heatup have been completed to the Operations Authorization signoff.
 - b. All Specification Changes required to be completed prior to plant heatup have been completed through the Action Completed block.
8. The Technical Specification Surveillance Coordinator verifies all required Technical Specifications surveillance testing completed.
9. **ALARA Coordinator verifies that all lead shielding in Containment that is to be removed from components prior to leaving Cold Shutdown per the Shielding Engineering Evaluations, is removed.**
10. PCS Chemistry ready for plant heatup by
 - a. Chemistry Supervisor verifies PCS chemical and activity levels acceptable for heatup (per COP 1) and
 - b. Primary Coolant Boron measured
11. Heatup approved by Plant General Manager or authorized representative.

GOP-3:

1. GCL 2 completed
2. Insure that Checklists CL 3.9, CL 5.1, CL 6.2, CL 12.6, CL 35 and CL 36 have been completed within the previous ten days or have been waived in accordance with Admin Procedure 4.02.
3. Surveillance completed for all items required above hot shutdown on SHO-1 or D/WO-1.
4. **Review:**
 - a. Open work orders
 - b. Switching and tagging orders for items conflicting with critical approach.

5. Technical Specification Surveillance Coordinator verifies all Technical Specification tests required prior to critical have been completed.
6. PCS Chemistry ready for criticality by:
 - a. Chemistry Supervisor verifies PCS chemical and activity levels acceptable for heatup (per COP 1)
 - b. Primary Coolant Boron measured.
7. Plant Safety and Licensing Director or designated alternate, verifies:
 - a. **No outstanding Licensing commitments conflicting with critical approach.**
 - b. All related Corrective Action documents required prior to critical approach are completed.
 - c. PRC has reviewed upward operation condition changes made under Technical Specification 3.0.4 (refer to Admin Proc 3.01) and
 - d. If plant has been in Cold Shutdown for greater than 100 days, a Nuclear Safety Board operational readiness review has been conducted.
8. ALARA Coordinator verifies that all applicable lead shielding in Containment is removed.
9. Zero Power Mode (ZPM) bypass keys removed (refer to SOP 36).
10. Critical prediction completed (refer to EM-04-24).
11. Radiation Safety Supervisor verifies that:
 - a. **All radiation doors in the containment building are locked and**
 - b. **No personnel in containment.**
12. Operations Shift Supervisor verifies that:
 - a. At least two Instrument Air Compressors available.
 - b. Instrument Air dryer is ready for service (refer to SOP 19).

- c. Instrument Air Header ready for service and
 - d. High Pressure Air Receiver tanks T-9A and T-9B greater than 260 psia and not cross-tied (refer to SOP 20).
13. Critical approach approved by Plant General Manager or authorized representative.
 14. Plant requirements, precautions and limitations of SOP 6 and GOP 3 reviewed by Licensed Operators who will perform critical approach.

Plant readiness will be reviewed and assessed by the action in IV.A, IV.B, IV.C, IV.D, IV.E, IV.F, IV.G and IV.H. The actual verifications and authorizations to heatup and startup the plant will be contained in General Operating Procedures GOP 2 and GOP 3 as described in Section IV.H above. With the exception of the additional authorizations delineated in section VI.

V. ASSESSMENT AND OVERSIGHT

As part of the restart activities, a number of assessments, reviews and oversight activities are being employed to ensure that key areas for improvement are identified, that the associated restart plan and activities are appropriate to address those weaknesses, and that the restart plan is effectively implemented. Key review and assessment activities include:

1. System reviews referenced in Section IV.A.
2. Program reviews referenced in Section IV.B.
3. Departmental reviews referenced in Section IV.C.
4. A review of the restart plan by the Management Safety Review Committee members.
5. A comprehensive program of Nuclear Plant Assurance Department Assessment.
6. Nuclear Plant Assurance Department direct oversight and assessment of the restart plan activities and Diagnostic Evaluation Observation (DEO) closeout reviews.

7. On independent assessment of common causal factors of DEO discrepancies identified.

VI. CLOSURE AND DOCUMENTATION

Restart Plan completion will consist of a "roll-up" of a number of interfacing and overlapping inputs. These include the plant systems review, plant programs review, plant departments review, safety function review, Palisades Performance Enhancement Plan objectives review, work order backlog review, and corrective action backlog review performed in accordance with the Restart Plan. The Restart Review Team will also review the Action Items developed from the above assessments. Completion of the reviews will be documented below.

1. System reviews referenced in Section IV.A.

Completed J. J. Hamm 6/7/94
Restart Plan Manager

2. Program reviews referenced in Section IV.B.

Completed J. J. Hamm 6/7/94
Restart Plan Manager

3. Departmental reviews referenced in Section IV.C.

Completed J. J. Hamm 6/7/94
Restart Plan Manager

4. Safety Function Review referenced in Section IV.D.

Completed J. J. Hamm 6/7/94
Restart Plan Manager

5. P²EP Objective Review referenced in Section IV.E.

Completed J. J. Hamm 6/7/94
Restart Plan Manager

6. Work Order Backlog Review referenced in Section IV.F.

Completed J. J. Hannan 6/7/94
Restart Plan Manager

7. Corrective Action Backlog Review referenced in Section IV.G

Completed J. J. Hannan 6/7/94
Restart Plan Manager

8. A review of the restart plan by the Management and Safety Review Committee members.

Completed J. J. Hannan 6/7/94
Restart Plan Manager

9. Action items from Reviews.

Completed J. J. Hannan 6/8/94
Restart Plan Manager

HEATUP RECOMMENDATION

The Restart Review Team will confirm that the readiness review has been sufficiently completed to support heatup, and upon completion of the action items required prior to heatup, recommend heatup of the Palisades Plant.

J. J. Hanna 6/8/94
Operations Department Representative

R. K. K. K. 6/8/94
Nuclear Plant Assessment Department Manager

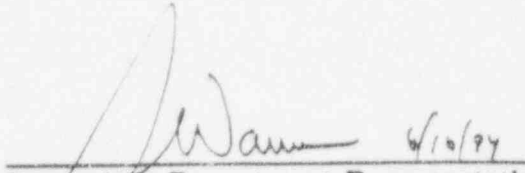
R. D. Rose 6/8/94
Nuclear Engineering and Construction Organization Manager


J. J. K. 6/8/94
Palisades Plant General Manager

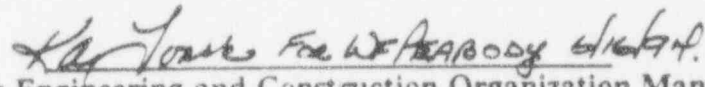
Robert C. L.
Vice President, Nuclear Operations Department

STARTUP RECOMMENDATION

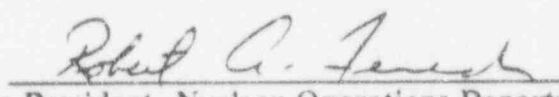
The Restart Review Team will confirm that the readiness review has been completed, and upon completion of the Action Items List required for operation, recommend the restart of the Palisades Plant.


Operations Department Representative


Nuclear Plant Assessment Department Manager


Nuclear Engineering and Construction Organization Manager


Palisades Plant General Manager


Vice President, Nuclear Operations Department

ATTACHMENT 1

SYSTEMS and PROGRAMS IMPORTANT TO SAFETY

<u>SYSTEM</u>	<u>ASPECTS</u>	<u>ENGINEER</u>	<u>SECTION HEAD</u>
TGS	EHC DEH Main Generator Turbine	JDStafford TELeva	B*Kubacki RSWesterhof
MFW	System Performance CV-0606 Failure FP Controls FRV Controls Feed Flow Indication	CWMain RSWesterhoff	B*Kubacki RSWesterhof
RPS	Time Response Cable Separation Reliability Power Supply Pin Engagement TMM Alarms/Pretrips	BDMeredith	RSWesterhof
CCW	Heat Exchanger Containment Issue ESF Pump Cooling	WABinnington	PJGire
SW	Margins Bio-Fouling	WABinnington	PJGire
PCS	Inconel 600 CRDM Vessel Internals Primary Coolant Pumps	BABemis SCCedarquist	B*Kubacki
CVCS	Letdown CCP Packing Heat Tracing	PABurke	B*Kubacki
EPS	Diesel Generator Controls Fuel Oil	GJSzczyпка	PJGire

ESS	HPSI LPSI Containment Spray	EJGrindahl	PJGire
SCS		JPBroschak	B*Kubacki
AFW	Various Controls	DABixel URPeterson	PJGire RSWesterhof
HVAC	Reliability Design	LTPhillips	B*Kubacki
SPS	4160/2400/480 125V DC 120V Preferred as Invertors	RKMocerl RSWesterhof RSWesterhof RSWesterhof	RSWesterhof
CIS	Airlocks Appendix J Electrical Penetrations (N2 Purge)	AJSoderberg BMSova	BVVanWagner RSWesterhof

PROGRAMS

<u>SYSTEM</u>	<u>ASPECTS</u>	<u>ENGINEER</u>	<u>SECTION HEAD</u>
EEQ Appendix R SQUG MOV Valves	Checks Air Operated Reliefs	DRDay RWPhillips DEEngle WTOConnell JRJohns	TABuczwinski TABuczwinski TABuczwinski BALow BALow
PPAC ISI Erosion/ Corrosion CCP Pump & Valve IST		RBKasper THFouty BCHarsche GSchrader	BVVanWagner TABuczwinski BVVanWanger

Station-
Blackout

RHamm

KAToner

SRPRP

Safety Related
Piping and
Verification

DRiat

BVVanWagner

ATTACHMENT 2
DEPARTMENT REVIEW LIST

The following list identifies the departments to be included in the departmental review.

1. Operations
 - a. Operations
 - b. Chemistry
 - c. Reactor Engineering

2. Maintenance
 - a. Mechanical
 - b. Electrical
 - c. Instrument and Control

3. System Engineering

4. Administrative

5. Nuclear Training

6. Radiological Services

7. Nuclear Engineering and Construction Organization

8. Nuclear Plant Assessment Department

ATTACHMENT 3

HEATUP, STARTUP, AND POWER ESCALATION HOLD POINTS

Objectives

This attachment outlines the management plan for ensuring the safe, controlled, and deliberate return to service of the Palisades Nuclear Plant from the 1994 Forced Outage. It is intended as a supplement to the comprehensive operating procedures that govern plant heatup, startup, and power escalation and will not duplicate sign offs and verifications already existing in the General Operating Procedures. It provides for the documentation of the additional management oversight appropriate for a plant startup considering the plant's performance history. The hold point sign-offs will focus primarily on the human performance aspects of the evolutions performed and secondarily on equipment performance.

Management Oversight

To ensure adequate management involvement of the heatup, startup, and power escalation the Plant General Manager shall establish a schedule by which Plant and NECO managers will be assigned to provide management oversight for critical evolutions and periodic general oversight during prolonged evolutions of less critical nature.

Engineering Involvement

During the heatup, restart, and power escalation of the plant from the outage, engineering will monitor the plant's response from a system, program, and design basis conformance view point. Important equipment transitions and mode changes will be monitored for proper system response. Programs will be verified, where possible, to be meeting the required standards through observations of appropriate evolutions. Design basis assumptions will be verified against actual plant operation to the extent reasonable.

Maintenance and Support Group Involvement

During heatup, startup, and power escalation of the plant from the outage, maintenance and the other support groups will establish a plan by which they will ensure that resources are available to support emergent work. Plans to support post maintenance testing and required surveys during startup and power escalation will be in place. The support groups are expected to be proactive in their support of the plant and to seek out areas where their support will further the safe and efficient operation of the plant.

Assessment Hold Points

This plan establishes the following assessment hold points at which plant conditions are maintained until a prescribed assessment of site readiness for further progression, as defined by this attachment is completed.

- Prior to leaving cold shutdown
- Prior to Reactor Startup
- Prior to Synchronization
- Prior to exceeding 35% Reactor Power
- Prior to exceeding 55% Reactor Power
- Prior to exceeding 90% Reactor Power
- Continuing Operation after 10 days of full power operation

The hold points for leaving cold shutdown and prior to reactor startup will be controlled through the normal Plant General Manager authorizations required in GOPs 2 and 3. The hold points for prior to synchronization and at the various power levels will be controlled by Operations Department management through daily orders entries. The Plant General Manager will make the authorizations for proceeding beyond the hold points.

Human Performance Evaluations

The human performance evaluations called for in the Hold Point Assessments and Authorizations section of this attachment will be performed with a focus on procedural compliance, attention to detail, communications, and safety sensitivity of the department staff. In order to evaluate this adequately it is expected that each manager will review the performance of their employees comprehensively using various inputs.

The primary input for evaluating human performance is the corrective action system. The corrective action documents generated that are applicable to the performance of a department should be evaluated for significance and for trends in performance. This evaluation should be supplemented by observations of work in the field. Inputs received during department standdown meetings should also be considered in assessing the culture existing within the organization.

The effectiveness of communication both within the individual departments and between departments is a critical element of any organization. The safe operation of the plant is dependent upon good communication at and between all levels of the organization. The

effectiveness of communication within and between departments should be assessed to determine if the process ensures that safety concerns are being adequately communicated and that the resolution of these concerns is being effectively communicated back to the concerned individuals. Likewise, communication of directions, actions and alignments must be adequate to ensure that no critical action is missed.

Hold Point Assessments and Authorizations

PRIOR TO LEAVING COLD SHUTDOWN

The full Restart Review Team shall authorize leaving cold shutdown as documented in Section VI of the Restart Plan. The authorization will be based on the restart plan review results and management observations of work in the field. In addition each plant and NECO department head shall evaluate his departments readiness to support heatup and document that evaluation below.

-Human Performance from the aspect of procedural compliance, attention to detail, communications, and safety sensitivity has been adequate to justify plant heatup.

Ka Jones, PE
Elec./I+C/Comp.Engineering Manager

J. Stannard, P.E.
Proj. Mgmt, Const., & Testing Manager

M. Bugajewski
Engineering Programs Manager

D. Ward Walker
Mech., Civil, Structural Eng Manager

R. Yerling
Reactor and Safety Analysis Manager

J. Z. Hanson
Eng Programs-Strat. Issues Manager

R. D. Osog
NECO Manager

[Signature]
Operations Manager

[Signature] FOR R. MILLER
Systems Engineering Manager

[Signature]
Maintenance Manager

[Signature]
Radiological Services Manager

[Signature]
Administrative Manager

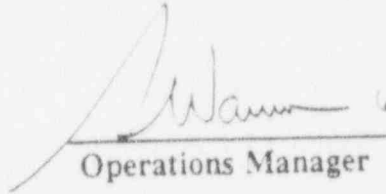
[Signature]
Human Resources Director

[Signature]
Human Resources Director
Training manager


[Signature] 6/10/94
Plant General Manager

PRIOR TO REACTOR STARTUP

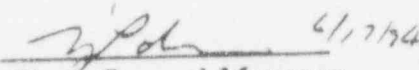
-Heatup records have been reviewed for procedural compliance and adequate equipment response.

 6/16/94
Operations Manager

-System response during heatup has been reviewed by System Engineering and is adequate to support reactor startup.


 6/16/94
Systems Engineering Manager

-Plant material condition and general housekeeping is adequate for plant startup.

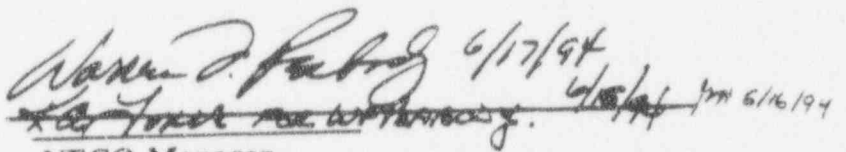
 6/17/94
Plant General Manager

-Hot shutdown testing has been completed satisfactorily from systems perspective.

* All except MC-11B, QU-22, PO-1
There will be complete
Plan to Critical and Central
By GOP-3 sign off by
System Engineering.

 6/16/94
Systems Engineering Manager


-All plant modifications performed during the outage have been reviewed for adequacy and completeness to support plant startup.

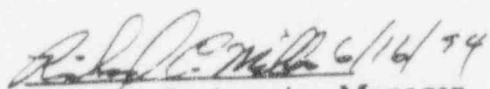
 6/17/94
~~NECO Manager~~ 6/16/94
NECO Manager

-Plant Review Committee (PRC) startup meeting is complete and all open items dealing with reactor startup and power escalation have been resolved to the PRC's satisfaction.

 6/15/94
PRC Chairman

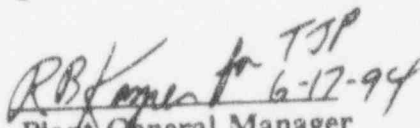
-Human Performance from the aspect of procedural compliance, attention to detail, communications, and safety sensitivity has been adequate during the hot shutdown testing period to justify reactor startup.


Operations Manager 6/14/94


Systems Engineering Manager 6/16/94


Maintenance Manager


Radiological Services Manager


Plant General Manager TSP 6-17-94

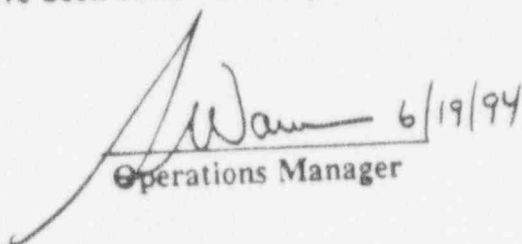
PRIOR TO SYNCHRONIZATION

-Plant and Human Performance during the reactor startup met management's expectation for quality.

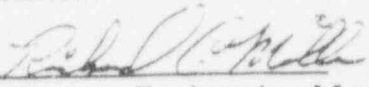

Plant General Manager 6/17/94

PRIOR TO EXCEEDING 35% POWER

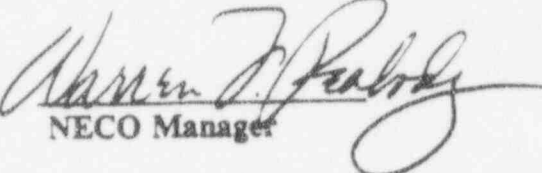
-Plant power escalation records have been reviewed for procedural compliance and adequate equipment response.


Operations Manager 6/19/94

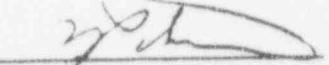
-System response during power escalation has been reviewed by System Engineering and is adequate to support continued power escalation.

 6/19/94
Systems Engineering Manager

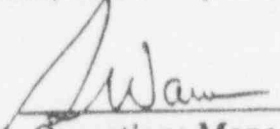
-Plant operation is consistent with design.


NECO Manager

-Plant material condition and general housekeeping is adequate for continued power escalation.

 6/19/94
Plant General Manager

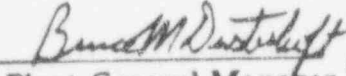
-Human Performance from the aspect of procedural compliance, attention to detail, communications, and safety sensitivity has been adequate to justify continued power escalation.

 6/19/94
Operations Manager

 6/19/94
Systems Engineering Manager

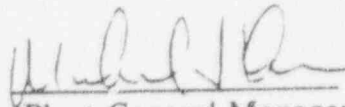
 6/19/94
Maintenance Manager

 6/19/94
Radiological Services Manager

 for TJP per telecon
Plant General Manager 6-19-94 2330


PRIOR TO EXCEEDING 55% POWER

-Plant and Human Performance during power escalation to 55% power met management's expectation for quality.


Plant General Manager for TSP per telecom
6, 20, 94 0545

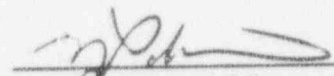
PRIOR TO EXCEEDING 90% POWER

-Plant and Human Performance during power escalation to 90% power met management's expectation for quality.

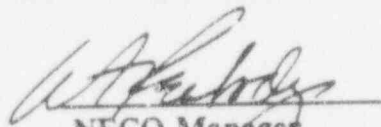

Plant General Manager for TSP/Admission
per telecom 6/29/94 2217

CONTINUED OPERATION FOLLOWING 10 DAYS OF FULL POWER OPERATION

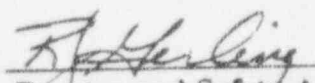
-Plant material condition and general housekeeping are adequate for continued operation.


Plant General Manager


-Modification performance supports continued operation.


NECO Manager

-Fuel performance is adequate to support continued operation.


Reactor and Safety Analysis Manager

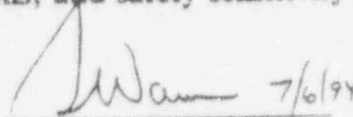
-System response during power escalation has been reviewed by System Engineering and is adequate to support continued power escalation.


Systems Engineering Manager

-Plant operation is consistent with design.


NECO Manager

-Human Performance from the aspect of procedural compliance, attention to detail, communications, and safety sensitivity has been adequate to justify continued operation.


Operations Manager


Systems Engineering Manager


Maintenance Manager


Radiological Services Manager


Plant General Manager

ATTACHMENT 3

Consumers Power Company
Palisades Plant
Docket 50-255

PALISADES PERFORMANCE ENHANCEMENT PLAN
Describing Long-Term Actions to Improve
Performance at Palisades

August 11, 1994