Entergy

Entergy Nuclear Generation Company
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360

J. F. Alexander
Director
Nuclear Assessment

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US Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Docket No. 50-293
License No. DPR-35

PILGRIM RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION
BANKED POSITION WITHDRAWAL SEQUENCE TECHNICAL SPECIFICATION CHANGE,
(TAC NO. MA6107)

The Attachment to this letter responds to the NRC request for additional information (RAI) regarding the Technical Specification change request related to the Banked Position Withdrawal Sequence for Reactivity Control. As requested, we have enclosed a condensed version of no significant hazards consideration determination.

Should you have any questions regarding this letter, please contact Walter Lobo at (508) 830-7940.

Sincerely,

J.F. Alexander

WGL/

Attachment and Enclosures

cc: Mr. Alan B. Wang, Project Manager
Project Directorate I-3
Office of Nuclear Reactor Regulation
Mail Stop: OWFN 14B20
1 White Flint North
11555 Rockville Pike
Rockville, MD 20852

U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Senior Resident Inspector
Pilgrim Nuclear Power Station

Mr. Robert Hallisey
Radiation Control Program
Center for Communicable Diseases
Mass. Dept. of Public Health
305 South Street
Jamaica Plain, MA 02130

Mr. Steven McGrail, Director
Massachusetts Energy Management Agency
400 Worcester Road
P.O. Box 1496
Framingham, MA 01701-0313

ATTACHMENT

PILGRIM RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION BANKED POSITION WITHDRAWAL SEQUENCE TS 3/4.3 REACTIVITY CONTROL CHANGES

BACKGROUND:

By letter dated June 16, 1999 (BECo Letter No. 2.99.061) Pilgrim Station requested changes to TS 3/4.3, "Reactivity Control". By letter dated April 7, 2000, the NRC requested additional information to complete its review of the proposed change. This attachment provides Pilgrim response to NRC request for additional information

The proposed TS changes are based upon the operating requirements derived from the General Electric Report, NEDO-21231, "Banked Position Withdrawal Sequence (BPWS)", dated January 1977. The Report describes a revised method for developing control rod withdrawal sequences to mitigate the consequences of the control rod drop accident (CRDA) in the startup and low power operating ranges, i.e., <20% of rated thermal power (RTP). NEDO-21231 includes evaluations of CRDA and BPWS at <20% RTP ranges and 280 cal/gram peak fuel enthalpy.

NRC accepted the NEDO-21231 (for referencing in Licensing Topical Report Amendment 9 to NEDE-24011, "GESTAR-II General Electric Standard Application for Reactor Fuel" Revision 9) by a letter to General Electric, dated January 25, 1985. The NEDO-21231 forms the basis for the current Pilgrim reactor core design process. The proposed TS changes incorporate Specifications and Action statements based upon the plant specific CRDA and BWPS for 20% RTP and 280 cal/gram peak fuel enthalpy.

In addition, the proposed TS changes include changes to the control rod worth limits to resolve License Event Report (LER) 98-006-00, dated April 30, 1998 and its supplement LER 98-006-01, dated August 27, 1988.

The proposed TS changes follow the Standard Technical Specifications (STS) style incorporating the BPWS analysis for the CRDA as applicable to Pilgrim for <20% RTP. The STS style is adopted based upon GESTAR II to reflect the Specifications, Actions, and BASES derived from NEDO-21231.

The proposed TS changes when approved will be in compliance with the Licensing and Design Basis of the Pilgrim Station.

1. NRC REQUEST TS 3.3.A.2.b

Entergy has proposed replacing TS 3.3.A.2.b with TS 3.3B.1 Action C. A note stating "Separate Condition Entry is allowed for each control rod" is added prior to the proposed Action C.1. The applicability of this note would be more clear if placed prior to all the Actions.

PILGRIM RESPONSE:

The TS Note is moved prior to all ACTIONS. The corrected TS Pages are enclosed.

2. NRC REQUEST TS 3.3.B.1 Action D

This proposed Action is added for when control rods are in compliance with NEDO-21231, "Banked Position Withdrawal Sequence" (BPWS) and separate criteria. Entergy has proposed an 8-hour Completion Time for restoring compliance with BPWS and restoring control rod operability. The STS/NUREG-1433 recommended Completion Time is 4 hours. Justify the deviation from the STS.

PILGRIM RESPONSE:

The proposed TS changes follow the STS/NUREG-1433 style incorporating the Pilgrim specific data for CRDA and BPWS for 20% RTP. The STS style is adopted based upon GESTAR II to reflect the Specifications, Actions, and BASES derived from NEDO-21231, however, the proposed TS changes are not a conversion to the STS.

The Pilgrim-specific Completion Time of 8 hours is based upon BPWS analysis for <20% RTP. If two or more control rods are not in compliance with BPWS, action must be taken to restore compliance with BPWS. This action includes performing analysis to verify that the maximum incremental rod worth remains below the amount required to insert the CRDA design limit of 280 cal/gm peak fuel enthalpy, or restore the control rods to operable status. Restoring the rod pattern may require more rod motions at <20% RTP than the STS required control rod motions at <10% RTP. Pilgrim BPWS at <20% RTP is more restrictive than STS BPWS at <10% RTP. Therefore, the 8-hour Completion Time is reasonable considering the low probability of a CRDA occurring during the time the control rods are out of sequence and the time required to restore to a BPWS sequence.

3. NRC REQUEST TS SR4.3.B.1.4

The control rod surveillances have been retained to conduct scram time tests after refueling and outages that last greater than 120 days, and sample tests after every 120 days (SR4.3.C.1 and SR 4.3.C.2). In addition, the STS/NUREG-1433 recommends surveillances for conduct of scram time tests after work on control rods or the CRD system. Why have these STS surveilances not adopted?

PILGRIM RESPONSE

This question relates to the surveillance for post work testing (PWT) following maintenance activities on control rods or CRD system. The surveillance for PWT following maintenance activities is a part of the station practice in accordance with procedure 1.5.20, "Work Control Process". The maintenance work packages are developed using procedure 1.5.20 to conduct maintenance activities on control rods or CRD system. This process requires the maintenance and operations staff or system engineers to specify the type and scope of surveillance PWT following the maintenance activity. Station Procedure 3.M.1-30, "Post Work Testing Guidance" also provides guidance to the plant personnel. The scope of the PWT depends upon the scope of the maintenance activity and falls outside the scope of 10 CFR 50.36; thus PWT guidance is not included in the proposed TS changes. PWT is not specified for other equipment required to be operable by TS-LCO. Adding PWT requirement to 4.3.2.C would therefore be inconsistent with the Pilgrim TS. Also, these proposed TS changes are not a conversion to the STS, thus there is no need at this time to address STS recommendations for inclusion of station practices in the TS.

4. NRC REQUEST TS 3.3.B.1 Action E

This condition and the associated Action have been added for when there are one or more groups with four or more inoperable control rods and is similar to the STS. However the Completion Time for the proposed Action is 8 hours while the STS Completion Time is 4 hours. Justify the deviation from the STS.

PILGRIM RESPONSE

As discussed in response to NRC Request 1, Pilgrim has added more restrictive conditions based upon 20%RTP verses the STS conditions applicable for 10%RTP. Thus, the 8-hour Completion Time is reasonable, considering the restrictions on the number of allowed out of sequence control rods and the low probability of a CRDA occurring during the time the control rods are out of sequence.

5. NRC REQUEST Changes to the BASES

Entergy has stated that the TS Bases Control Program described in TS 5.5.6 controls the BASES. Explain how the BASES changes are made and provide the procedures controlling BASES changes.

PILGRIM RESPONSE

TS 5.5.6 stipulates the control of Technical Specification BASES. A safety evaluation is performed in accordance with 10 CFR 50.59 process to effectuate a change to the BASES of the Technical Specifications. Impact of the proposed changes to the BASES are identified and resolved before implementing changes. BASES are maintained consistent with the FSAR. This process is controlled in accordance with the enclosed Procedure 1.3.6.1 "Technical Specification Changes - Impact Assessment and Implementation of License Amendment" and Work Instruction 3.04-3, "Technical Specification Bases Control".

6. NRC REQUEST TS 3.3.E

Entergy has proposed the Applicability of the Reactivity Anomaly specification to be changed from "during power operation" to "Run Mode". The STS Applicability is similar to the Pilgrim TS; however, it is applicable for both "Run Mode" and "Startup Mode". Reactivity anomalies can occur during power operation, including Startup Mode. The specification should apply in both Run Modes and Startup Mode. Allowances can be made in the Completion Times for the decreased safety significance of the anomalies in the lower power level operations, in order to follow for trouble shooting and correction of the anomaly condition if necessary. Justify the deviation from the STS?

PILGRIM RESPONSE

This comment is incorporated on TS page 3/4-10

ENCLOSURES

1. Revised TS pages 3/4.3-2, 3, and 10 (These pages supercede corresponding pages in Attachment E to the TS Change Submittal, dated June 16, 1999) (3 Pages)

2. Procedure 1.3.6.1, "Technical Specification Changes - Impact Assessment and Implementation of License Amendment" (16 Pages)

3. Work Instruction 3.04-3, "Technical Specification Bases Control" (6 Pages)

4. No Significant Hazards Consideration Determination (Condensed) (10 Pages)

3.3 REACTIVITY CONTROL (continued)

B. Control Rod Operability

LCO 3.3.B.1

Each control rod shall be OPERABLE.

APPLICABILITY:

RUN and STARTUP MODES; REFUEL MODE when the reactor vessel head is fully tensioned. (See also 3.10.D)

ACTIONS

----------NOTE----------
Separate condition entry is allowed for each control rod.

A. One withdrawn control rod stuck.

----------NOTE----------
Rod Worth Minimizer (RWM) may be bypassed as allowed by LCO 3.3.F.
---

1 Verify stuck control rod is separated from other inoperable control rods by two or more OPERABLE control rods immediately.

AND

2 Disarm the associated control rod drive (CRD) within 2 hours.

AND

3 Perform SR 4.3.B.1.1 and SR 4.3.B.1.2 for each withdrawn OPERABLE control rod within 24 hours from discovery of condition A concurrent with thermal power greater than the Low Power Setpoint (LPSP) of the RWM.

AND

4 Verify LCO 3.3.A.1 is met within 72 hours.

4.3 REACTIVITY CONTROL (continued)

AND

(continued)

B. Control Rod Operability

SR 4.3.B.1.1

----------NOTE----------
Not required to be performed until 7 days after the control rod is withdrawn and thermal power is greater than the LPSP of the RWM.

Insert each fully withdrawn OPERABLE control rod at least one notch once per 7 days.

SR 4.3.B.1.2

----------NOTE----------
Not required to be performed until 31 days after the control rod is withdrawn and thermal power is greater than the LPSP of the RWM.

Insert each partially withdrawn OPERABLE control rod at least one notch once per 31 days.

SR 4.3.B.1.3

Verify each withdrawn control rod does not go to the withdrawn overtravel position.

a. Each time the control rod is withdrawn to "full out" position.

AND

b. Prior to declaring control rod OPERABLE after work on control rod or CRD system that could affect coupling.

SR 4.3.B.1.4

Verify each control rod scram time from fully withdrawn to notch position 04 is $\leq$ 7 seconds in accordance with SR 4.3.C.1 or SR 4.3.C.2.

SR 4.3.B.1.5

LIMITING CONDITIONS FOR OPERATION

3.3 REACTIVITY CONTROL (continued)

Determine the position of each control rod once per 24 hours.

B. Control Rod Operability (continued)

LCO 3.3.B.1 (continued)

5 ----------NOTE----------
Not applicable when thermal power > 20% RTP.

Ensure stuck rod is in compliance with banked position withdrawal sequence (BPWS) sequence within 8 hours.

OR

Verify control rod drop accident limit of 280 cal/gm is not exceeded within 8 hours.

B. Two or more withdrawn control rods stuck.

1 Be in HOT SHUTDOWN within 12 hours.

C. One or more control rods inoperable for reasons other than condition A or B.

1 ----------NOTE----------
RWM may be bypassed as allowed by LCO 3.3.F.

Fully insert inoperable control rod within 3 hours.

AND

2 Disarm the associated CRD within 4 hours.

SURVEILLANCE REQUIREMENTS

4.3 REACTIVITY CONTROL (continued)

B. Control Rod Operability (continued)

(continued)

LIMITING CONDITIONS FOR OPERATION

3.3 REACTIVITY CONTROL (continued)

E. Reactivity Anomalies

LCO 3.3.E

The reactivity equivalent of the difference between the actual critical rod configuration and the expected configuration shall not exceed 1% ΔK.

APPLICABILITY:

STARTUP AND RUN MODES

ACTIONS:

A. Limit exceeded.

1 Be in HOT SHUTDOWN within 12 hours.

SURVEILLANCE REQUIREMENTS

4.3 REACTIVITY CONTROL (continued)

E. Reactivity Anomalies

SR 4.3.E

During startups following REFUELING OUTAGES, the critical rod configurations will be compared to the expected configurations at selected operating conditions. These comparisons will be used as base data for reactivity monitoring during subsequent power operation throughout the fuel cycle. At specific power operating conditions, the critical rod configuration will be compared to the configuration expected based upon appropriately corrected past data. This comparison will be made at least every full power month.

PILGRIM NUCLEAR POWER STATION

Procedure No. 1.3.6.1

TECHNICAL SPECIFICATIONS CHANGES - IMPACT ASSESSMENT AND IMPLEMENTATION OF LICENSE AMENDMENT

STAR

Stop
Think
Act
Review

SAFETY RELATED

REVISION LOG

REVISION 0 **Date Originated 8/99**

Pages Affected	Description
All	New Procedure to fulfill the corrective action of PR98.2103.02 that provides instructions for processing proposed changes to the Technical Specifications (TS), TS Bases, and Licensing Basis with Unreviewed Safety Question (USQ), and implementation of license amendments.

TABLE OF CONTENTS

		Page
1.0	PURPOSE AND SCOPE	4
2.0	REFERENCES	4
2.1	DEVELOPMENTAL	4
2.2	IMPLEMENTING	4
3.0	DEFINITIONS	5
4.0	DISCUSSION	7
4.1	GENERAL	7
4.2	PRECAUTIONS AND LIMITATIONS	8
4.3	RESPONSIBILITIES	9
5.0	PROCEDURE	10
5.1	TS CHANGE INITIATION	10
5.2	TS CHANGE IMPACT ASSESSMENT	10
5.3	NUORG REVIEW AND APPROVAL	12
5.4	ORC AND NSRAC REVIEWS	13
5.5	TS SUBMITTAL PACKAGE	13
5.6	ISSUANCE OF LICENSE AMENDMENT	13
5.7	LICENSE AMENDMENT IMPLEMENTATION	14
6.0	ATTACHMENTS	15
ATTACHMENT 1 -	IMPACT STATEMENT FOR PROPOSED TECH SPEC CHANGE	16

1.0 PURPOSE AND SCOPE

This Procedure provides instructions for processing proposed changes to the Technical Specifications (TS), TS Bases, and Licensing Basis with Unreviewed Safety Question (USQ), and implementation of license amendments.

The significant steps of this Procedure are the completion of an impact statement whenever changes to the TS are proposed and completion of impacted changes by the implementation date specified in the license amendment.

2.0 REFERENCES

2.1 DEVELOPMENTAL

[1] CFR50.4, "Written Communications"

[2] CFR50.36(a), "Technical Specifications"

[3] CFR50.59, "Changes, tests and experiments"

[4] CFR50.90, "Application for amendment of license or construction permit"

[5] CFR50.91, "Notice for public comment, State consultation"

[6] CFR50.92, "Issuance of amendment"

[7] CFR54.3, "Current Licensing Basis"

[8] Facility Operating License DPR-35

2.2 IMPLEMENTING

[1] NOP83A3, *"Regulatory Correspondence Control"*

[2] NOP83A7, *"Controlled Documents"*

[3] NOP83E4, *"FSAR Change Request"*

[4] NOP83E5, *"Safety Reviews"*

[5] PNPS 1.3.6, *"Technical Specifications - Adherence and Clarifications"*

[6] PNPS 1.3.54, *"Operations Section Standing and Night Orders"*

[7] PR 98.2103, Root Cause Analysis, Corrective Action No. 2 (PR 98.2103.02)

3.0 DEFINITIONS

[1] Change Package (For NUORG/ORC/NSRAC Review and/or Approval) - A collection of documents assembled for ORC and NUORG review and approval in support of a proposed change to the TS or Licensing Basis with USQ that contain, as a minimum, the following:

(a) A letter to the NRC to be signed under oath or affirmation describing the proposed change, reasons for the change, safety assessment, and no significant hazards consideration (NSHC) determination.

(b) Marked up TS or UFSAR pages delineating the changes.

(c) Revised TS (and/or UFSAR pages, if applicable).

(d) Impact Assessment Forms

[2] Emergency TS Changes (and Amendment) - A TS amendment involving NSHC issued by the NRC without prior notice and opportunity for a hearing or public comment defined in 10CFR50.91(a)(5). This option is used when an emergency exists, in that failure to act in a timely manner would result in de-rating or shutdown, or in prevention of either resumption of operation or increase in power output up to the licensed power level.

[3] Exigent TS Changes (and Amendment) - A TS amendment involving NSHC issued by the NRC without prior notice and opportunity for a hearing or public comment defined in 10CFR50.91(a)(6). This option is used for circumstances other than Definition 3.0[2] that required action to be taken quickly and time does not permit notice or opportunity for a hearing.

[4] Facility Operating License (referred as "License" or "OL") - "License" is a privilege granted by the NRC pursuant to the Atomic Energy Act to operate Pilgrim Nuclear Power Station (PNPS) and is referred to as the Operating License No. DPR-35.

[5] Impact Assessment - A documented activity performed by the Nuclear Organization (NUORG) identifying the impact of the proposed TS change on the plant design, Procedures, operating practices, training, and any other aspects of plant operation that could materially impact the safe operation of the plant.

[6] Implementation Date or Schedule - A time frame (typically 30 days) committed in the proposed license amendment for implementing the change upon approval by the NRC.

The implementation time provides a grace period (and flexibility for the application of "enforcement discretion") to comply with the revised changes that became effective by the license amendment.

[7] Inadvertent Errors - An administrative error introduced inadvertently in the license amendment during the NRC review and approval process of the proposed change.

An inadvertent error approved by the NRC during the license amendment process does not invalidate the license amendment or the Operating License.

[8] License Amendment (LA) - An NRC approved and issued change to the Facility Operating License.

The following NRC approved changes result in license amendments with an amendment number change in Facility Operating License Condition 3.B, Technical Specifications.

- Changes to TS
- Emergency changes to TS
- Exigent changes to TS
- Licensing Basis changes that involved USQs
- Orders modifying the license

LA numbers are identified in the Index of the TS and at the bottom of the affected pages. LAs become effective on the day they are issued and must be implemented within the time frame prescribed in the LA.

[9] Licensing Basis - (See 10CFR54.3.) Normally the Updated FSAR (UFSAR). A change to the licensing basis (or facility or test or experiment) that involves a USQ requires NRC approval in accordance with 10CFR50.59 and 10CFR50.90, 91, and 92. This change results in a license amendment.

A change to the Licensing Basis that does not involve a USQ does not require NRC review and approval. This becomes a change to the FSAR.

[10] No Significant Hazards Consideration (NSHC) - A determination made in accordance with the 10CFR50.92(c) criteria.

[11] Submittal Package (For NRC Approval) - The proposed Change Package approved by the Vice President/Station Director under oath and/or affirmation for submittal to the NRC in accordance with the provisions of 10CFR50.4.

[12] Technical Specifications (TS) - A legally binding document which defines the conditions under which the owner will operate PNPS. The TS are Appendix A to the Operating License and Appendix B in the UFSAR, and satisfy the regulatory requirements of 10CFR50.36.

Changes to TS are processed in accordance with 10CFR50.90, 91, and 92.

[13] TS Bases - Summary statements of the reasons for the specifications and surveillance requirements. Bases are derived from the Design and Licensing Basis of the plant. Bases are not considered to be part of the TS.

Changes to the Bases are processed in accordance with TS 5.5.6, Bases Control Program, and result in an administrative revision to the TS.

[14] TS Clarification - A documented explanation of the intention of a Specification within the scope of licensing and design basis that is reviewed and recommended for approval by the ORC and approved by the Station Director in accordance with PNPS 1.3.6. A TS Clarification is incorporated with an administrative revision number in the Index of the TS.

[15] TS Relief - Relief from Technical Specifications Limiting Conditions for Operation (LCO), normally referred to as Notice of Enforcement Discretion (NOED). It applies to those situations in which an LA is the appropriate mechanism to resolve the situation, but the amendment cannot be processed before the LCO action statement time limit expires.

[16] TS Revision - A chronological revision number that accounts for all the revisions to the Operating License. The revision number and chronology are included in the Index of the TS.

4.0 DISCUSSION

4.1 GENERAL

[1] At all times PNPS must operate in compliance with its License, TS, and Licensing Basis.

[2] Changes to the TS must proceed with an impact assessment to ensure that the proposed changes would not adversely impact the safe operation of the plant and to avoid problems during the implementation of the license amendment.

[3] Upon receipt of NRC approval, the license amendment must be implemented in a timely manner addressing all the impacts identified from the impact assessment and the NRC review and approval cycle (or NRC safety evaluation report).

[4] NUORG review and approval of the proposed changes to TS and Licensing Basis with USQ should be processed in accordance with NOP 83A3 to ensure all commitments and actions have been identified and implemented.

4.2 PRECAUTIONS AND LIMITATIONS

[1] Impact assessment must be completed and signed off by the respective NUORG discipline for all proposed TS changes before ORC review.

[2] Regulatory Affairs Department (RAD) should determine the need and extent of the impact assessment for TS Bases and Licensing Basis with USQ changes as follows:

- A Safety Evaluation (SE) in accordance with NOP83E5, "*Safety Reviews*", shall be completed to process changes to the TS Bases and Licensing Basis that involve USQ.
- If the SE concludes or identifies impacted areas (i.e., plant Procedures, structures/system/components) or a USQ, impact assessment shall be completed.
- RAD shall identify the impacted organizations based upon the impacts included in the SE.
- The impacted organizations shall complete the impact assessment in a timely manner in support of the proposed change.

[3] Licensing Basis with USQ changes should follow the process for changes to the TS.

[4] TS Bases changes should follow the process for changes to the TS, as modified below:

- TS Bases changes require review and recommendation for approval by the ORC. NSRAC review may be obtained at the discretion of RAD; however, all "stand-alone" TS Bases changes shall be sent to NSRAC for information.
- TS Bases shall be maintained consistent with the UFSAR.
- Approved Bases changes shall be forwarded to the NRC Licensing Project Manager along with a brief description of the reason for the change in accordance with NOP83A3.
- TS Bases changes are not required to be submitted under oath or affirmation.

[5] This Procedure should not be used for TS Relief requests.

4.3 RESPONSIBILITIES

[1] VICE-PRESIDENT/STATION DIRECTOR

Station Director (or designee) is responsible for approving the proposed TS and Licensing Basis with USQ change under oath and affirmation for submittal to the NRC for a license amendment pursuant to 10CFR50.4.

[2] MASTER PROCESS OWNER/GROUP MANAGERS

The Master Process Owner/Group Managers are responsible for the following:

- To complete and approve the impact assessment in a timely manner.
- To ensure resources/documents are in place to comply with the new requirements when issued by the NRC as a license amendment.
- To review and approve the proposed change in accordance with NOP83A3.

[3] REGULATORY AFFAIRS DEPARTMENT (RAD) MANAGER

RAD Manager is responsible as follows:

- To process the proposed change to the TS, Licensing Basis with USQ, or TS Bases.
- To review and approve the proposed Change Package for TS or Licensing Basis with USQ in accordance with Correspondence Control NOP83A3.

[4] TS CHANGE TEAM MEMBERS

The TS Change Team members are responsible for the following:

- To identify, develop, review, justify, and approve the recommended or proposed changes to the TS.
- To complete a safety assessment in support of the proposed TS change.
- To perform impact analysis and complete the Impact Statement for Proposed Tech Spec Change form (Attachment 1) by themselves or through their respective organization.

[5] OPERATIONS REVIEW COMMITTEE (ORC)

The ORC is responsible for review and recommending approval or disapproval of the proposed change.

[6] NUCLEAR SAFETY REVIEW AND AUDIT COMMITTEE (NSRAC)

The NSRAC is responsible to review and advise for approval or disapproval of the proposed change.

5.0 PROCEDURE

5.1 TS CHANGE INITIATION

[1] Requests for TS changes can come from any entity within the NUORG, the nuclear industry, and the regulator. The TS are Appendix B of the FSAR; an FSAR Change Request Form (NOP83E4 Exhibit 1) shall be used to request a TS change.

[2] RAD should first challenge the TS change as the preferred solution to the impetus for change. Once satisfied that the TS change is the correct solution, RAD solicits Plant Department approval to proceed with the TS change process.

[3] Since many plant resources are affected by the TS change process, an effective method of optimizing those resources is to form a TS change team comprised of those disciplines most affected. A typical team would be comprised of:

- Regulatory Affairs Engineer (RAE) (as team leader)
- Individual who initiated the TS change
- Operations Process representative
- NESG representative (most likely from S&SA)
- System Engineer(s) for system(s) most affected by the TS change
- Training Process representative
- Others (per affected discipline)

[4] Upon agreement of team member composition, the RAE holds a team meeting. As the team leader, the RAE sets the milestone schedule, makes assignments to the team members, and ensures progress against the milestones.

5.2 TS CHANGE IMPACT ASSESSMENT

[1] As the team leader, the RAE should convene a scoping meeting with the TS team members to complete the following:

- Determine the scope of the proposed TS change;
- Identify the affected Specifications, Bases, and FSAR sections;
- Safety assessment;
- Technical basis for the Proposed TS change; and
- TS Change Package.

The TS Change Package should consist the following:

- A transmittal letter for Oath and Affirmation.
- Attachment 1: Description of the proposed change, reason for the change, safety assessment, and NSHC determination.
- Attachment 2: Marked-up TS, Bases, and FSAR pages, as appropriate.
- Attachment 3: Revised TS and Bases, as appropriate (revised FSAR pages need not be developed, they will be submitted as part of the Updated FSAR under 10CFR50.71(e) requirement).
- Impact Assessment Forms.

[2] The TS team members should review the TS Change Package for accuracy, correctness, and completeness and approve it for distribution to the NUORG for Impact Assessment.

[3] RAD or the TS change team should identify the impacted organizations from the following for completing the Impact Assessment.

- Operations
- Operator Training
- Maintenance
- I&C Maintenance
- NESG
- Radiation Protection
- Nuclear Engineering
- Chemistry
- Operations Support
- Emergency Preparedness
- Security
- Regulatory Affairs

[4] The identified organizations shall complete the Impact Statement for Proposed Tech Spec Change form (Attachment 1) in a timely manner to support the overall schedule.

NOTE

It is important for each team member and the NUORG to realize the significance of identifying impacts in advance. Successful identification of Procedures, surveillances, training, design changes, etc., that need to take place in order to implement the TS once approved by the NRC provides a level of assurance that PNPS is properly implementing the new TS within the required effective date. The intent of pre-identifying the areas to be implemented are to 1) understand the full impact the revision will have on the NUORG and 2) identify impacted areas in advance so work to change Procedures, etc., can be integrated into routine workloads without it becoming a last minute rush priority.

[5] The scope of the impact assessment should include the following items:

- Existing PNPS Procedures (changes to the Procedures, etc.).
- Any new Procedures required to implement the TS changes, if approved.
- Scope of the training and duration to complete the training.
- Resource requirement (modifications, time required to revise or develop Procedures, etc.)
- Any other aspects of the change that could materially impact the safe operation of the plant.

[6] The Master Process Owner/Manager should approve the completed Impact Statement For Proposed Tech Spec Change form (with attachments, if any) and forward it to the RAE.

[7] The RAE should collect all Impact Statement for Proposed Tech Spec Change forms, resolve comments if any, and identify action items in the Correspondence Control Commitment Description Sheet (NOP83A3 Exhibit 2) to complete the impacted items.

5.3 NUORG REVIEW AND APPROVAL

[1] The RAE should include the completed Impact Statement for Proposed Tech Spec Change forms and Commitment/Action Description Sheet with the TS Change Package and distribute to the NUORG Managers for review and approval under the Correspondence Control Process (NOP83A3).

[2] The TS team should resolve all comments during the NUORG review and approval process. The TS Change Package should be approved by the applicable NUORG managers.

5.4 ORC AND NSRAC REVIEWS

NOTE
Before presenting the TS Change Package to the ORC, 1) all Impact Statement for Proposed Tech Spec Change forms must be completed, 2) all comments should be resolved, and 3) TS team members should sign off on the Correspondence Review Signature Sheet (Exhibit 3 of NOP83A3).

[1] The RAE should present the NUORG approved TS Change Package to the ORC for review and recommendation for approval or disapproval.

[2] Upon ORC recommendation for approval, the RAE should distribute the TS Change Package to NSRAC for review and recommendation for approval or disapproval.

[3] At the RAE's discretion, all or select team members should be requested to participate in the ORC and NSRAC presentations.

5.5 TS SUBMITTAL PACKAGE

[1] Upon NSRAC recommendation for approval, the Vice President/Station Director shall approve the TS Change Package under Oath and Affirmation.

[2] The RAE should process the outgoing correspondence to the NRC in accordance with NOP 83A3, *"Regulatory Correspondence Control"*.

5.6 ISSUANCE OF LICENSE AMENDMENT

[1] After submittal of the requested change to the NRC, the RAE monitors the status of the NRC review. NRC Requests for Additional Information (RAIs), if issued, are best handled by re-assembling the original team. This ensures the original change intent is not jeopardized and is cost effective since each member can refer to his/her own background data to best answer or clarify according to the RAI.

[2] NRC will review and approve the proposed TS change in accordance with 10CFR50.90, 91 and 92 and forward the license amendment to Pilgrim Station for implementation.

5.7 LICENSE AMENDMENT IMPLEMENTATION

NOTE

If an inadvertent error is discovered (e.g., pagination errors), the RAE should take the following steps:

1. Contact the NRC Project Manager (PM) for reconciliation. The NRC PM should issue a letter correcting the error.
2. If, instead, the NRC PM indicates an amendment would be required, then submit an application for TS Amendment at the earliest possible time. Also, ensure the issuance of an Operations Standing Order through the Operations Process until the error is corrected through the license amendment process (for Operations Standing Order, see PNPS 1.3.54); or,

   If a clarification will address the issue until the error is corrected, employ the Technical Specifications Clarification process (see PNPS 1.3.6).

[1] Upon receipt of the license amendment, the RAE shall verify the accuracy of the contents of the amended pages against the changes submitted to the NRC and the controlled copy of the TS to ensure there are no inadvertent errors in the license amendment.

[2] The RAE should place a copy of the license amendment in the controlled copy of the TS at the Control Room Annex to ensure the license is updated upon issuance of an amendment.

[3] The RAE should hold a meeting with the affected NUORG Departments to complete the impacted changes and commitments/action items by the implementation time as prescribed in the license amendment. (If additional time is required to implement the requirements, NRC approval should be sought for an extension.)

[4] The affected NUORG Departments should implement the revised TS by completing the revisions to the affected Procedures, developing the required Procedures, completing the training, etc., within the time frame prescribed in the license amendment.

[5] The respective NUORG Managers should inform the RAD Manager by the implementation date of the completion of all the impacted changes and commitments/action items with the required ORC approvals, if any.

[6] Upon confirmation that all impacted changes and commitments/action items have been implemented, the RAE shall ensure that the license amendment, with appropriate revision, are distributed by the Document Control Center through a Controlled Document Transmittal Notice to all holders of controlled Technical Specifications.

6.0 ATTACHMENTS

ATTACHMENT 1 - IMPACT STATEMENT FOR PROPOSED TECH SPEC CHANGE

IMPACT STATEMENT FOR PROPOSED TECH SPEC CHANGE

Please review the attached proposed TS change for impact in your technical area. Identify any documents, training, surveillances, modifications, etc., that will need to be revised to implement the proposed change.

Please return completed sheet to _____ Regulatory Affairs Department by (date)_____.

OPERATOR TRAINING	OPERATIONS
RADIATION PROTECTION	MAINTENANCE AND PROJECTS
SYSTEM ENGINEERING	I&C MAINTENANCE
NUCLEAR ENGINEERING	SECURITY (as applicable)
EMERGENCY PREPAREDNESS	FIRE PROTECTION (as applicable)
OPERATIONS SUPPORT	CHEMISTRY
REGULATORY AFFAIRS	MSTP - PRTC

IMPACT: [If no impact, state "No Impact", sign and date, and return to RAD.]

_____

_____

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_____

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_____

PRINT NAME_____ DATE_____

SIGNATURE_____

REGULATORY AFFAIRS DEPARTMENT

WORK INSTRUCTION NO. 3.04-03

TECHNICAL SPECIFICATIONS (TS) BASES CONTROL

List of Effective Pages
(WI 3.04-03-3)

3.04-03-1	Rev. 0
3.04-03-2	Rev. 0
3.04-03-3	Rev. 0
3.04-03-4	Rev. 0
3.04-03-5	Rev. 0
3.04-03-6	Rev. 0

Prepared By: J.D. Keyes

Approved By: C. S. Brennion
Regulatory Affairs Department Manager

Effective Date: 4/12/99

1.0 PURPOSE AND SCOPE

To provide clarification of the means for processing changes to the BASES of PNPS Technical Specifications (TS) by delineating the requirements, responsibilities, and activities for preparation, review, and process of TS BASES changes. This work instruction implements a TS BASES program for PNPS in accordance with License Amendment No. 177 (Reference 3.1).

2.0 APPLICABILITY

This instruction is applicable to the Regulatory Affairs Department personnel whose activities are associated with TS BASES changes.

3.0 REFERENCES

3.1 Amendment No. 177 to Facility Operating License No. DPR-35, PNPS Incoming NRC letter 1.98.091, dated 7/31/98

3.2 ANSI/ANS 58.8-1979 Criteria for Technical Specifications for Nuclear Power Stations

3.3 10 CFR 50.36(a), Technical Specifications

3.4 Regulatory Affairs Department Work Instruction No. 3.04-01, Changes to Technical Specifications

3.5 10 CFR 50.59, Changes, Tests, and Experiments

3.6 NOP 83A3, Regulatory Correspondence Control

4.0 DEFINITIONS

4.1 Technical Specification - A legally binding document which defines the conditions under which BECo will operate PNPS. The TS are Appendix A to the Operating License and Appendix B in the UFSAR and satisfy the regulatory requirements of 10 CFR 50.36 (Reference 3.3).

4.2 Technical Specification BASES - Summary statements of the reasons for the specifications and surveillance requirements. BASES are not considered to be part of the TS (Reference 3.3).

5.0 RESPONSIBILITIES

5.1 The Regulatory Affairs Department Manager (RADM), (or designee), is responsible for the adequacy of this work instruction and for recommending and implementing revisions, if appropriate.

5.2 The Regulatory Affairs Engineer (RAE) as assigned by the RADM is responsible for implementing this work instruction in concert with other referenced Regulatory Affairs work instructions.

5.3 The RAE is responsible for ensuring that TS BASES changes are tracked similar to TS changes processed in accordance with RAD WI No. 3.04-01 (Reference 3.4).

5.4 The RAE ensures a CFR 50.59 safety evaluation is performed which addresses each change being made to the BASES.

5.5 The RAE is responsible for ensuring that all proposed TS BASES changes are reviewed by the Operations Review Committee (OCR) and where determined appropriate by the RADM or RAE, are presented to the Nuclear Safety Review and Audit Committee (NSRAC).

6.0 REQUIREMENTS

6.1 TS BASES changes require review and approval by the ORC. NSRAC review may be obtained at the discretion of the RADM or RAE.

6.2 TS BASES shall be maintained consistent with the UFSAR.

6.3 TS BASES changes require the performance of a 10CFR 50.59 safety evaluation.

6.4 Changes may be made to TS BASES following ORC approval without prior NRC approval provided the change does not involve :

- A change to the wording, meaning, or the intent of a TS Applicability Statement, TS Safety Limit, TS Limiting Safety System Setting, Limiting Condition for Operation, or Surveillance.

- A change that involves an unreviewed safety question as defined in 10 CFR 50.59 (Reference 3.5).

6.5 Approved BASES changes shall be forwarded to the NRC Licensing Project Manager along with a brief description of the reason for the change in accordance with NOP 83A3 (Reference 3.6).

6.6 TS BASES changes are not required to be submitted under oath or affirmation.

6.7 TS BASES changes should follow the process for changes to the TS provided in RAD WI No. 3.04-01 (Reference 3.4) to the extent determined applicable by the RADM or RAE for BASES changes

7.0 INSTRUCTION

7.1 The requirement for TS BASES stems from 10 CFR 50.36(a) which requires a BASES section explaining a summary or reasons for the specifications other than for the Administrative controls section of the TS. However, the BASES are not part of the TS.

7.2 The original purpose of the BASES developed in support of the original plant licensing was to explicitly correlate the plant design and safety analyses with the TS limits and operating conditions and thereby provide a validation of the overall design for the prescribed modes of operation.

7.3 Examples of the types of information each BASES section should contain include:

Safety Limits - These BASES should identify the barrier to fission product release that is being protected by the limit and explain why that limit is adequate.

Limiting Safety System Setting (LSSS) - These BASES should identify the safety limit or other safety requirement that is being ensured by the LSSS and should describe allowances included in determining the relationship of the LSSS to the safety limit or other safety requirement. Any permitted bypasses of automatic protection should be discussed.

LCOs - These BASES should identify the safety analysis assumption or other safety requirement that establishes the need for the LCO and discuss why the lowest functional capability, performance level of equipment, limiting value of a process parameter, or conservative actuation limit for specified protection devices is appropriate. The rationale for deviations from the specified conditions as allowed by remedial action statements should also be discussed.

Surveillance - The rationale for the surveillance frequency should be identified to facilitate consistent modifications to the frequencies where warranted by plant performance. Where it is not obvious that the surveillance supports the LCO, surveillance BASES should describe how the specified surveillance will assure compliance with the LCO.

7.4 The following should be considered whenever TS BASES are being developed or changes to the BASES are contemplated:

- BASES should be developed ahead of the actual specifications and thereby establish the rationale for the specifications.
- BASES cannot contain requirements over and above those in the specification.

- For each specification there should be a corresponding basis which establishes the link to an identified safety requirement.

- The BASES should identify any plant specific process condition which is controlling for the corresponding specification.

- The relationship between the values specified in the TS and those used in the safety analyses should be provided.

- Instrumentation error and uncertainties assumed in the development of the TS limits should be discussed.

- The rationale for the requirements in remedial action statements and the appropriateness of the condition restoration times relative to an acceptable level of safety should be discussed.

- The sources of information summarized in BASES should be cited.

- Setpoints, surveillance acceptance criteria, equipment tolerances, design specifications, and operational instructions for example, should not be included in the BASES.

7.5 In keeping with the above considerations, an overall, well constructed, TS BASES should provide:

- Explicit justification for the Safety Limits, Limiting Safety System Settings, Limiting Conditions for Operation, and the Surveillance Requirements.

- Information to plant operators that enhance their understanding of the TS.

- Information specific to the margin of safety contained in the TS to allow a 10 CFR 50.59 evaluation relative to the existence of an unreviewed safety question.

8.0 RECORDS

The following records are generated by action of this work instruction if so utilized by the RAE as part of the BASES change process:

- Impact Statement for proposed TS change forms in accordance with RAD WI No. 3.04-01 (Reference 3.4)

9.0 ATTACHMENTS

None

10.0 FORMS

10.1 For Impact Statement for Proposed TS Change Forms, refer to RAD WI No. 3.04-01 (Reference 3.4)

10.2 For Correspondence Review Signature Sheets, refer to NOP 83A3 (Reference 3.6)

10 CFR 50.91 requires licensees requesting an amendment to provide an analysis using the standards in 10 CFR 50.92 that determines whether a significant hazards consideration exists. The following analysis is provided in accordance with 10 CFR 50.91 and 10 CFR 50.92 for the proposed amendment.

Basis for the proposed Amendment: This proposed amendment is based upon the Technical Specification (TS) 5.6.5.b.1 requirements specified for NEDE-24011-P-A "General Electric Standard Application for Reactor Fuel" (GESTAR-II). The proposed amendment incorporates TS changes to comply with the operating requirements derived from GE Report, NEDO-21231, "Banked Position Withdrawal Sequence (BPWS)", dated January 1977, as referenced in NEDE-24011-P-A. NEDO-21231 forms the basis for the current Pilgrim reactor core design process. The proposed TS changes incorporate Specifications and Actions based upon the plant specific control rod drop accident (CRDA) and BPWS for 20% rated thermal power (RTP) and 280 cal/gram peak fuel enthalpy.

NRC accepted the NEDO-21231 by a letter to General Electric dated January 25, 1985. NEDO-21231 describes a revised method for developing control rod withdrawal sequences to mitigate the consequences of the CRDA in the startup and low power operating ranges of 20% RTP and 280 cal/gram peak fuel enthalpy.

The proposed TS changes also include changes to the control rod worth limits to resolve License Event Report (LER) 98-006-00, dated April 30, 1998 and its supplement LER 98-006-01, dated August 27, 1988.

The proposed changes follow NUREG-1433, Rev. 1, BWR/4 Standard Technical Specifications (STS) style incorporating the Pilgrim cycle-specific data for CRDA and BPWS for 20% RTP. The STS style is adopted based upon GESTAR II to reflect the Specifications, Actions, and BASES derived from NEDO-21231.

Summary of Proposed Changes: The proposed TS changes consist of (i) administrative changes, (ii) more restrictive changes, and (iii) less restrictive changes to comply with the TS 5.6.5.b.1 incorporating the current Pilgrim core design based upon the NRC approved NEDO-21231 and NEDE-24011-P-A. The proposed changes are summarized below.

Administrative Changes:

The proposed administrative changes involve reformatting, renumbering, human factors, rewording, and relocations of the Technical Specifications and Bases. These changes do not involve technical changes to the Specifications, and therefore, are administrative.

More Restrictive Changes:

The proposed more restrictive changes incorporate restrictions into the Technical Specifications by either making the current requirements more stringent or by adding new requirements which currently do not exist. The more restrictive changes are described in the Discussion of Changes (M_1, M_2, M_3, M_4, M_5, M_6, M_7, M_8, M_9, M_{10}, M_{11}, and M_{12}) and are summarized below.

Change M_1: Current Technical Specification (CTS) 3.3.F allows a completion time of 24 hours to reach COLD SHUTDOWN if the CTS 3.3.A through D cannot be met. The proposed LCO 3.3.B.1 reduces the completion time to 12 hours to reach HOT SHUTDOWN if the requirements for control rod operability cannot be met. Proposed LCO 3.3.B.3 will require placing the mode switch in shutdown immediately if SRM count rate is < 3 counts/second prior to startup. LCO

3.3.C reduces the completion time to 12 hours to reach HOT SHUTDOWN if the requirements for control rod scram times cannot be met.

Change M_2: This proposed change would delete the allowance to consider control rods that are fully inserted and electrically disarmed inoperable (CTS 3.3.A.2.c). Proposed LCO 3.3.B.1, ACTION C, will require control rods capable of insertion (not stuck) to be fully inserted and disarmed once they have been declared inoperable regardless of reactor thermal power.

Change M_3 : This proposed change would delete the requirements for control rod position indication from Tables 3.2.F and 4.2.F and add surveillance requirement (SR) 4.3.B.1.5. Proposed SR 4.3.B.1.5 will require determination of control rod position only once per 24 hours, which is less restrictive, however, if position indication is lost for a control rod then it must be considered inoperable, fully inserted, and disarmed.

Change M_4: Proposed LCO 3.3.B.1addresses the condition when the reactor is ≤ 20% RTP and two or more inoperable control rods are not in compliance with BPWS, and are not separated by two or more OPERABLE control rods. The required ACTION is to restore compliance with the BPWS within 8 hours, verify control rod drop accident limit of 280 cal/gm is met within 8 hours, or restore the control rod to OPERABLE status within 8 hours.

Change M_5 : CTS 3.3.A.2.d requires control rods are declared inoperable if they have scram times greater than that permitted by CTS 3.3.C.3. The maximum insertion time requirement for control rods to be considered OPERABLE is moved to proposed SR 4.3.B.1.4. If the requirements of the surveillance cannot be met, the control rod is inoperable. CTS 3.3.A.2.d also allows a control rod with scram times greater than those permitted by CTS 3.3.C.3 (7 seconds) to remain at their current position and does not require them to be disarmed. This proposed change would require control rods with scram times greater than those permitted by CTS 3.3.C.3 be fully inserted and disarmed within 4 hours.

Change M_6 : In addition to limiting the total number of inoperable control rods, NEDO-21231, assumes that there are no more than three inoperable control rods in any one BPWS group. Proposed LCO 3.3.B.1 will ensure that this requirement is met.

Change M_7 : CTS SR 4.3.B.I.b requires that rod coupling be verified "when the rod is fully withdrawn the first time after each refueling outage." The proposed SR 4.3.B.1.3 requires this coupling check each time the rod is fully withdrawn.

Change M_8 : CTS 3.3.B.3.b requires control rod patterns and the sequence of withdrawal or insertion be established to ensure maximum rod worth is not exceeded. If the requirements of CTS 3.3.B.3 cannot be met, CTS 3.3.F requires an orderly shutdown be initiated and the plant brought to COLD SHUTDOWN within 24 hours. The proposed LCO 3.3.H, "Rod Pattern Control" will replace CTS 3.3.B.3.b with an appropriate LCO, APPLICABILITY, ACTIONS, and Surveillance Requirements that are consistent with the assumptions of NEDO-21231.

Change M_9 : This proposed change adds a new surveillance (SR 4.3.F.2) for verifying that the RWM is not bypassed when reactor thermal power is ≤ 20% every 24 months. The RWM is automatically bypassed when power is above a specified value. The automatic bypass set point must be verified periodically to be > 20% RTP. The frequency takes into consideration the plant conditions required to perform the test and is intended to be consistent with a 24 months fuel cycle.

Change M_{10} : CTS 3.3.D allows an unspecified number of control rod accumulators to be inoperable as long as no other control rod in the nine-rod square array around this rod has a: (1) Inoperable accumulator, (2) directional control valve electrically disarmed while in a non-fully inserted position, or (3) scram insertion time greater than the maximum permissible insertion time. In addition, if the control rod is inserted "full-in" and its directional control valves are electrically disarmed, it need not be considered to have an inoperable accumulator and the separation criteria would not have to be applied.

Change M_{11} : CTS 3.3.E requires the reactor to be shut down if the reactivity anomaly limit is exceeded without specifying a completion time. Proposed LCO 3.3.E will specify a completion time of 12 hours to reach HOT SHUTDOWN instead of the currently assumed 24 hours.

Change M_{12}: CTS 3.3.G requires the reactor to be in COLD SHUTDOWN within 24 hours if any of the scram discharge volume drain or vent valves are made or found inoperable. Proposed LCO 3.3.G reduces the completion time to 12 hours to reach HOT SHUTDOWN, instead of the currently required 24 hours.

Less Restrictive Changes:

The less restrictive changes are described in the Discussion of Changes (L_1 to L_9) and are summarized below.

Change L_1 : The current TS 3.3.A.2.a requires control rods that cannot be moved with control rod drive or scram pressure be considered inoperable and reactor be brought to a shutdown condition within 48 hours unless investigation demonstrates that the cause of the failure is not due to a failed control rod drive mechanism collet housing. The proposed LCO 3.3.B.1 will allow continued operation with one withdrawn control rod that cannot be moved with control rod drive or scram pressure (stuck rod) regardless of the reason for it being stuck. Continued operation with one stuck control rod is contingent upon (1) verification that the separation criteria is met, (2) the stuck rod is disarmed, (3) all OPERABLE control rods are exercised to ensure there are no other stuck rods, and (4) Reactivity Margin requirements are satisfied. When operating at $\leq$ 20 % RTP, an additional requirement is imposed to verify compliance with BPWS sequence or perform an analysis within 8 hours to ensure that the current positions do not create maximum incremental rod worth that would cause the CRDA limit of 280 cal/gm to be exceeded. In addition, the existing limitation of CTS 3.3.A.2.a for investigating the reason for the failure to insert (e.g., failed collet housing) is being omitted. The proposed ACTIONS will only allow continued operation with one stuck control rod provided all withdrawn control rods are tested within 24 hours to confirm no additional stuck control rods exist. A completion time of 72 hours is allowed for ensuring reactivity margin requirements are met. The 72-hour completion time is considered appropriate because of the ACTIONS necessary to perform the analysis and, even with one control rod stuck in a withdrawn position, the remaining OPERABLE control rods will scram and provide the required shutdown reactivity. A completion time of 8 hours is allowed for ensuring compliance with BPWS sequence or perform a rod worth analysis when $\leq$ 20 % RTP and is consistent with other corrective actions required by NEDO-21231.

Change L_2 : CTS 4.3.A.2 require that all partially or fully withdrawn control rods be exercised at least once per week. The proposed SRs 4.3.B.1.1 and 4.3.B.1.2 require control rods to be inserted in lieu of the requirement for "exercising". The proposed SR 4.3.B.1.1 and SR 4.3.B.1.2 will differentiate between fully and partially withdrawn rods. Fully withdrawn rods will still be inserted one notch once per 7 days. However, partially withdrawn rods will be inserted one notch once per 31 days.

Change L_3 : CTS 4.3.A.2 require all OPERABLE control rods be exercised once every 24 hours if reactor operation continues with three or more inoperable control rods. The proposed requirement for control rods that are inoperable but not stuck (LCO 3.3.B.1), is to fully insert and disarm the inoperable rod(s). Since continued power operation with non-fully inserted, inoperable control rods will not be allowed, there will be no requirement to exercise the OPERABLE rods to verify their operability other than the scheduled surveillance requirements in proposed SR 4.3.B.1.1 and SR 4.3.B.1.2. CTS 4.3.A.2 also requires all OPERABLE control rods be exercised once every 24 hours if reactor operation continues with a stuck control rod for which CRD mechanism failure has not been ruled out. For a stuck control rod, regardless of the reason, the proposed requirement will require all OPERABLE rods to be inserted at least one notch within 24 hours.

Change L_4 : CTS 4.3.B.1 also requires observance of a discernible response of the nuclear instrumentation when a control rod is withdrawn the first time following a refueling outage or maintenance. An indication of a flux level change on nuclear instruments demonstrates control rod motion, but does not demonstrate that a control rod is coupled, as is the intent of existing requirement 4.3.B.I.a. Therefore, this requirement is deleted.

Change L_5 : CTS 4.3.B.1 require observation that the control rod does not go to the over travel position after maintenance without specifying the type of maintenance. The proposed SR 4.3.B.1.3 will only require observing the control rod does not go to the over travel position after maintenance that could affect coupling integrity.

Change L_6 : CTS 3.3.B.3.a does not allow control rods to be moved when the reactor is below 20% rated power, except to shutdown the reactor, unless the Rod Worth Minimizer (RWM) is OPERABLE. A maximum of two rods may be moved below 20% design power when the RWM is inoperable if all other rods, except those which cannot be moved with control rod drive pressure, are fully inserted. Proposed LCO 3.3.F, "Rod Worth Minimizer" will continue to require operability of the RWM below 20% of design power; however, the requirements on control rod movement are being relaxed. Proposed LCO 3.3.F will still require suspension of control rod movement when the RWM is inoperable during Startup unless withdrawal has not been performed with the RWM inoperable in the last 12 months and a second licensed operator or other qualified member of the technical staff verifies movement of control rods is in compliance with the BPWS. The RWM function assists and supplements the operator with an effective backup control rod monitoring routine that enforces adherence to established startup, shutdown, and low power level control rod procedures. Allowing a second licensed operator or other qualified member of the technical staff to verify control rod movement is in compliance with BPWS also provides effective control. Not allowing more than one startup per 12 months will ensure that the RWM is maintained OPERABLE. Although CTS 3.3.B.3. allows control rod movement to shutdown the reactor without any constraints, proposed LCO 3.3.F will also require a second licensed operator or other qualified member of the technical staff to verify movement of control rods is in compliance with BPWS.

Change L_7 : CTS 4.3.B.3.a requires verifying the correctness of the control rod withdrawal sequence input to the RWM computer prior to control rod withdrawal for startup and prior to insertion to reduce power below 20%. This requires verification for each plant startup and shutdown. Proposed SR 4.3.F.3 will require this verification only once following loading of the sequence into the RWM computer.

Change L_8 : CTS 3.3.F states that "Specifications 3.3.A through D above do not apply when there is no fuel in the reactor vessel." This implies that Specifications A through D must be met

during all MODES of operation when there is fuel in the reactor vessel. In the HOT SHUTDOWN and COLD SHUTDOWN MODES, control rods are not able to be withdrawn since the reactor mode switch is in shutdown and a control rod block is applied. This provides adequate requirements for control rod OPERABILITY during these conditions. CTS 3/4.10 provides requirements to ensure that core reactivity is within the capability of the control rods and to prevent criticality during refueling conditions. Therefore, proposed LCO 3.3.B.1 is revised to require APPLICABILITY only in the RUN and STARTUP MODES, or REFUEL MODE when the reactor vessel head is fully tensioned. Since control rod scram times and control rod scram accumulators are conditions for control rod OPERABILITY, LCOs 3.3.C and 3.3.D are also revised accordingly. In addition, there are no design bases accidents (DBAs) or abnormal operational transients identified for conditions when one or less control rods are withdrawn that require a scram. Because the proposed changes do not require APPLICABILITY in all MODES, they are less restrictive.

No Significant Hazards Consideration Determination

Pilgrim has evaluated these proposed Technical Specification changes and has determined that no significant hazards consideration exists. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The following evaluation is provided for the three categories of the significant hazards consideration standards:

1. *Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?*

   Operation of PNPS in accordance with the proposed license amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated because of the following:

   The proposed administrative changes involve reformatting, renumbering, and rewording of the existing Technical Specifications and Bases along with other changes to the Technical Specifications discussed above. The reformatting, renumbering, and rewording along with the other changes listed involves no technical changes to existing Technical Specifications. These changes do not involve any physical alteration of the plant (no new or different type of equipment will be installed), do not introduce any new tests, nor change methods governing normal plant operation.

   This proposed change relocating the details of the methods for timing control rod drives from the Specifications to the BASES involve no technical changes to the Specifications. The requirement to verify scram times is incorporated into proposed SR 3.3.B.1.4; therefore, it does not eliminate any requirements, or impose a new or different treatment of the requirements. The BASES are subject to the Technical Specifications Bases Control Program contained in the Administrative Controls Section of the Technical Specifications. Since any changes to the BASES will be in accordance with these requirements, no increase (significant or insignificant) in the probability or consequences of an accident previously evaluated will be allowed.

   The proposed changes provide more stringent requirements than those currently in the Technical Specifications. The more restrictive requirements will not alter the operation of process variables, structures, systems, or components as described in the safety analyses; therefore, they will not involve a significant increase in the probability of an accident occurring.

The proposed changes will ensure compliance with "NEDO-21231, "Banked Position Withdrawal Sequence (BPWS)". The NEDO-21231 limits the maximum rod worth such that fuel enthalpy addition due to a control rod drop accident (CRDA) will not exceed 280 cal/gm, or require the plant be placed in a condition where the LCOs do not apply sooner. In addition, changes are proposed to require entering a MODE in which the LCOs do not apply sooner than currently required. Therefore, the new requirements may decrease the consequences of an analyzed event.

The consequences of an accident previously evaluated are not increased because the failure of a single control rod to insert will not prevent the reactor from reaching a subcritical condition as long as shutdown margin requirements are met. Elimination of the requirement to shutdown if one rod is stuck due to potential collet finger failure is being made concurrently with another change that will require a reactor shutdown if more than one rod is stuck for any reason. This additional restriction ensures that the reactor will be shut down as soon as it is determined that more than one rod may fail to scram. This differs from the existing requirement that allows operation with multiple stuck rods that are not fully inserted, provided reactivity margin is met.

The proposed SRs 4.3.B.1.1 and 4.3.B.1.2 only increase the interval between performance of a surveillance for only 10% to 20% of the control rods (those that are partially withdrawn). The purpose of the surveillance is to verify that rods can be inserted, thus verifying that rods are not stuck and scram capability is maintained. The 80% to 90% of the control rods that are fully withdrawn will continue to be tested at the 7 day frequency and should a stuck control rod be found, all withdrawn control rods will have to be tested within 24 hours. In addition, this change is being implemented concurrently with more restrictive requirements governing continued operation with stuck and inoperable control rods. Collectively, these changes provide assurance that when a scram is required, the assumptions used in the accident analysis (i.e., most reactive rod fully withdrawn does not scram) will be met.

Continued power operation will not be allowed with inoperable (not stuck) control rods not fully inserted and verification that all OPERABLE control rods can be inserted will be required within 24 hours after discovery of a stuck control rod. In addition, if more than one control rod is stuck the reactor must be brought to HOT SHUTDOWN within 12 hours.

The proposed change eliminates the requirement to verify discernible neutron instrument response to control rod motion, the first time a rod is withdrawn after refueling or maintenance. The probability of an accident is not increased because the proposed change will not involve any physical changes to plant systems, structures, or components (SSCs), or the manner in which these SSCs are operated, maintained, modified, tested, or inspected. The consequences of an accident are not increased because the CRDA analysis assumes a single failure of the control rod drive system when a single control rod drops out of the core from the fully inserted position after being disconnected from its drive and after the drive has been retracted to the fully withdrawn position while reactor power is less than 20%. During startup and before exceeding 20% reactor power, a large percentage of the rods are fully withdrawn in the normal course of a startup. All fully withdrawn rods are subjected to verification of coupling by the overtravel test. Since the deleted surveillance was intended to identify a rod that is both uncoupled and stuck in the fully inserted position, the number of fully withdrawn rods in the normal withdrawal sequence before reaching 20% power constitutes a very large

sample being used to identify a random and very rare event. Therefore, there is no increase in the probability that more than one control rod will remain uncoupled and stuck in the fully inserted position without being identified. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change will allow either a second licensed operator or other qualified members of the technical staff to verify movement of control rods when the RWM is inoperable. The function of the RWM is to control adherence to the control rod withdrawal and insertion sequence. The use of a second licensed operator or other qualified members of the technical staff to perform these control rod movement verifications also provides effective control. Not allowing more than one startup per 12 months with the RWM inoperable will ensure that the RWM is maintained OPERABLE.

The RWM does not monitor core thermal conditions, but simply enforces preprogrammed rod patterns as a backup intended to prevent reactor operator error in selecting or positioning control rods. Once the sequence is loaded into the RWM computer and verified, there is no reason to believe that it will change inadvertently. Controls are in place to ensure that required changes are performed and verified by technically qualified individuals.

Control rod OPERABILITY is required to ensure reactivity control and power level control and to mitigate the consequences of design basis accidents (DBAs) or abnormal operational transients (AOTs). The station safety analysis does not identify any DBAs or AOTs that require control rod scram under conditions where no more than one control rod is withdrawn. In the HOT SHUTDOWN and COLD SHUTDOWN MODES, control rods are not able to be withdrawn since the reactor mode switch is in shutdown and a control rod block is applied. In the REFUEL MODE, only one control rod can be withdrawn. This provides adequate requirements for control rod OPERABILITY during these conditions. CTS 3/4.10 provides requirements to ensure that core reactivity is within the capability of the control rods and to prevent criticality during refueling conditions.

The reactivity anomaly LCO provides a simple comparison of predicted versus actual conditions and is not an initial condition of a design basis accident (DBA) or AOT.

2. *Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?*

Operation of PNPS in accordance with the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated because of the following:

The proposed administrative changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed nor is any equipment being removed) nor change methods governing normal plant operation. The proposed change will not impose any new or different requirements nor eliminate any existing requirements. The proposed change relocating the details of the methods for timing control rod drives to the BASES will not alter the plant configuration (no new or different type of equipment will be installed nor is any equipment being removed) or change methods governing normal plant operation. This change will not impose different requirements and adequate

control of information will be maintained. This change will not alter assumptions made in the safety analysis and licensing basis.

The more restrictive and new requirements will not alter the plant configuration (no new or different type of equipment will be installed nor is any equipment being removed) or change methods governing normal plant operation. The changes do impose different requirements; however, they are consistent with assumptions made in the safety analyses.

The proposed less restrictive change that increases the interval between performance of surveillance designed to verify that rods can be inserted for only 10% to 20% of the control rods (those that are partially withdrawn) not the manner in which the surveillance is performed does not impact reactivity controls. Continued operation will only be allowed with one stuck control rod and all other inoperable control rods must be fully inserted and disarmed. Observation of indication of a flux level change on nuclear instruments when a control rod is withdrawn does not ensure coupling. The requirement to verify the control rod does not go to over travel when withdrawn to the full out position, the only positive test of coupling integrity, is being retained. Compliance with the requirement to follow the BPWS is still maintained. The changes in reactivity are not structures, systems, or components; therefore, the proposed changes will not involve any physical changes to the plant or the manner in which the plant is operated.

3. *Does this change involve a significant reduction in a margin of safety?*

Operation of PNPS in accordance with the proposed change will not involve a significant reduction in a margin of safety because of the following:

The proposed administrative changes do not involve any physical alteration of the plant, do not introduce any new tests, nor change methods governing normal plant operation.

The proposed change relocating the details of the methods for timing control rod drives to the Bases does not impact the safety margin. The requirement to verify scram times is incorporated into proposed SR 3.3.B.1.4; therefore, it does not eliminate any requirements, or impose a new or different treatment of the requirements. The requirements to be transposed from the Technical Specifications to the BASES are the same as the existing Technical Specifications. The BASES are subject to the Technical Specifications Bases Control Program contained in the Administrative Controls Section of the Technical Specifications. Since any changes to the BASES will be in accordance with these requirements, no increase (significant or insignificant) in the probability or consequences of an accident previously evaluated will be allowed.

Adding new requirements and making existing ones more restrictive does not involve a physical alteration of the plant (no new or different type of equipment will be installed nor is any equipment being removed), introduce any new tests, or change methods governing normal plant operation. The proposed changes will ensure compliance with BPWS. The BPWS limits the maximum rod worth such that fuel enthalpy addition due to a CRDA will not exceed 280 cal/gm, or requires the plant be placed in a condition where the LCOs do not apply sooner, or requires entering a MODE in which the LCOs do not apply sooner than currently required.

Elimination of the requirement to shutdown if one rod is stuck due to potential collet finger failure will not decrease a margin of safety because this change is being made concurrently with another change that will require a reactor shutdown if more than one rod is stuck for any reason. This additional restriction ensures that the reactor will be shut down as soon as it is determined that more than one rod may fail to scram and the assumptions used in the analysis of those accidents and transient that depend on a scram may no longer be met. The failure of a single control rod to insert will not prevent the reactor from reaching a subcritical condition as long as shutdown margin requirements are met.

The margin of safety is not reduced even though the proposed increase in the interval between performances of a surveillance may increase the time before a stuck rod is discovered. However, the increased frequency does not apply to fully withdrawn rods which represent a significant sample size (80% to 90%) when looking for an infrequent, random event. Additionally, this change is being implemented concurrently with more restrictive requirements governing continued operation with stuck and inoperable control rods. Collectively, these changes provide assurance that when a scram is required, the assumptions used in the accident analysis (i.e., most reactive rod fully withdrawn does not scram) will be met.

The proposed change will limit control rod movement verification when the RWM is inoperable, to once per 12 months. Only licensed operators or other qualified members of the technical staff (i.e., personnel trained in accordance with an approved training program) will be allowed to verify control rod movement. Each of these individuals, as a part of their qualification process, receive training in the use of the RWM, the Control Rod Drive System, and permissible control rod sequences.

The RWM does not monitor core thermal conditions, but simply enforces preprogrammed rod patterns as a backup intended to prevent reactor operator error in selecting or positioning control rods. Once the sequence is loaded into the RWM computer and verified there is no reason to believe that it will change inadvertently. Controls are in place to ensure that required changes are performed and verified by technically qualified individuals.

The proposed change will continue to require control rod OPERABILITY, scram function, and accumulator OPERABILITY during plant conditions requiring reactivity control to mitigate the consequences of DBAs and AOTs. The changes do not impact the ability of equipment to maintain the plant within acceptable limits and continues to provide assurance that plant operation **is** maintained within safety analysis assumptions.

Conclusion:

The proposed license amendment complies with the licensing and design basis of the plant in accordance with the previously NRC accepted GE Report, NEDO-21231, "Banked Position Withdrawal Sequence" and control rod drop accident consequences to operate the plant within the 280 cal/gm peak fuel enthalpy. Also, the proposed Technical Specification changes do not significantly increase the probability or consequences of an accident previously evaluated, or create the possibility of a new or different accident or reduce the safety margin.

The proposed changes are reviewed and approved by the plant Operations Review Committee and reviewed by the Nuclear Safety Review Committee.

ENVIRONMENTAL CONSIDERATIONS

The proposed change in the Reactivity Control Technical Specifications are required to comply with the existing Specification 5.6.5.b.1 to incorporate the operating requirements based upon the current Pilgrim core design process that was previously approved by the NRC. The proposed change does not involve effluent releases or radiation exposure, and has no impact upon the environment surrounding the Pilgrim Station. Therefore, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and pursuant to 10 CFR 51.22(b) no environmental statement or environmental assessment need to be prepared in connection with the issuance of this amendment.