APPLICATION FOR AMENDMENT

TO

FACILITY OPERATING LICENSE NUMBER NPF-3

DAVIS-BESSE NUCLEAR POWER STATION

UNIT NUMBER 1

Attached is the requested change to the Davis-Besse Nuclear Power Station, Unit Number 1 Facility Operating License Number NPF-3. Also included is the Safety Assessment and Significant Hazards Consideration.

The proposed change (submitted under cover letter Serial Number 2313) concern:

Appendix A, Technical Specifications (TS):

3/4.1.2.8	Reactivity Control Systems - Borated Water Sources - Shutdown, and associated Bases 3/4.1.2, Boration Systems,
3/4.1.2.9	Reactivity Control Systems - Borated Water Sources - Operating, associated Bases 3/4.1.2, Boration Systems,
3/4.5.1	Emergency Core Cooling Systems (ECCS) - Core Flooding Tanks
3/4.5.2	ECCS - ECCS Subsystems - Tavg $\geq$ 280°F, and associated Bases 3/4.5.2 and 3/4.5.3, ECCS Subsystems,
3/4.5.4	ECCS - Borated Water Storage Tank, and
3/4.9.1	Refueling Operations - Boron Concentration, and associated Bases 3/4.9.1, Boron Concentration

By: _____
J. P. Stetz, Vice President - Nuclear

Sworn to and subscribed before me this 29th day of September, 1995.

_____
Notary Public, State of Chio

EVELYN L. DRESS
Notary Public, State of Ohio
My Commission Expires 7/28/99

The following information is provided to support issuance of the requested changes to the Davis-Besse Nuclear Power Station (DBNPS), Unit Number 1 Operating License Number NPF-3, Appendix A, Technical Specification (TS) 3/4.1.2.8, Reactivity Control Systems - Borated Water Sources - Shutdown, TS 3/4.1.2.9, Reactivity Control Systems - Operating, TS 3/4.5.1, Emergency Core Cooling Systems (ECCS) - Core Flooding Tanks, TS 3/4.5.2, ECCS - ECCS Subsystems - Tavg $\geq$280°F, TS 3/4.5.4, ECCS - Borated Water Storage Tank, TS 3/4.9.1, Refueling Operations - Boron Concentration, and associated TS Bases.

A. Time Required to Implement: This change is to be implemented within 90 days after NRC issuance of the License Amendment, or during the Tenth Refueling Outage, whichever occurs later.

B. Reason for Change (License Amendment Request Number 95-0010):

The proposed changes would increase the minimum available borated water volume requirement for the Boric Acid Addition System (BAAS), the minimum and maximum boron concentration requirements for the Borated Water Storage Tank (BWST), and the minimum boron concentration requirement for the Core Flooding Tanks (CFTs), thereby providing flexibility for longer fuel cycles, including the upcoming Cycle 11. The proposed changes would also modify the Surveillance Requirements relating to trisodium phosphate dodecahydrate (TSP), and would modify the refueling boron concentration requirements and the associated Action statement.

C. Safety Assessment and Significant Hazards Consideration: See Attachment.

Docket Number 50-346
License Number NPF-3
Serial Number 2313
Attachment

SAFETY ASSESSMENT AND SIGNIFICANT HAZARDS CONSIDERATION
FOR
LICENSE AMENDMENT REQUEST NUMBER 95-0010

(34 pages follow)

SAFETY ASSESSMENT AND SIGNIFICANT HAZARDS CONSIDERATION
FOR
LICENSE AMENDMENT REQUEST NUMBER 95-0010

TITLE:

Revision of Technical Specifications (TS):

3/4.1.2.8	Reactivity Control Systems - Borated Water Sources - Shutdown, and associated Bases 3/4.1.2, Boration Systems,
3/4.1.2.9	Reactivity Control Systems - Borated Water Sources - Operating, associated Bases 3/4.1.2, Boration Systems,
3/4.5.1	Emergency Core Cooling Systems (ECCS) - Core Flooding Tanks,
3/4.5.2	ECCS - ECCS Subsystems - Tavg $\geq$ 280°F, and associated Bases 3/4.5.2 and 3/4.5.3, ECCS Subsystems,
3/4.5.4	ECCS - Borated Water Storage Tank, and
3/4.9.1	Refueling Operations - Boron Concentration, and associated Bases 3/4.9.1, Boron Concentration

DESCRIPTION:

The purpose of the proposed changes is to modify the Davis-Besse Nuclear Power Station (DBNPS) Operating License NPF-3, Appendix A Technical Specifications (TS) and associated Bases. The proposed changes would increase the minimum available borated water volume requirement for the Boric Acid Addition System (BAAS), the minimum and maximum boron concentration requirements for the Borated Water Storage Tank (BWST), and the minimum boron concentration requirement for the Core Flooding Tanks (CFTs), thereby providing flexibility for longer fuel cycles, including the upcoming Cycle 11. The proposed changes would also modify the Surveillance Requirements relating to trisodium phosphate dodecahydrate (TSP), and would modify the refueling boron concentration requirements and the associated Action statement. Various administrative changes are also proposed. Each change is described in further detail below. Each of the proposed changes is also shown on the Attachment.

TS 3/4.1.2.8, Reactivity Control Systems - Borated Water Sources - Shutdown:

It is proposed to increase the minimum BAAS volume Limiting Condition for Operation (LCO) from 700 gallons to 900 gallons and increase the minimum BWST boron concentration LCO from 2100 ppm to 2600 ppm.

An administrative change to the BAAS boron concentration requirement of "Between 7875 and 13,125 ppm" to "$\geq$ 7875 and $\leq$ 13,125 ppm", is also proposed.

Associated Bases changes are described below.

TS 3/4.1.2.9, Reactivity Control Systems - Borated Water Sources - Operating:

It is proposed to revise Figure 3.1-1, "Boric Acid Addition System Minimum Required Volume as a Function of Boric Acid Concentration Required in Modes 1-4", in order to increase the minimum required volume.

It is proposed to increase the minimum and maximum BWST boron concentrations from 2100 ppm and 2200 ppm to 2600 ppm and 2800 ppm, respectively.

It is also proposed to make administrative changes to the BAAS boron concentration requirement of "Between 7875 and 13,125 ppm" to "$\geq$ 7875 and $\leq$ 13,125 ppm" and to the BWST requirement of "Between 2100 and 2200 ppm" to "$\geq$ 2600 and $\leq$ 2800 ppm", using the proposed revised values.

Associated Bases changes are described below.

Bases 3/4.1.2, Boration Systems:

For the maximum boration requirements from hot full power to 200°F, it is proposed to increase the minimum volume requirement for the BAAS from 9,071 gallons at a minimum boric acid concentration of 7875 ppm to 12,200 gallons, and to increase the minimum volume requirement for the BWST from [illegible] gallons at a minimum boron concentration of 2100 ppm to 68,700 gallons at a minimum boron concentration of 2600 ppm. It is also proposed to add a statement explaining why the volume requirement of 12,200 gallons is a lower value than that shown in TS Figure 3.1-1.

For the boration requirements below 200°F, it is proposed to increase the minimum volume requirement for the BAAS from 700 gallons to 900 gallons, and to increase the minimum BWST boron concentration from 2100 ppm to 2600 ppm.

TS 3/4.5.1, Emergency Core Cooling Systems (ECCS) - Core Flooding Tanks:

The CFTs minimum boron concentration is proposed to be increased from 2100 ppm to 2600 ppm for consistency with the BWST minimum boron concentration. This minimum boron concentration is used in the analysis for post-Loss of Coolant Accident (LOCA) Shutdown Margin (SDM) analysis.

An administrative change to the CFT boron concentration requirement of "Between 2100 and 3500 ppm" to "$\geq$ 2600 and $\leq$ 3500 ppm", using the proposed revised value, is also proposed.

TS 3/4.5.2, ECCS - ECCS Subsystems - Tavg $\geq$ 280°F, and the associated Bases 3/4.5.2 and 3/4.5.3, ECCS Subsystems:

Surveillance Requirement (SR) 4.5.2.d.4, which presently requires verification of a minimum TSP volume of 72 cubic feet, is proposed to be changed to require verification of a minimum volume of 290 cubic feet.

SR 4.5.2.d.5, which presently requires verification of TSP density, is proposed to be deleted.

SR 4.5.2.d.6, which presently requires verification of TSP solubility, is proposed to be deleted.

These SR changes are similar to those recently approved by the Nuclear Regulatory Commission in Amendment 115 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3 (TAC No. M91462), dated May 26, 1995.

Regarding SR 4.5.2.d.4, the required minimum amount of TSP is proposed to be increased from 72 ft^3 to 290 ft^3, in order to ensure the capability to buffer the post-LOCA sump mixture to a minimum pH of 7, assuming the maximum volume and maximum boron concentrations for the BWST, CFTs, and the Reactor Coolant System (RCS). In order to accommodate the additional required volume of TSP, new TSP baskets will be installed on the 565' elevation of containment during the upcoming Tenth Refueling Outage (10RFO). The new TSP baskets will have at least a 250 ft^3 capacity. The present baskets, which have a capacity of 75 ft^3, will be retained. This provides a total capacity of 325 ft^3.

Surveillance Requirement 4.5.2.d.5 is proposed for deletion since it does not serve a meaningful purpose. The required amount of TSP is based on the mass of TSP required to achieve the desired pH. The required minimum volume verified by SR 4.5.2.d.4 is based on the manufactured density of TSP (53 lb/ft^3), and includes a 15% margin above the analytical requirement of 250 ft^3. Since TSP can have a tendency to agglomerate from high humidity in the containment, the density may increase and the volume decrease during normal plant operation however the required mass of TSP would remain available.

Therefore, verifying the minimum volume of TSP in containment is conservative with respect to achieving a minimum required pH, and density verification is not required.

Surveillance Requirement 4.5.2.d.6 is proposed for deletion since it does not serve a meaningful purpose. TSP is chemically stable and its neutralization capabilities will not change. Based on operating experience, TSP remains sufficiently soluble even if it is caked or hardened.

Deletion of Surveillance Requirements 4.5.2.d.5 and 4.5.2.d.6 will remove the need to perform the associated surveillance tests. This will reduce the radiation dose incurred in collecting and analyzing the samples needed to perform the tests, and will eliminate a source of radwaste.

In accordance with these changes, the Bases discussion of the Surveillance Requirements associated with TSP is proposed to be changed to read:

> The Surveillance Requirement (SR) associated with TSP ensures that the minimum required volume of TSP is stored in the baskets. The minimum required volume of TSP is the volume that will achieve a post-LOCA borated water mixture pH of $\geq$ 7.0, conservatively considering the maximum possible sump water volume and the maximum possible boron concentration. The amount of TSP required is based on the mass of TSP needed to achieve the required pH. However, a required volume is verified by the SR, rather than the mass, since it is not feasible to weigh the entire amount of TSP in containment. The minimum required volume is based on the manufactured density of TSP (53 lb/ft^3). Since TSP can have a tendency to agglomerate from high humidity in the containment, the density may increase and the volume decrease during normal plant operation, however, solubility characteristics are not expected to change. Therefore, considering possible agglomeration and increase in density, verifying the minimum volume of TSP in containment is conservative with respect to ensuring the capability to achieve the minimum required pH. The minimum required volume of TSP to meet all analytical requirements is 250 ft^3. The surveillance requirement of 290 ft^3 includes 40 ft^3 of spare TSP as margin. Total basket capacity is 325 ft^3.

In addition, the Bases description of the location of the TSP baskets is proposed to be changed from "baskets in the containment normal sump" to "baskets located in the containment normal sump or on the 565' elevation of containment adjacent to the normal sump." This wording will properly describe the location of the present TSP baskets as well as the new baskets which are being added.

The Bases description is also proposed to be changed to state that the post-LOCA containment sump mixture pH adjustment will be

accomplished during recirculation as documented in original design calculations.

TS 3/4.5.4, ECCS - Borated Water Storage Tank:

The minimum and maximum boron concentrations are proposed to be changed from 2100 ppm and 2200 ppm to 2600 ppm and 2800 ppm, respectively. The minimum boron concentration is based on the required concentration to ensure a 1% Δk/k Shutdown Margin (SDM) post-LOCA. The maximum boron concentration was determined based on post-LOCA boron precipitation analysis assumptions presented in Reference 2.

An administrative change to the BWST boron concentration requirement of "Between 2100 and 2200 ppm" to "≥ 2600 and ≤ 2800 ppm", using the proposed revised values, is also proposed.

TS 3/4.9.1, Refueling Operations - Boron Concentration, and associated Bases 3/4.9.1, Boron Concentration:

It is proposed to delete LCO 3.9.1.b regarding the minimum refueling boron concentration requirement of 1800 ppm, and to make associated changes to the Action statement and the Bases.

It is also proposed to change the Action statement boration requirement from " ≥ 10 gpm of 8750 ppm " to " ≥ 12 gpm of 7875 ppm", and to add a paragraph to the Bases explaining the reason the boration flow rate requirement differs from that specified in TS 3/4.1.1.1, Reactivity Control - Shutdown Margin.

These changes are to eliminate an LCO which is no longer meaningful, and to make the boration rate consistent with the minimum BAAS boron concentration requirement of TS 3/4.1.2.8 and TS 3/4.1.2.9.

SYSTEMS, COMPONENTS, AND ACTIVITIES AFFECTED:

The systems and components affected are the BAAS, the BWST, the CFTs, the TSP baskets, and the Environmental Qualification (EQ) and Seismic design of Structures, Systems, and Components (SSCs) inside CTMT. Surveillance testing requirements for TSP and refueling boron concentration requirements are also affected.

FUNCTIONS OF THE AFFECTED SYSTEMS, COMPONENTS, AND ACTIVITIES

Boric Acid Addition System (BAAS)

The BAAS provides sufficient concentrated boric acid solution to increase the RCS boron concentration from Hot Full Power (HFP) boron concentration to the Cold Shutdown (CSD) boron concentration at any time during the operating cycle.

The HFP boron concentration is the concentration which maintains the reactor critical at 100% Rated Thermal Power (RTP) with an RCS average temperature of 582°F at equilibrium xenon conditions. The CSD boron concentration is the concentration required to maintain the reactor with a 1% Δk/k SDM, xenon free, at 70°F, with the most reactive control rod stuck out.

Borated Water Storage Tank (BWST)

The BWST provides an alternate boration capability to the BAAS. The safety function of the BWST is to provide a sufficient supply of borated water to the ECCS in order to ensure adequate inventory for containment sump recirculation and to maintain the reactor with a 1% Δk/k SDM in the event of a LOCA.

Core Flooding Tanks (CFTs)

The CFTs provide the immediate reflood of the reactor following a design basis Large Break LOCA (LBLOCA) to ensure that the fuel cladding peak temperature will remain below the 10 CFR 50.46 criteria of 2200°F prior to the refill of the reactor by the ECCS High Pressure Injection/Low Pressure Injection (HPI/LPI) systems.

Trisodium Phosphate Baskets and Surveillance Testing Requirements

The safety function of the TSP contained in baskets in CTMT is to neutralize the acidity of the post-LOCA borated water mixture during CTMT emergency sump recirculation. The BWST water has a nominal pH of approximately 5. Raising the borated water mixture to a pH value of 7 will ensure that chloride stress corrosion does not occur in austenitic stainless steels in the event that chloride levels increase as a result of contamination on surfaces inside CTMT. Also, a pH of 7 is assumed for the CTMT emergency sump for iodine retention and removal post-LOCA by the CTMT Spray system. The surveillance testing ensures that there is adequate TSP to perform the required pH adjustment.

Environmental Qualification of Structures, Systems, and Components inside Containment

Implementation of the Environmental Qualification (EQ) program ensures:

1) That safety related electrical equipment will perform as intended during and following design basis events to ensure:

   a) The integrity of the RCS boundary,

   b) The capability to shut down the reactor and maintain it in a safe shutdown condition, and

   c) The capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to 10 CFR 100 guidelines

2) Non-safety related electrical equipment, whose failure under postulated environmental conditions could prevent satisfactory accomplishment of the specified safety-related electrical equipment required safety functions or could mislead an operator, is qualified as required.

3) Post accident monitoring equipment, identified from the review of emergency procedures and those required by NRC Regulatory Guide 1.97, is qualified as required.

The EQ of Structures, Systems, and Components (SSCs) ensures that the SSCs will function as designed during design basis accidents for the given conditions of those accidents. The condition of particular concern for this evaluation is the acidity of containment (CTMT) spray from the BWST during a Large Break LOCA.

Seismic Qualification of Class I Systems

Class I SSCs, for seismic design purposes, are defined as those SSCs important to safety that are designed to remain functional in the event of a Maximum Possible Earthquake. These SSCs are those necessary to ensure:

a) The integrity of the RCS boundary,

b) The capability to shut down the reactor and maintain it in a safe shutdown condition, and

c) The capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to 10 CFR 100 guidelines

Since more TSP basket volume will need to be installed, the seismic requirements will need to be addressed to ensure that the new baskets will not affect any equipment credited during accident conditions.

Refueling Boron Concentration

The limitations on reactivity conditions during Refueling ensure that the reactor will remain subcritical during Core Alterations, and that a uniform boron concentration is maintained for reactivity control in the water having direct access to the reactor vessel.

These limitations are consistent with the initial conditions assumed for the boron dilution accident in the accident analysis.

EFFECTS ON SAFETY:

The proposed changes to TS 3/4.1.2.8 to increase the required BAAS minimum volume and to increase the BWST minimum boron concentration will

ensure that adequate boration capability is maintained for future core designs. These changes are conservative and would have no adverse effect on plant safety.

The proposed change to TS 3/4.1.2.9 to increase the minimum boron concentration of the BWST will have no adverse affect on safety, as previously discussed for the same change to TS 3/4.1.2.8.

The proposed change to TS 3/4.1.2.9 for the BWST maximum boron concentration will allow a reasonable operating band above the lower limit, and is set at the conservatively determined upper limit for boron precipitation control following a LOCA, as used in Reference 2. The change to the BWST maximum boron concentration is within previously analyzed limits and will have no adverse effect on plant safety because the associated change to the TSP minimum volume requirement will ensure that the assumed post-LOCA minimum pH of 7 will be maintained during the sump recirculation phase. In addition, the Environmental Qualification of equipment inside CTMT was reviewed to verify that the proposed change to the BWST maximum boron concentration would not adversely affect electrical components credited during accident conditions. Therefore, raising the BWST maximum boron concentration would have no adverse effect on plant safety.

The revision to Figure 3.1-1, which is referenced by TS 3/4.1.2.9, ensures that there is adequate boration capability available from the BAAS. At the minimum boron concentration of 7875 ppm, the two Boric Acid Addition Tanks (BAATs), when filled to their high level alarm, have approximately 260 gallons in excess of the required volume. Therefore, this revision to Figure 3.1-1 is acceptable because the required minimum volume for all concentrations is achievable with existing plant systems, is conservative, and will have no adverse effect on plant safety.

The proposed changes to Bases 3/4.1.2 are associated with the proposed changes to TS 3/4.1.2.8 and TS 3/4.1.2.9, and reflect changes to the BAAS and BWST minimum volumes and the BWST minimum boron concentration requirements. The Bases' minimum value for the BAAS of 12,200 gallons at a concentration of 7875 ppm boron is a lower value than that shown in TS Figure 3.1-1 because the Bases value is the minimum required actual value, whereas TS Figure 3.1-1 shows the minimum indicated value, which was conservatively increased to account for instrument and chemical analysis tolerances. A statement to this effect is proposed for addition to Bases 3/4.1.2. The Bases for the BWST minimum volume requirement of 86,700 gallons for boration capability is provided for information only. The BWST water inventory requirement for post-LOCA recirculation of 482,778 gallons is the limiting volume requirement. These Bases changes are administrative and will have no adverse effect on plant safety.

The proposed change to TS 3/4.5.1, which increases the CFTs' minimum boron concentration requirement, ensures that the CFTs' minimum boron concentration is the same as the proposed BWST minimum boron concentration, as assumed in the reload analysis for the post-LOCA borated water mixture SDM calculations. This proposed change is conservative and would have no adverse effect on plant safety.

The proposed change to TS 3/4.5.4, which increases the BWST minimum and maximum boron concentrations, will have no effect on plant safety, as previously discussed for the same changes to TS 3/4.1.2.8 and 3/4.1.2.9.

The administrative changes to the boron concentration limits in TS 3/4.1.2.8, TS 3/4.1.2.9, TS 3/4.5.1, and TS 3/4.5.4 are proposed to clarify that the values for the minimum and maximum limits are acceptable concentrations. The present wording could be construed to exclude the limit values as acceptable concentrations. These changes are acceptable and have no adverse effect on plant safety because the limit values are acceptable boron concentrations.

The proposed changes to Surveillance Requirements 4.5.2.d.4, 4.5.2.d.5, and 4.5.2.d.6 are similar to those recently approved by the Nuclear Regulatory Commission in Amendment No. 115 for the Millstone Nuclear Power Station, Unit No 3. As discussed above, with removal of the surveillance tests associated with SRs 4.5.2.d.5 and 4.5.2.d.6, performance of the surveillance test associated with SR 4.5.2.d.4 will continue to ensure the capability of the TSP to neutralize the acidity of the post-LOCA borated water mixture, therefore these proposed changes will have no effect on plant safety.

The proposed change to SR 4.5.2.d.4 increases the required minimum TSP in CTMT from 72 ft^3 to 290 ft^3 in order to neutralize the proposed increase in the BWST maximum boron concentration from 2200 ppm to 2800 ppm. The increased TSP value requirement was determined assuming maximum volumes and maximum boron concentrations for the BWST, CFTs, and the RCS. The 290 ft^3 requirement includes a margin of approximately 40 ft^3. The increase in TSP will ensure that a minimum pH of at least 7 will be achieved post-LOCA during the recirculation of the CTMT emergency sump. Also, for minimum volumes and minimum boron concentrations, the increase in TSP will not yield a pH of greater than 11, as stated in the Davis-Besse Nuclear Power Station Updated Safety Analysis Report (USAR). Calculations and experimental data for maximum TSP (original and new baskets' total volume) and minimum volumes and minimum boron concentrations yield pH values of approximately 8 or less. The USAR also states that the post-LOCA pH of approximately 7 will be obtained within four (4) hours. Calculations and experimental results also confirm that the increase in TSP still satisfies this requirement. Therefore, increasing the minimum amount of TSP does not adversely affect plant safety. The proposed changes to the associated Bases are also consistent with this discussion and results. These Bases changes are administrative and will have no adverse effect on plant safety.

The minimum ECCS volume required for CTMT emergency sump recirculation is 360,000 gallons (Reference 10). At this minimum volume the level of water in containment will be approximately three feet two inches above the 565' elevation (Reference 11). This conservative level approximation assumes worst case instrument tolerances and minimum water inventory for the BWST, and no credit is taken for the RCS and CFTs inventories. The new TSP baskets will be designed and located to permit the contents of the baskets to be dissolved into the inventory in the sump as water level

increases post-LOCA. Reference 5 shows that the top of the new baskets will be approximately three feet one inch above the 565' elevation. This ensures full basket submersion even for the most limiting ECCS minimum volume. The new TSP baskets will also be appropriately restrained so as to ensure proper seismic qualification, so that there will be no adverse effects on other SSCs important to safety. Therefore, installation of the new TSP baskets will ensure proper post-LOCA pH and will not adversely affect plant safety.

The approximately 40 ft^3 of margin included in the minimum TSP volume requirement provides additional assurance that adequate TSP is available to ensure that the post-LOCA sump mixture will attain a pH value of at least 7. As discussed above, it has been confirmed that it would not raise the post-LOCA sump mixture higher than a pH of 11. Therefore, providing the additional margin does not adversely affect plant safety.

The proposed changes to TS 3/4.9.1 to delete the minimum boron concentration requirement of LCO 3.9.1.b, and to modify the Action statement and the Bases accordingly, is acceptable. The minimum refueling boron concentration requirement of 1800 ppm was applicable for cycle lengths of approximately 12 months, and maintained keff $\leq$ 0.95 as assumed in the accident analysis. However, as cycle length has increased, the 1800 ppm requirement is no longer limiting, and therefore is no longer meaningful. The LCO 3.9.1.a requirement to maintain keff $\leq$ 0.95 is alone sufficient to ensure that the accident analysis assumptions are satisfied. Therefore, removal of LCO 3.9.1.b and related changes to the Action statement and the Bases do not adversely affect plant safety.

Changing the TS 3/4.9.1 Action statement boration requirement from " $\geq$ 10 gpm of 8750 ppm " of boric acid solution, to " $\geq$ 12 gpm of 7875 ppm " of boric acid solution maintains an equivalent boration rate while providing consistency with the TS 3/4.1.2.8 and 3/4.1.2.9 LCO and Bases with respect to the minimum BAAS boron concentration. The addition of an explanation to the Bases discussing the reason the boration flow rate requirement differs from the boration flow rate requirement of "$\geq$ 25 gpm of 7875 ppm boron" specified in TS 3/4.1.1.1 is an administrative change. Therefore, these changes do not adversely affect plant safety.

The existing minimum boration rates associated with TS 3/4.1.1.1, Reactivity Control Systems - Boration Control - Shutdown Margin, TS 3/4.9.1, Refueling Operations - Boron Concentration, and TS 3/4.10.4, Special Test Exceptions - Shutdown Margin, were reviewed and verified to remain bounding for the proposed changes.

SIGNIFICANT HAZARDS CONSIDERATION:

The Nuclear Regulatory Commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazard exists due to a proposed amendment to an Operating License for a facility. A proposed amendment involves no significant hazards if operation of the facility in accordance with the proposed changes would: (1) Not involve a significant

increase in the probability or consequence of an accident previously evaluated; (2) Not create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) Not involve a significant reduction in a margin of safety. Toledo Edison has reviewed the proposed changes and determined that a significant hazards consideration does not exist because operation of the Davis-Besse Nuclear Power Station, Unit No. 1, in accordance with these changes would:

1a. Not involve a significant increase in the probability of an accident previously evaluated because no accident initiators, conditions, or assumptions are significantly affected by the proposed changes.

The proposed changes to the Technical Specifications and their Bases increase the minimum volume of the Boric Acid Addition System (BAAS), the minimum boron concentration of the Borated Water Storage Tank (BWST) and Core Flooding Tanks (CFTs), the maximum boron concentration of the BWST, and the minimum volume of trisodium phosphate dodecahydrate (TSP) in Containment (CTMT). Administrative changes to these Technical Specifications have also been proposed. These changes ensure adequate boration capability is maintained for normal operations, that adequate Shutdown Margin (SDM) can be achieved following an accident, and that the assumed post-Loss of Coolant Accident (LOCA) pH can be achieved. Therefore, as stated above, these proposed changes do not significantly affect accident initiators, conditions, or assumptions.

1b. Not involve a significant increase in the consequences of an accident previously evaluated because the proposed changes do not change the source term, CTMT isolation, or allowable releases.

In particular, maintaining the appropriate amount of TSP will ensure the assumed pH will be achieved, the assumption of source term with respect to iodine retention will be maintained, and the radiological consequences of a previously evaluated accident will not be increased.

2. Not create the possibility of a new or different kind of accident from any accident previously evaluated because no new accident initiators or assumptions are introduced by the proposed changes.

These changes ensure that the assumptions used for initial and final conditions of SDM, pH, and source term are maintained. Also, the Environmental Qualification (EQ) and seismic requirements have been verified to be adequate to maintain the adequacy of Structures, Systems, and Components (SSCs) during assumed accident conditions.

3. Not involve a significant reduction in a margin of safety because the proposed changes to the minimum volume and boron concentration for the BAAS, BWST, and CFTs ensure that the margin of safety for reactor subcriticality is maintained at all times for future longer fuel cycles, including the upcoming Cycle 11.

The proposed increase in the BWST maximum boron concentration is set at the conservative limit for post-LOCA boron precipitation concerns. Therefore, the existing margin of safety with respect to post-LOCA boron precipitation is maintained.

The proposed increase in the minimum TSP volume requirement maintains the same margin of safety with respect to post-LOCA pH, time for dissolution, iodine retention, and chloride stress corrosion of austenitic stainless steels. The TSP capacity margin of approximately 40 ft^3 included in the minimum TSP volume requirement will not result in increasing the pH above the previously approved pH limit of 11. This reserve capacity adds margin to ensure adequate minimum pH is achieved.

The proposed removal of the 1800 ppm refueling boron concentration requirement does not reduce the margin of safety because the requirement of maintaining keff $\leq$ 0.95 is alone sufficient to ensure that the accident analysis assumptions are satisfied.

The proposed change to the boration rate requirement of the LCO 3.9.1 Action statement does not reduce the margin of safety because the proposed boration rate of 12 gpm of 7875 ppm boric acid solution is equivalent to the present boration rate of 10 gpm of 8750 ppm boric acid solution.

CONCLUSION:

On the basis of the above, Toledo Edison has determined that the License Amendment Request does not involve a significant hazards consideration. As this License Amendment Request concerns a proposed change to the Technical Specifications that must be reviewed by the Nuclear Regulatory Commission, this License Amendment Request does not constitute an unreviewed safety question.

ATTACHMENT: Attached are the proposed marked-up changes to the Operating License

REFERENCES:

1. Babcock and Wilcox Nuclear Technologies (BWNT) Document 51-117224-00, Backup Bases Document-Shutdown Margin Modes 3,4,5.

2. Babcock and Wilcox (B&W) Document 51-1206351, Long Term Boron Dilution Following a Large LOCA.

3. Calculation C-NRA-049.01-001, CTMT Sump pH for BWST at 2800 ppmB.

4. Calculation C-NRE-040.01-003, Cycle 11 Minimum Boric Acid Volume Requirements.

5. Calculation C-NRE-049.01-002, Post LOCA CTMT Sump Maximum pH.

6. Evaluation RFA 94-0524, EQ Determination of CTMT Electrical Components.

7. DBNPS Operating License NPF-3, Appendix A Technical Specifications through Amendment 199.

8. DBNPS Updated Safety Analysis Report through Revision 19.

9. Millstone Nuclear Power Station, Unit No. 3, Facility Operating License NPF-49, Amendment No. 115, dated May 26, 1995 (TAC No. M91462).

10. Safety Evaluation for FCR 80-278 Rev. A, "Modification of the Auto Transfer of the ECCS Suction Source from the BWST to the Emergency Sump from Auto to Manual."

11. Bechtel Letter BT-16658 (A218), "Containment Flood Level Elevations and Total Free Areas and Volume"

12. Calculation C-NRE-040.01-004, Hot and Cold Shutdown RCS Boron and BWST Requirements.