INSTRUMENTATION

INCORE DETECTORS

LIMITING CONDITION FOR OPERATION

3.3.3.2 The incore detection system shall be OPERABLE with:

a. At least 75% of all incore detector locations, and 75% of all detectors, with at least one detector in each quadrant at each level; and

b. A minimum of ~~two quadrant symmetric incore detector locations per core quadrant.~~ six tilt estimates, with at least one at each of three levels.

An OPERABLE incore detector location shall consist of a fuel assembly containing a fixed detector string with a minimum of four OPERABLE rhodium detectors or an OPERABLE movable incore detector capable of mapping the location.

APPLICABILITY: When the incore detection system is used for monitoring:

a. AZIMUTHAL POWER TILT,

b. Radial Peaking Factors,

c. Local Power Density,

d. DNB Margin.

ACTION:

a. With the incore detection system inoperable, do not use the system for the above applicable monitoring or calibration functions.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.2 The incore detection system shall be demonstrated OPERABLE:

a. By performance of a CHANNEL CHECK within 24 hours prior to its use if the system has just been returned to OPERABLE status or if 7 days or more have elasped since last use and at least once per 7 days thereafter when required for monitoring the AZIMUTHAL POWER TILT, radial peaking factors, local power density or DNB margin:

b. At least once per 18 months by performance of a CHANNEL CALIBRATION operation which exempts the neutron detectors but includes all electronic components. The fixed incore neutron detectors shall be calibrated prior to installation in the reactor core.

SECTIONS 3.9.1 and 3.10.1

A. DESCRIPTION OF AMENDMENT REQUEST:

The proposed amendment would modify Technical Specifications 3.9.1 and 3.10.1 by revising the minimum boration flow requirement to 26 gpm from 40 gpm in the action statement in a manner to be consistent with existing Technical Specifications 3.1.1.1, 3.1.1.2 and 3.1.2.2 and existing Unit 2 and 3 Specifications 3.9.1 and 3.10.1.

B. PURPOSE OF THE TECHNICAL SPECIFICATION:

Specification 3.9.1

The purpose of this specification is to provide boron injection flow requirements and limitations on reactivity conditions during refueling to ensure that: (1) the reactor will remain subcritical during core alterations, and (2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. These limitations are provided to assure consistency with the initial conditions assumed for the boron dilution event in the safety analysis. The value of 0.95 or less of Effective Multiplication Factor (K) includes a 1% delta k/k conservative allowance for uncertainties. Similarly, the boron concentration value of 2150 ppm or greater also includes a conservative uncertainty allowance of 50 ppm boron.

Specification 3.10.1

The purpose of this specification is to provide a special test exception for suspension of Specification 3.1.1.1 for measurement of CEA worth and shutdown margin. The special test exception provides that a minimum amount of CEA worth is immediately available for reactivity control when tests are performed for CEAs worth measurement. This special test exception is required to permit the periodic verification of the actual versus predicted core reactivity condition occurring as a result of fuel burnup or fuel cycling operations. Although testing will be initiated from MODE 2, temporary entry into MODE 3 is necessary during some CEA worth measurements. A reasonable recovery time is available for return to MODE 2 in order to continue physics testing. Charging pump flow capability is specified to ensure that borated water can be added to maintain shutdown margin.

C. NEED FOR THE SPECIFICATION AMENDMENT:

Technical Specifications 3.9.1 and 3.10.1 currently contain an incorrect requirement for boron injection at 40 gpm which is inconsistent with the plant operating capabilities and design and inconsistent with existing Technical Specifications 3.1.1.1, 3.1.1.2 and 3.1.2.2 and existing Unit 2 and 3 Specifications 3.9.1 and 3.10.1. This Amendment is provided to revise the action statements of Technical Specifications 3.9.1 and 3.10.1 to make them consistent with Technical Specifications 3.1.1.1, 3.1.1.2, and 3.1.2.2. The action statements for Technical Specifications 3.9.1 and 3.10.1 currently require boration at a flowrate greater than or equal to 40 gpm when the associated Limiting Conditions for Operation (LCOs) are not met. This

amendment will change this flow requirement from 40 gpm to 26 gpm. This change will revise the Technical Specifications to be in accordance with actual design of the charging system. Plant design provides that, with one charging pump in operation, a portion of the charging flow is directed to Reactor Coolant Pump (RCP) seal injection. A portion of this seal injection flow would be returned directly to the Volume Control Tank (VCT) and not to the Reactor Coolant System (RCS). The end result is that approximately 26 gpm of borated water from the one charging pump will be supplied to the RCS.

D. BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION:

1. The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves no significant hazards considerations if operation of the facility in accordance with a proposed amendment would not: (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) Involve a significant reduction in a margin of safety.

   A discussion of these standards as they relate to the amendment request follows:

   Standard 1--Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated.

   The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated because the change does not alter the current design of the facility. The Technical Specifications are being changed to agree with the actual design and operation of the plant. Specifically, with one charging pump in operation, a portion of the charging flow does not reach the RCS due to RCP seal injection and seal bleedoff. Thus, the change is in accordance with the previously reviewed design of the plant and the capability of the charging pump to supply borated water to the RCS is not affected. The amendment does not, therefore, significantly increase the probability or consequences of an accident previously evaluated.

   Standard 2--Create the Possibility of a New or Different Kind of Accident from Any Accident Previously Evaluated

   The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated because the change does not vary, affect or provide any physical changes to the plant. This proposed change only revises the Technical Specifications to reflect the actual design and operation of the plant and to reflect consistency with other similar Technical Specification parameters for boron flow. For these reasons we have determined that the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3--Involve a Significant Reduction in a Margin of Safety.

The requested amendment does not involve a significant reduction in a margin of safety because the amendment will not change the design bases of the facility. It would only correct an error in the Technical Specifications so as to provide consistency with existing Technical Specification requirements for boron injection flow. The action statements of Technical Specifications 3.9.1 and 3.10.1 are designed to ensure that borated water concentration can be supplied to the RCS when the associated LCOs for boron or shutdown margin are not met. This change does not affect the capability of the charging pump to supply borated water to the RCS to restore the plant to a condition of compliance with the LCOs. For these reasons, we have determined that the change does not involve a significant reduction in the margin of safety.

Based on these considerations, we have determined that the proposed change does not involve a significant hazards consideration.

2. The proposed amendment matches one of the examples given in 51FR7751 of amendments that do not involve a significant hazards consideration. Specifically, the proposed amendment is a change to achieve consistency (Example (i)), throughout the Technical Specifications. The action statements of Technical Specifications 3.9.1 and 3.10.1 are being changed to achieve consistency with Technical Specifications 3.1.1.1, 3.1.1.2, and 3.1.2.2. These Technical Specifications state that 26 gpm of borated water must be suppled to the RCS when the associated LCOs are not met. This 26 gpm flowrate is based on operation of one charging pump with concurrent operation of RCP seal injection and seal bleedoff.

E. SAFETY ANALYSIS OF THE PROPOSED CHANGE REQUEST

The proposed Technical Specification change will not increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the FSAR. This change is in accordance with the previously evaluated design of the plant. The nominal flowrate of one charging pump is approxiamately 44 gpm. When the effects of RCP seal injection and seal bleedoff are considered, the net charging flow to the RCS is approximately 26 gpm. Thus, this change is in accordance with the original plant design and assurance is still provided that borated water can be supplied to the RCS to maintain the required boron concentration or shutdown margin.

The proposed Technical Specification change will not create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR. No physical changes are being made to the plant and this change only revises the Technical Specifications to reflect the actual design and operation of the plant.

The proposed Technical Specification change will not reduce the margin of safety as defined in the basis for any technical specification. The basis for Technical Specifications 3.9.1 and 3.10.1 are to ensure that: i)

adequate negative reactivity conditions are maintained during refueling, and ii) a minimum amount of CEA worth is available for reactivity control during physics testing. This change does not affect these bases since assurance is provided that adequate borated water flow can be provided to the RCS if the associated LCOs are not satisfied.

F. ENVIRONMENTAL IMPACT CONSIDERATION DETERMINATION

The proposed change does not involve an unreviewed environmental question because operation of PVNGS Unit 1 in accordance with this change would not:

1. Result in a significant increase in any adverse environmental impact previously evaluated in the Final Environmental Statement (FES) as modified by the staff's testimony to the Atomic Safety and Licenisng Board, Supplements to the FES, Environmental Impact Appraisals or in any decisions of the Atomic Safety and Licensing Board; or

2. Result in a significant change in effluents or power levels; or

3. Result in matters not previously reviewed in the licenising basis for PVNGS which may have a significant environmental impact.

G. MARKED-UP TECHNICAL SPECIFICATION CHANGE PAGES

(See attached pages 3/4 9-1, 3/4 10-1)

3/4.9 REFUELING OPERATIONS

3/4.9.1 BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.1 With the reactor vessel head closure bolts less than fully tensioned or with the head removed, the boron concentration of all filled portions of the Reactor Coolant System and the refueling canal shall be maintained uniform and sufficient to ensure that the more restrictive of the following reactivity conditions is met:

a. Either a K_{eff} of 0.95 or less, or

b. A boron concentration of greater than or equal to 2150 ppm.

APPLICABILITY: MODE 6*.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate and continue boration at greater than or equal to 26 ~~40~~ gpm of a solution containing ≥ 4000 ppm boron or its equivalent until K_{eff} is reduced to less than or equal to 0.95 or the boron concentration is restored to greater than or equal to 2150 ppm, whichever is the more restrictive.

SURVEILLANCE REQUIREMENTS

4.9.1.1 The more restrictive of the above two reactivity conditions shall be determined prior to:

a. Removing or unbolting the reactor vessel head, and

b. Withdrawal of any full-length CEA in excess of 3 feet from its fully inserted position within the reactor pressure vessel.

4.9.1.2 The boron concentration of the Reactor Coolant System and the refueling canal shall be determined by chemical analysis at least once per 72 hours.

*The reactor shall be maintained in MODE 6 whenever fuel is in the reactor vessel with the reactor vessel head closure bolts less than fully tensioned or with the head removed.

3/4.10 SPECIAL TEST EXCEPTIONS

3/4.10.1 SHUTDOWN MARGIN

LIMITING CONDITION FOR OPERATION

3.10.1 The SHUTDOWN MARGIN requirement of Specification 3.1.1.1 may be suspended for measurement of CEA worth and shutdown margin provided reactivity equivalent to at least the highest estimated CEA worth is available for trip insertion from OPERABLE CEA(s), or the reactor is subcritical by at least the reactivity equivalent of the highest CEA worth.

APPLICABILITY: MODES 2, 3* and 4*#.

ACTION:

a. With any full-length CEA not fully inserted and with less than the above reactivity equivalent available for trip insertion, immediately initiate and continue boration at greater than or equal to 26 ~~40~~ gpm of a solution containing greater than or equal to 4000 ppm boron or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

b. With all full-length CEAs fully inserted and the reactor subcritical by less than the above reactivity equivalent, immediately initiate and continue boration at greater than or equal to 26 ~~40~~ gpm of a solution containing greater than or equal to 4000 ppm boron or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

SURVEILLANCE REQUIREMENTS

4.10.1.1 The position of each full-length and part-length CEA required either partially or fully withdrawn shall be determined at least once per 2 hours.

4.10.1.2 Each CEA not fully inserted shall be demonstrated capable of full insertion when tripped from at least the 50% withdrawn position within 24 hours prior to reducing the SHUTDOWN MARGIN to less than the limits of Specification 3.1.1.1.

4.10.1.3 When in MODE 3 or MODE 4, the reactor shall be determined to be subcritical by at least the reactivity equivalent of the highest estimated CEA worth or the reactivity equivalent of the highest estimated CEA worth is available for trip insertion from OPERABLE CEAs at least once per 2 hours by consideration of at least the following factors:

a. Reactor Coolant System boron concentration,

b. CEA position,

c. Reactor Coolant System average temperature,

d. Fuel burnup based on gross thermal energy generation,

e. Xenon concentration, and

f. Samarium concentration.

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*Operation in MODE 3 and MODE 4 shall be limited to 6 consecutive hours.

#Limited to low power PHYSICS TESTING at the 320°F plateau.

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