

ATTACHMENT C

PNPS PROCEDURE 1.2.2 "ADMINISTRATION OPERATIONS REQUIREMENTS"

**INFORMATION
ONLY**

**Use restricted to
reference**



RTYPE H6.01

PILGRIM NUCLEAR POWER STATION

Procedure No. 1.2.2

ADMINISTRATIVE OPS REQUIREMENTS

REQUIRED REVIEWS



**Stop
Think
Act
Review**

SAFETY REVIEW REQUIRED

ORC REVIEW REQUIRED

REVIEWERS AND APPROVERS

<u>Thomas L. Jancow</u>	<u>25 JUNE 96</u>
Procedure Writer	Date
<u>Mask</u>	<u>6-25-96</u>
Technical Reviewer	Date
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<u>L. Christie</u>	<u>6/27/96</u>
Procedure Owner	Date
<u>N/A</u>	
QAD Manager	Date
<u>A. Lunn</u>	<u>7/11/96</u>
ORC Chairman	Date
<u>R. E. McArthur</u>	<u>7-15-96</u>
Responsible Manager	Date

Effective Date:

7/17/96

REVISION LOG

REVISION 15

Date Originated 6/96

Pages Affected

Description

- | | |
|----|---|
| 20 | Add "if required" for LCO Maintenance Review Committee Review/Approval to agree with change made to Note on page 23 as described below. |
| 23 | Clarify Note to state that LCO Maintenance Review Committee review shall be performed on LCO-Planned Maintenance with a Tech Spec action statement that requires a plant shutdown if the component or system is not returned to service in 30 days or less. |
| 23 | Add DWE/ODM checkoff for determination as to whether Step [14] is required. |
| 24 | Add lines to record comments. |

REVISION 14

Date Originated 11/95

Pages Affected

Description

- | | |
|-------|--|
| 7,22 | Incorporate statement and approval/signoff for Maintenance Rule considerations. |
| 20-23 | Update organization titles due to reorganization. |
| 20-23 | Revise Attachment 11; LCO-Maintenance Planning Checklist to add LCO Maintenance Review Committee and additional administrative controls. Resequence steps and review/approval signoffs. This implements PRs 95.9636, 96.9059, and 96.9027. |

Editorial 13A

Date Originated 11/95

Pages Affected

Description

- | | |
|--------------|---|
| 5,7,16,19-22 | Incorporate organization title/responsibility changes due to reorganization. (Change Maint. Div. Mgr. to responsible supervisor. Change COE to ODM. Add "Active" to "(LCO Only)" where applicable. Replace Ops Section and Maint Section with Ops Dept and Maint Dept. Replace Scheduling Div Mgr with Scheduling Dept. Mgr.) |
|--------------|---|

REVISION 13

Date Originated 5/95

Pages Affected

Description

- | | |
|---|--|
| 4 | Add NRC GL 94-02 (BWROG-94078) to References; supersedes IEB 88-07 Supplement 1. |
| 9 | Incorporate new Pilgrim Power/Flow Map [NRC GL 94-02 (BWROG-94078)]. |

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1.0 PURPOSE AND SCOPE

This Procedure establishes administrative requirements and policies for activities which are not addressed by Technical Specifications requirements and ensures maintenance activities and abnormal plant conditions are planned and executed with appropriate consideration of plant safety, operational requirements, and sound judgment.

2.0 REFERENCES

2.1 DEVELOPMENTAL

- [1] NRC GL 94-02 (BWROG-94078), Thermal Hydraulic Instabilities in Boiling Water Reactors
- [2] Outage Manual
- [3] PDC 93-24, Reactor Water Level Reference Leg Backfill System
- [4] PNPS Final Safety Analysis Report (FSAR)
- [5] Technical Specifications

2.2 IMPLEMENTING

- [1] NMSD 84-479
- [2] NMSD 85-122
- [3] PNPS 1.3.34, *"Conduct of Operations"*

3.0 DEFINITIONS

- [1] ON-LINE - Generator synchronized to the grid
- [2] OFF-LINE - Any condition not defined as ON-LINE
- [3] SYSTEM AVAILABLE - The status of a system, structure, or component that is in service or can be placed in service in a functional or operable state, within a reasonably short period of time, consistent with its intended service.
- [4] SYSTEM OPERABLE - System meets the Technical Specifications definition of "OPERABLE" in accordance with Technical Specifications Section 1.0.E.

4.0 DISCUSSION

This Procedure is provided to serve as the Pilgrim Nuclear Power Station Plant Group's policies regarding permissible plant configurations during planned maintenance and abnormal plant conditions. These policies shall be regarded as mandatory and the equivalent of management directives. Relief from any or all policies can only be granted on a case-by-case basis by the Plant Group Manager. The Technical Specifications shall apply always and shall override these policies should any conflict arise.

This Procedure is arranged similarly to the format of the PNPS Technical Specifications, with each Attachment corresponding to its respective Technical Specifications section. Such formatting promotes adherence to the policies by presenting them in a segregated, logical, and familiar manner.

Nothing stated within this document is intended to reduce the authority of the Nuclear Watch Engineer (NWE) to respond to emergencies in accordance with approved Procedures or to diminish the authority of the NWE as granted under 10CFR50.54(X) and (Y).

5.0 PRECAUTIONS AND LIMITATIONS

In the event a plant condition is experienced and the requirements of this Procedure are in conflict with the Technical Specifications, the Technical Specifications requirements shall be adhered to.

6.0 PROCEDURE

As required by circumstance, or for planning purposes, refer to the instructions, limitations, and guidance contained in the Attachments of this Procedure.

7.0 ATTACHMENTS

ATTACHMENT 1 - GENERAL ADMINISTRATIVE REQUIREMENTS

ATTACHMENT 2 - INSTRUMENTATION

ATTACHMENT 3 - REACTIVITY CONTROL

ATTACHMENT 4 - STANDBY LIQUID CONTROL SYSTEM

ATTACHMENT 5 - CORE AND CONTAINMENT COOLING SYSTEMS

ATTACHMENT 6 - REACTOR COOLANT PRESSURE BOUNDARY

ATTACHMENT 7 - CONTAINMENT SYSTEMS

ATTACHMENT 8 - PLANT SYSTEMS

ATTACHMENT 9 - ELECTRIC POWER

ATTACHMENT 10 - FIRE PROTECTION

ATTACHMENT 11 - PERFORMING LCO-PLANNED MAINTENANCE DURING PLANT
OPERATIONS

GENERAL ADMINISTRATIVE REQUIREMENTS

NOTE

The following apply both ON-LINE and OFF-LINE.

- [1] The plant shall not deliberately be placed in a condition which requires entry into a Limiting Condition for Operation (LCO) in order to perform work without the acknowledgement of such a condition on the work documents.
- [2] The plant shall not be deliberately placed in a condition beyond which is covered by the Technical Specifications Limiting Conditions for Operation.
- [3] The plant shall not be deliberately placed in a condition for routine work activities which directly requires entry into a 24-hour shutdown LCO.
- [4] Whenever a Technical Specifications system or Safety Enhancement Program (SEP) System is removed from service, every attempt should be made to exit the LCO as soon as possible, and any work on that system shall not be scheduled to exceed 75% of the LCO clock duration. The 75% LCO clock duration shall encompass the period of time from inoperability to operability. The actual maintenance activity shall not exceed 50% of the LCO maintenance time (see Attachment 11).
- [5] PNPS has implemented the NRC Maintenance Rule (10CFR50.65, "Requirements for Monitoring The Effectiveness of Maintenance At Nuclear Power Plants") which establishes performance criteria such as system/component unavailability for important systems. Therefore, the decision to remove a system from service to perform planned and/or elective maintenance must consider the out-of-service impact on the ability of the system to continue to achieve its Rule performance criteria.
- [6] Equipment repairs requiring entry into a 7 day (or shorter) LCO which mandates plant shutdown should be worked around the clock whenever conditions permit, unless otherwise directed by the Plant Group Manager.
- [7] Maintenance activities or testing generally considered or identified as "High Risk" activities should not be routinely scheduled between the hours of 0400 to 0800.
- [8] Work should be scheduled by grouping activities by their respective system or subsystem.
- [9] The controls of LCO-Planned Maintenance during plant operations are contained in Attachment 11.

INSTRUMENTATION

NOTE

The following apply both ON-LINE and OFF-LINE.

- [1] Maintenance or testing activities which cause a 1/2 Scram shall not be scheduled or executed at a time when a 1/2 Primary Containment Isolation System (PCIS) signal (or vice versa) is present, unless the activity causes both protective actions due to common logic arrangement.
- [2] Maintenance or testing activities which cause a 1/2 Scram or 1/2 PCIS signal shall not be scheduled or executed when any other maintenance activity that has a high potential to cause a full Reactor Scram is scheduled. **[Scram Frequency Reduction Item SR-02.PR]**
- [3] Logic System Functional Testing should be scheduled and staffed so that the Procedure is worked continuously through completion.
- [4] While the Reactor is above 150 psig, surveillance or maintenance activities which cause a 1/2 PCIS Group I isolation signal should not be scheduled or executed during periods of inoperability of either the High Pressure Coolant Injection (HPCI) System or the Reactor Core Isolation Cooling (RCIC) System unless the activity will reach the limit of its surveillance interval if the test is not performed.
- [5] Any one intentional bypass, maintenance operation, calibration operation, or test to verify operational availability shall not impair the functional ability of the PCIS or the RPS to respond correctly to essential monitored variables. (Reference: PNPS FSAR Sections 7.2.2 and 7.3.3.)

STANDBY LIQUID CONTROL SYSTEM

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CORE AND CONTAINMENT COOLING SYSTEMS

NOTE

The following apply both ON-LINE and OFF-LINE.

- [1] During periods of operation when the Core Standby Cooling Systems (CSCS) are required to be operable, no maintenance activity should be planned or executed which causes the inoperability of more than one CSCS or train at one time.

NOTE

No single failure, maintenance, calibration, or test operation shall prevent the integrated operations of the CSCS from providing adequate core cooling (Reference: PNPS FSAR Section 7.4).

- [2] During periods of operation which require HPCI and RCIC to be operable, weather conditions shall be evaluated prior to either system's removal from service to ensure that the likelihood of a loss of offsite power is not increased due to severe weather conditions.
- [3] Routine or preventive maintenance on Salt Service Water (SSW) Pump C should not be scheduled unless the pump can be returned to service prior to the next scheduled quarterly operability and IST for the remaining four SSW Pumps.
- [4] Routine or preventive maintenance on SSW Pumps A, B, D, or E should not be scheduled unless the pump(s) can be returned to service prior to the next scheduled Quarterly Operability and Inservice Testing (IST) for SSW Pump C.
- [5] Work on any SSW Pump should not be scheduled when seawater temperature is expected to exceed 75°F.
- [6] During periods of Cold Shutdown, with fuel in the vessel, a minimum of two low pressure CSCS subsystems shall be available consisting of: either one Core Spray loop and one RHR loop with one pump or one RHR loop with two pumps. The associated emergency power (as defined in Attachment 9) for these pumps shall also be available. Also, refer to Step [7] below.
- [7] During a refueling outage, for a period of 30 days, refueling operation may continue provided that one Core Spray system or the LPCI System is operable or Technical Specifications Section 3.5.F.5 is met.

REACTOR COOLANT PRESSURE BOUNDARY

- [1] With the Reactor in shutdown conditions, no maintenance activities shall be scheduled or executed which cause the Shutdown Cooling System to be in a configuration where a loss of one power source can preclude Operators from reestablishing Shutdown Cooling. **[Tech Spec 3.9, 11/12/87 Event]**

CONTAINMENT SYSTEMS

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PLANT SYSTEMS

- [1] Whenever the plant is ON-LINE, the following equipment should be worked around the clock whenever removed from service for maintenance:
- (a) TBCCW Pump/Heat Exchanger
 - (b) Stator Cooling Water Pump
 - (c) Main or Emergency Seal Oil Pump
 - (d) Isolated Phase Bus Cooling Fan
 - (e) Turbine Lube Oil Pump
 - (f) AOG Glycol Pump (when AOG is required to be operable)
 - (g) AOG Refrigeration Unit (when AOG is required to be operable)
 - (h) TBCCW/AOG Booster Pumps (when AOG is required to be operable)
 - (i) AOG Charcoal Vault Ventilation
 - (j) CRD Pumps
- [2] Removal of Air Compressor K-110 or K-111 from service for routine preventive maintenance should not be planned or executed unless K-104A, K-104B, and K-104C are operable.
- [3] During Cold Shutdown conditions with irradiated fuel in the vessel, at least one loop of RBCCW and corresponding service water loop, as defined in Technical Specifications Bases Section 3.5.B, shall be operable.
- [4] Whenever the plant is critical and a CRD Pump is to be removed from service, work should be scheduled around the clock until the pump is returned to service.
- [5] During periods of Reactor operation, the RHR Fuel Pool Cooling cross-tie shall not be utilized due to the nonseismic design of the associated piping.
- [6] At all times, except as specified in Step [7] below, at least one loop of fuel pool cooling, consisting of a pump, heat exchanger, and flow path, shall be operable.
- [7] During shutdown conditions, either one loop of fuel pool cooling, consisting of a pump, heat exchanger, and flow path OR the RHR System consisting of a pump, heat exchanger, and flow path to and from the fuel pool, shall be operable.

- [8] At all times, if a major portion of Control Room alarm annunciation or one or more trains of annunciation logic is lost, work should be scheduled around the clock until the system is restored.
- [9] During periods of Reactor operation, maintenance work associated with switchgear H&V (VEX-103A/VEX-103B, VSF-101A/VSF-101B, VREX-102A through F, backup power supply, cabling, ductwork, breakers, switchgear) shall be worked in an expeditious manner.
- [10] Maintenance or testing activities which will remove the Reactor Water Level Reference Leg Backfill System (Rack C2208) from service should be limited to less than 14 days to prevent entering an LCO in accordance with PNPS 1.3.34. (PDC 93-24)

ELECTRIC POWER

1.0 345/23kV SYSTEM

[1] Breakers Availability

- (a) Breakers 102 and 103 should only be overhauled for planned maintenance (one at a time) when the unit is ON-LINE.
- (b) Breakers 104 and 105 should only be overhauled for planned maintenance (one at a time) when the unit is OFF-LINE.

[2] Transformer Availability During Shutdown Conditions

- (a) The Startup Transformer shall be operable with two sources of 345kV power available, OR
- (b) The Unit Auxiliary Transformer is operable and is supplying the plant in the "backscuttle" alignment with ACB-104 and ACB-105 operational, OR
- (c) One 345kV line with the Startup Transformer and the Unit Auxiliary Transformer (in "backscuttle" mode) available, and the 23kV line with the Shutdown Transformer available.

2.0 EMERGENCY POWER

[1] When the unit is shutdown, at least one emergency bus shall be operable with any of the below configurations available to supply power to it:

- (a) The associated Emergency Diesel Generator AND Blackout Diesel Generator.
- (b) The associated Emergency Diesel Generator AND Shutdown Transformer.
- (c) The Shutdown Transformer AND Blackout Diesel Generator.

3.0 DC SYSTEMS

[1] During periods when the Reactor is in the Shutdown condition, at least one 125V DC bus and its associated battery charger shall be operable.

The above electrical requirements are written to perform maintenance on electrical components or systems with the understanding that conditions may arise that would require deviations from these requirements. These deviations will be of short duration after thorough review and require approval of the Plant Group Manager.

- (a) To maintain the calculated PNPS core damage risk as low as practical, all maintenance on any 125V or 250V battery charger will be performed in an expeditious manner.

FIRE PROTECTION

- [1] During conditions when the Reactor is shutdown, the Fire Protection System with the following configuration, as a minimum, shall be maintained:
 - (a) One fire pump (with both sets of starting batteries if the diesel driven pump is used), AND
 - (b) One 240,000 gallon water supply, AND
 - (c) One flow path from (a) and (b) above to the spray, sprinkler, and hose stations.
- [2] In all plant conditions, no more than one leg of the exterior and/or interior loop may be out of service at one time except if required to support a single job.
- [3] No fire protection equipment may be used to support routine Station work (e.g., hoses, hydrants, tools) without permission of the Nuclear Watch Engineer.

PERFORMING LCO-PLANNED MAINTENANCE DURING PLANT OPERATIONS

DISCUSSION

In order for PNPS to be successful in the implementation of on-line LCO-Planned Maintenance it is necessary to establish guidelines that will be adhered to prior to the release of the equipment for corrective or preventive maintenance. PNPS Technical Specifications define the maximum allowable number of operable components that can be taken out of service during power operations. However, the Technical Specifications are not designed to assess and control risk associated with specific maintenance activities or to ensure adequate preplanning has taken place prior to removing equipment from service. By coordinating maintenance activities, the total out-of-service time for safety related equipment is effectively minimized and system availability maximized.

Each LCO-Maintenance activity shall be planned; the degree of planning and review required will generally increase as task complexity, duration, and/or perceived risk associated with the maintenance activity increases. The practice of releasing safety related equipment for maintenance or modification, while the plant is operating, needs to be exercised with conservatism and the observation of the following principles:

- [1] The maintenance should result in an enhancement to the system or component or represent a net safety benefit and be warranted by operational necessity.
- [2] An LCO-Planned Maintenance action on-line is acceptable if it is expected that the reliability of the equipment will improve such that the overall risk to the safe operation to the plant decreases.
- [3] Scheduled repeated entry and exit from the LCO for the purpose of resetting the clock for allowable out-of-service time will not be allowed.
- [4] Other maintenance or testing that increases the likelihood of a plant transient should be avoided. Confidence in the OPERABILITY of the independent equipment that is redundant (or diverse) to the affected equipment should be high.
- [5] LCOs for corrective or preventive maintenance will not be scheduled just prior to a refueling outage with the sole intent of reducing outage scope.
- [6] The planned work should not exceed 50% of the allowable LCO time (this is from inoperable status to operable status).
- [7] The maintenance activity shall be worked around the clock for equipment with a 7 day or less LCO, unless personnel or parts restraints preclude this, such that the out-of-service time is minimized. Around the clock coverage should be considered for all other LCO maintenance.

In summary, PNPS will electively remove safety related equipment from service for corrective or preventive maintenance when it is expected that the net outcome of this maintenance will be increased equipment reliability.

REVIEW/APPROVAL

Upon completion of the LCO-Maintenance Planning Checklist, it shall be reviewed and approved by the LCO Maintenance Review Committee, if required, consisting of Operations, Work Control, Cognizant System Engineer, Cognizant Maintenance Supervisor, and Work Week Manager of implementing week. The Plant Group Manager shall have final review and approval of the completed LCO-Maintenance Planning Checklist. The work shall not proceed without those approvals. When entering into the active LCO, the NWE will review and approve the LCO-Maintenance Planning Checklist.

SIGNIFICANT NON-LCO MAINTENANCE

There will be situations when it is necessary to remove equipment from service for maintenance that does not require an LCO according to PNPS Technical Specifications but does have the potential to adversely impact generation capability or could ultimately result in entering an LCO. It may be necessary to utilize the controls which govern the release of LCO-Planned Maintenance. The LCO-Maintenance Planning Checklist will be utilized at the discretion of the Operations Department Manager (ODM) and shall be used, as a minimum, when working:

- The equipment in Attachment 8 (Plant Systems) Step [1] of this Procedure:
 - (a) TBCCW Pump/Heat Exchanger
 - (b) Stator Cooling Water Pump
 - (c) Main or Emergency Seal Oil Pump
 - (d) Isolated Phase Bus Cooling Fan
 - (e) Turbine Lube Oil Pump
 - (f) AOG Glycol Pump (when AOG is required to be operable)
 - (g) AOG Refrigeration Unit (when AOG is required to be operable)
 - (h) TBCCW/AOG Booster Pumps (when AOG is required to be operable)
 - (i) AOG Charcoal Vault Ventilation
 - (j) CRD Pumps
- Air Compressor K-110/K-111
- ACB-102, ACB-103, ACB-104, and ACB-105

The work shall not commence without the reviews and subsequent approvals called for on the LCO-Maintenance Planning Checklist. The same approval process as the LCO-Maintenance Planning Checklist will be utilized for the planning and implementation of significant non-LCO Maintenance with the exception being that Operations Department Manager and Plant Group Manager signatures are not required.

LCO-MAINTENANCE PLANNING CHECKLIST

Initials

- [1] List below task(s) to be performed. If additional space is required, attach sheet.

Document	Description
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- [2] A comprehensive data base search has been conducted for related PMs, CMs, tests, and inspections that could be performed within allowable time constraints.

Work Control
Supv Scheduling

- [3] The MWP has been reviewed and found satisfactory by the cognizant responsible supervisor.

Work Control
Supv Scheduling

- [4] A hands-on parts verification has been conducted and found to be satisfactory.

Responsible Supv

- [5] A field walkdown has been completed by the cognizant responsible supervisor and pre-job staging has been completed [scaffold erected, tools staged, and determination made that it is physically possible to do the task(s)].

Responsible Supv

- [6] The Active LCO/non-LCO Maintenance has not been scheduled concurrent with other testing or maintenance which increases the likelihood of a plant transient.

Responsible Supv

- [7] Redundant and/or backup systems are not scheduled to be tested during the Active LCO/non-LCO Maintenance duration.

Work Control
Supv Scheduling

DWE/ODM

Initials

- [8] All plant Groups/Departments that are required to provide either direct support or compensatory measures during the maintenance period have been notified of the planned evolutions.

Work Week
Manager

- [9] The performance of the maintenance activities is not scheduled to exceed 50% of the allowable LCO time.

Work Control
Supv Scheduling

- [10] Out-of-service impact on the ability of the system to continue to achieve its Maintenance Rule criteria has been evaluated.

Cognizant
System Engineer

- [11] Contingency plans have been developed to address actions to be taken should it be determined that the LCO timeframe will be exceeded or the maintenance period increased by emerging items or unforeseen circumstances.

DWE/ODM

- [12] On what basis is the maintenance justified (improved reliability, reduction in distraction to Operations, ALARA, PM frequency required, vendor recommendations)?

DWE/ODM

Justification (DWE/ODM):

- [13] Comments:

DWE/ODM

NOTE

The following review applies to LCO-Planned Maintenance with a Technical Specifications action statement that requires a plant shutdown if the component or system is not returned to service in 30 days or less.

Initials

[14] The following review shall be completed by the LCO Maintenance Review Committee if required:

☐ Required

☐ Not Required

DWE/ODM

DWE/ODM

(a) Technical Specifications LCO section(s) have been identified.

LCO Maint. Review Committee

(b) Technical Specifications operability postwork testing has been identified.

LCO Maint. Review Committee

(c) The work instruction is clear and concise.

LCO Maint. Review Committee

(d) The postwork testing is clearly stated and adequate for the planned maintenance.

LCO Maint. Review Committee

(e) The schedule is accurate and in accordance with the scheduling instruction for LCO Maintenance.

LCO Maint. Review Committee

Initials

- (f) Any special testing required exclusive of routine maintenance postwork testing and Operations Technical Specifications testing (i.e., LLRT, ASME Code Testing, etc.) has been identified.

LCO Maint. Review Committee

Comments: _____

Reviewed/Approved:

Operations Department Manager (Active LCO Only) Date

Plant Group Manager (Active LCO Only) Date

Nuclear Watch Engineer Date