UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 2, 2008

Mr. Barry S. Allen
Site Vice President
FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station
Mail Stop A-DB-3080
5501 North State Route 2
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1 – DRAFT SAFETY EVALUATION FOR THE CONVERSION TO THE IMPROVED TECHNICAL SPECIFICATIONS WITH BEYOND SCOPE ISSUES (TAC NOS. MD6319-MD6322, MD6324-MD6333, MD6398-MD6403, MD6644-MD6649, AND MD6684)

Dear Mr. Allen:

Enclosed are a draft amendment with license conditions and an implementation date for Davis-Besse Nuclear Power Station, Unit No. 1 (DBNPS) and a draft Safety Evaluation (SE), including tables describing the changes from current Technical Specifications to improved Technical Specifications (ITSs) for DBNPS. The enclosed documents are based on (1) your application dated August 3, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072200448), as supplemented by letters dated May 16, 2008 (2 letters) (ADAMS Accession Nos. ML081480464 and ML081430105), July 23, 2008 (ADAMS Accession No. ML082070079), August 7, 2008 (ADAMS Accession No. ML082270658), August 26, 2008 (ADAMS Accession No. ML082600594), and September 3, 2008 (ADAMS Accession No. ML082490154).

The information provided to the Nuclear Regulatory Commission (NRC) staff through the joint NRC-FirstEnergy Nuclear Operating Company ITS) conversion web page hosted by Excel Services Corporation can be found in these supplements. To expedite review of the application, the NRC staff agreed to place its requests for additional information (RAIs) on the web page. Your staff agreed to then provide responses to the RAIs on the publicly available web page at www.excelservices.com. To document the information contained on the web page, the licensee submitted a copy of the complete database to the NRC in its supplements.

The enclosed draft amendment and draft SE are being provided for your review due to the large size and scope of the NRC staff's review. The issuance of these drafts permits you an early opportunity to start your review. Please review the enclosed draft amendment and SE for technical accuracy and provide your comments 2 weeks from the date of the letter.

If you have any questions concerning this letter and the draft SE, contact me at 301-415-3719 or email Cameron.goodwin@nrc.gov.

Sincerely,

Cameron S. Goodwin, Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-346

Enclosures:
1. Amendment No.   to NPF-3
2. Safety Evaluation

cc w/encls: Distribution via listserv

FIRSTENERGY NUCLEAR OPERATING COMPANY

AND

FIRSTENERGY NUCLEAR GENERATION CORP.

DOCKET NO. 50-346

DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.
License No. NPF-3

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by FirstEnergy Nuclear Operating Company et al. (the licensee), dated August 3, 2007, as supplemented by letters dated May 16, 2008 (2 letters), July 23, 2008, August 7, 2008, August 26, 2008, and September 3, 2008, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-3 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. , are hereby incorporated in the license. FENOC shall operate the facility in accordance with the Technical Specifications.

3. This amendment authorizes the relocation of certain Technical Specification requirements and operating license conditions to other licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the other documents, as described in (1) Sections D and E of the NRC staff's Safety Evaluation, and (2) Table LA of Removed Details and Table R of Relocated Specifications attached to the NRC staff's Safety Evaluation, which is enclosed with this amendment.

4. License condition, 2.C.(5), is deleted.

5. A new license condition is added to Appendix C to address performance of new and revised Surveillance Requirements (SRs):

For SRs that are new in this amendment, the first performance is due at the end of the first surveillance interval, which begins on the date of implementation of this amendment.

For SRs that existed prior to this amendment whose intervals of performance are being reduced the first reduced surveillance interval begins upon completion of the first surveillance performed after implementation of this amendment.

For SRs that existed prior to this amendment that have modified acceptance criteria, the first performance is due at the end of the surveillance interval that began on the date the surveillance was last performed prior to the implementation of this amendment.

For SRs that existed prior to this amendment whose intervals of performance are being extended the first extended surveillance interval begins upon completion of the last surveillance performed prior to the implementation of this amendment.

6. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Russell Gibbs, Chief
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications and Facility Operating License

Date of Issuance:

ATTACHMENT TO LICENSE AMENDMENT NO. ___

FACILITY OPERATING LICENSE NO. NPF-3

DOCKET NO. 50-346

Replace the following pages of the Facility Operating License and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
License NPF-3	License NPF-3
Page 4	Page 4
Page 6	Page 6
	Page 6b
TSs	TSs
All pages	All pages

2.C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

FENOC is authorized to operate the facility at steady state reactor core power levels not in excess of 2817 megawatts (thermal). Prior to attaining the power level, Toledo Edison Company shall comply with the conditions identified in Paragraph (3) (o) below and complete the preoperational tests, startup tests and other items identified in Attachment 2 to this license in the sequence specified. Attachment 2 is an integral part of this license.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. , are hereby incorporated in the license. FENOC shall operate the facility in accordance with the Technical Specifications.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following the issuance of the license or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the license supported by a favorable evaluation by the Commission:

(a) FENOC shall not operate the reactor in operational Modes 1 and 2 with less than three reactor coolant pumps in operation.

(b) Deleted per Amendment 6

(c) Deleted per Amendment 5

2.C(4) <u>Fire Protection</u>

FENOC shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the Updated Safety Analysis Report and as approved in the SERs dated July 26, 1979, and May 30, 1991, subject to the following provision:

FENOC may make changes to the approved Fire Protection Program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

(5) Deleted per Amendment

(6) <u>Antitrust Conditions</u>

FENOC and FirstEnergy Nuclear Generation Corp. shall comply with the antitrust conditions delineated in Condition 2.E of this license as if named therein. FENOC shall not market or broker power or energy from the Davis-Besse Nuclear Power Station, Unit No. 1. FirstEnergy Nuclear Generation Corp. is responsible and accountable for the actions of FENOC to the extent that said actions affect the marketing or brokering of power or energy from the Davis-Besse Nuclear Power Station, Unit No. 1, and in any way, contravene the antitrust license conditions contained in the license.

2.C(9) Implementation of New and Revised Surveillance Requirements

For SRs that are new in Amendment No. , the first performance is due at the end of the first surveillance interval, which begins on the date of implementation of this amendment.

For SRs that existed prior to Amendment No. , whose intervals of performance are being reduced the first reduced surveillance interval begins upon completion of the first surveillance performed after implementation of this amendment.

For SRs that existed prior to Amendment No. , that have modified acceptance criteria, the first performance is due at the end of the surveillance interval that began on the date the surveillance was last performed prior to the implementation of this amendment.

For SRs that existed prior to Amendment No. , whose intervals of performance are being extended the first extended surveillance interval begins upon completion of the last surveillance performed prior to the implementation of this amendment.

(10) Removed Details and Requirements Relocated to Other Controlled Documents

License Amendment No. authorizes the relocation of certain technical specifications and operating license conditions, if applicable, to other licensee-controlled documents. Implementation of this amendment shall include relocation of these requirements to the specified documents.

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. TO FACILITY OPERATING LICENSE NO. NPF-3

FIRSTENERGY NUCLEAR OPERATING COMPANY

FIRSTENERGY NUCLEAR GENERATION CORP.

DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1

DOCKET NO. 50-346

1.0 INTRODUCTION

By letter to the Nuclear Regulatory Commission (NRC, the Commission) dated August 3, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072200451) as supplemented by the letters discussed below, FirstEnergy Nuclear Operating Company, et al. (the licensee) requested changes to the technical specifications (TSs) for the Davis-Besse Nuclear Power Station, Unit No. 1 (DBNPS). The proposed changes would revise the current TSs (CTS) to the improved TSs (ITS).

The seven supplemental letters to the application provided the following information for the proposed ITS conversion:

- Letter from Barry S. Allen, Vice President, DBNPS, to the NRC Document Control Desk, dated May 16, 2008 (ADAMS Accession No. ML081480464), which supplements the licensee's application and provides revisions to the TS for Sections 3.0, 3.1, 3.2, 3.4, 3.6, and 4.0. The revisions to the TS for individual Sections 3.0, 3.1, 3.2, 3.4, 3.6, and 4.0 can be found in ADAMS as follows: Section 3.0 (ADAMS Accession No. ML081480465), Section 3.1 (ADAMS Accession No. ML081480466), Section 3.2 (ADAMS Accession No. ML081480467), Section 3.4 (ADAMS Accession No. ML081480468), Section 3.6 (ADAMS Accession No. ML081480469), and Section 4.0 (ADAMS Accession No. ML081480471).

- Letter from Barry S. Allen, Vice President, DBNPS, to the NRC Document Control Desk, dated May 16, 2008 (ADAMS Accession No. ML081430105), which provides a copy of the licensee's responses to NRC questions, on TS proposals for Sections 3.0, 3.1, 3.2, 3.4, 3.6, and 4.0, that took place via the NRC-DBNPS ITS Conversion web page discussed below.

- Letter from Barry S. Allen, Vice President, DBNPS, to the NRC Document Control Desk, dated July 23, 2008 (ADAMS Accession No. ML082070079), which provides responses to a Request for Additional Information (RAI) Letter from the NRC, dated June 20, 2008 (ADAMS Accession No. ML081650364).

Enclosure

- Letter from Barry S. Allen, Vice President, DBNPS, to the NRC Document Control Desk, dated August 7, 2008 (ADAMS Accession No. ML082270658), which supplements the licensee's application and provides revisions to the TS for Sections 1.0, 2.0, 3.3, 3.5, 3.7, 3.8, 3.9, 5.0, as well as revisions to the No Significant Hazards Consideration (NSHC) and the Split Report Summary. The revisions to the TS for individual Sections 1.0, 2.0, 3.3, 3.5, 3.7, 3.8, 3.9, 5.0, as well as revisions to the NSHC and the Split Report Summary, can be found in ADAMS as follows: Section 1.0 (ADAMS Accession No. ML082270663), Section 2.0 (ADAMS Accession No. ML082270664), Section 3.3 (ADAMS Accession No. ML082270665), Section 3.5 (ADAMS Accession No. ML082270666), Section 3.7 (ADAMS Accession No. ML082270669), Section 3.8 (ADAMS Accession No. ML082270670), Section 3.9 (ADAMS Accession No. ML082270671), Section 5.0 (ADAMS Accession No. ML082270667), NSHC (ADAMS Accession No. ML082270662), and Split Report Summary (ADAMS Accession No. ML082270661).

- Letter from Barry S. Allen, Vice President, DBNPS, to the NRC Document Control Desk, dated September 3, 2008 (ADAMS Accession No. ML082490154), which provides responses to a RAI letter from the NRC, dated June 18, 2008 (ADAMS Accession No. ML081570588).

- Letter from Barry S. Allen, Vice President, DBNPS, to the NRC Document Control Desk, dated August 26, 2008 (ADAMS Accession No. ML082600594), which provides a copy of the licensee's responses to NRC questions, on TS proposals for Sections 1.0, 2.0, 3.3, 3.5, 3.7, 3.8, 3.9, 5.0, that took place via the NRC-DBNPS ITS Conversion web page discussed below.

- Letter from Barry S. Allen, Vice President, DBNPS, to the NRC Document Control Desk, dated [ ] (ADAMS Accession No. [ ]), which provide the retyped copy of TS pages to be issued in this amendment.

The following Safety Evaluation (SE) on the proposed ITS conversion is based on the application dated August 3, 2007, and the information provided to the NRC through the DBNPS ITS Conversion web page hosted by Excel Services Corporation and supplements provided, as discussed above. To expedite its review of the application, the NRC staff issued its RAIs through the DBNPS ITS Conversion web page and the licensee addressed the RAIs by providing responses on the web page. Entry into the database is protected so that only licensee and NRC reviewers can enter information into the database to add RAIs (NRC) or providing responses to the RAIs (licensee); however, the public can enter the database to only read the questions asked and the responses provided. To be in compliance with the regulations for written communications for license amendment requests and to have the database on the DBNPS docket before the amendment would be issued, the licensee will submit a copy of the database in a submittal to the NRC after there are no further RAIs and before amendments would be issued. The public can access the website by going to www.excelservices.com. Once at the website, click on Davis Besse on the left side of the screen. Upon clicking the link the website will inform you that you are about to enter the DAVIS BESSE Improved Technical Specification Licensing On-Line Question and Answer Database. At this point, click on Click Here to continue. This will bring you to the ITS Licensing Database. The RAIs and responses to RAIs are organized by ITS Sections 1.0, 2.0, 3.0, 3.1 through 3.9, 4.0, and 5.0.

The additional information provided in the seven supplemental letters, did not expand the scope of the application as noticed, and did not change the NRC staff's initial proposed finding of NSHC published in the *Federal Register* on May 22, 2008 (73 FR 29787 - 29791).

2.0 BACKGROUND

DBNPS has been operating with the TSs issued with the original Facility Operating License dated April 22, 1977, as amended. The proposed conversion to the ITS is based upon:

- NUREG-1430, "Standard Technical Specifications (STS) Babcock and Wilcox Plants," Revision 3.0;
- DBNPS CTS;
- "Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors" (Final Policy Statement), published on July 22, 1993 (58 FR 39132); and
- 10 CFR 50.36, "Technical Specifications," as amended July 19, 1995 (60 FR 36953).

Hereinafter, the proposed TSs for DBNPS are referred to as the ITS, the existing TSs are referred to as the CTS, and the improved standard TSs, given in NUREG-1430, are referred to as the Improved Standard Technical Specifications (ISTS). The corresponding Bases are ITS Bases, CTS Bases, and ISTS Bases, respectively. For convenience, a list of acronyms used in this SE is provided in Attachment 1 to this SE.

In addition to basing the ITS on the ISTS, the Final Policy Statement, and the requirements in 10 CFR 50.36, the licensee retained portions of the CTS as a basis for the ITS. During the course of its review, the NRC staff utilized DBNPS ITS conversion database, issued several RAIs, and conducted a series of telephone conference calls with the licensee. The conversion database, RAIs, and conference calls served to clarify the ITS with respect to the guidance in the Final Policy Statement and the ISTS. The NRC staff requested that the licensee docket the DBNPS ITS conversion database in a sworn statement with regards to its accuracy, as well as docket all RAIs and responses under oath and affirmation, in a supplement to the license amendment. The licensee also proposed changes of a generic nature that were not in the ISTS. The NRC staff requested that the licensee submit such generic changes as proposed changes to the ISTS through the industry Technical Specifications Task Force (TSTF). These generic issues were considered for specific applications in the DBNPS ITS. Consistent with the Commission's Final Policy Statement and 10 CFR 50.36, the licensee proposed transferring some CTS requirements to licensee-controlled documents (such as the DBNPS Updated Final Safety Analysis Report (UFSAR)), for which changes to the documents by the licensee are controlled by a regulation (e.g.,10 CFR 50.59) and which may be made without prior NRC approval. NRC-controlled documents, such as the TSs, may not be changed by the licensee without prior NRC approval. In addition, human factors principles were emphasized to add clarity to the CTS requirements being retained in the ITS, and to define more clearly the appropriate scope of the ITS. Further, significant changes were proposed to the CTS Bases to make each ITS requirement clearer and easier to understand.

The overall objective of the proposed amendment, consistent with the Final Policy Statement, is to rewrite, reformat, and streamline the DBNPS CTS to provide clearer, more readily understandable requirements to ensure safer operation of the units, while still satisfying the requirements of 10 CFR 50.36. During its review, the NRC staff relied on the Final Policy Statement and 10 CFR 50.36, and the ISTS as guidance for acceptance of CTS changes. This SE provides a summary basis for the NRC staff's conclusion that use of the licensee's proposed ITS based on ISTS, as modified by plant-specific changes, is acceptable for continued operation of DBNPS. This SE also explains the NRC staff's conclusion that the ITS are consistent with the DBNPS current licensing basis and the requirements of 10 CFR 50.36.

This SE relies on the following license conditions to be included in the facility operating license: (1) the schedule for the first performance of new and revised surveillance requirements (SRs); and (2) the relocation of CTS requirements into licensee-controlled documents as part of the implementation of the ITS.

For the reasons stated *infra* in this SE, the NRC staff finds that the ITS issued with this license amendment complies with Section 182a of the Atomic Energy Act, 10 CFR 50.36, and the guidance in the Final Policy Statement, and that they are in accordance with the common defense and security and provide adequate protection of the health and safety of the public.

3.0 REGULATORY REQUIREMENTS

Section 182a of the Atomic Energy Act requires that applicants for nuclear power plant operating licenses will state:

> [S]uch technical specifications, including information of the amount, kind, and source of special nuclear material required, the place of the use, the specific characteristics of the facility, and such other information as the Commission may, by rule or regulation, deem necessary in order to enable it to find that the utilization . . . of special nuclear material will be in accord with the common defense and security and will provide adequate protection to the health and safety of the public. Such technical specifications shall be a part of any license issued.

In 10 CFR 50.36, the Commission established its regulatory requirements related to the content of TSs. In doing so, the Commission placed emphasis on those matters related to the prevention of accidents and the mitigation of accident consequences. As recorded in the Statements of Consideration, "Technical Specifications for Facility Licenses; Safety Analysis Reports" (33 FR 18610, December 17, 1968), the Commission noted that applicants were expected to incorporate into their TSs "those items that are directly related to maintaining the integrity of the physical barriers designed to contain radioactivity." Pursuant to 10 CFR 50.36, TSs are required to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) SRs; (4) design features; and (5) administrative controls. However, the rule does not specify the particular requirements to be included in a plant's TSs.

For several years, NRC and industry representatives have sought to develop guidelines for improving the content and quality of nuclear power plant TSs. On February 6, 1987, the Commission issued an interim policy statement on TS improvements, "Interim Policy Statement on Technical Specification Improvements for Nuclear Power Reactors" (52 FR 3788). During the period from 1989 to 1992, utility owners groups and the NRC staff developed ISTSs (e.g., NUREG-1430) that would establish model TSs based on the Commission's policy for each primary reactor type. In addition, the NRC staff, licensees, and owners groups developed generic administrative and editorial guidelines in the form of a "Writer's Guide" for preparing TSs, which gives appropriate consideration to human factors engineering principles and was used throughout the development of plant-specific ITS.

In September 1992, the Commission issued NUREG-1430, Revision 0, which was developed using the guidance and criteria contained in the Commission's Interim Policy Statement. The ISTSs in NUREG-1430 were established as a model for developing the ITSs for Babcock and Wilcox-type plants, in general. The ISTSs reflect the results of a detailed review of the application of the Interim Policy Statement criteria which have been incorporated in 10 CFR 50.36(c)(2)(ii), to generic system functions, which were published in a "Split Report" issued to the nuclear steam supply system vendor owners groups in May 1988. ISTSs also reflect the results of extensive discussions concerning various drafts of ISTSs so that the application of the TS criteria and the Writer's Guide would consistently reflect detailed system configurations and operating characteristics for all reactor designs. As such, the generic Bases presented in NUREG-1430 provide an abundance of information regarding the extent to which the ISTSs present requirements that are necessary to protect public health and safety. The ISTSs in NUREG-1430, Revision 3.0, as modified, apply to DBNPS.

On July 22, 1993, the Commission issued its Final Policy Statement, expressing the view that satisfying the guidance in the policy statement also satisfies Section 182a of the Atomic Energy Act and 10 CFR 50.36. The Final Policy Statement described the safety benefits of the ISTSs and encouraged licensees to use the ISTSs as the basis for plant-specific TS amendments and for complete conversions to ITSs based on the ISTSs. In addition, the Final Policy Statement gave guidance for evaluating the required scope of the TSs and defined the guidance criteria to be used in determining which of the LCOs and associated SRs should remain in the TSs. The Commission noted that, in allowing certain items to be relocated to licensee-controlled documents while requiring that other items be retained in the TSs, it was adopting the qualitative standard enunciated by the Atomic Safety and Licensing Appeal Board in *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 273 (1979). There, the Appeal Board observed:

> [T]here is neither a statutory nor a regulatory requirement that every operational detail set forth in an applicant's safety analysis report (or equivalent) be subject to a technical specification, to be included in the license as an absolute condition of operation which is legally binding upon the licensee unless and until changed with specific Commission approval. Rather, as best we can discern it, the contemplation of both the [Atomic Energy] Act and the regulations is that technical specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety.

By this approach, existing LCO requirements that fall within or satisfy any of the criteria in the Final Policy Statement should be retained in the TSs; those LCO requirements that do not fall within or satisfy these criteria may be relocated to licensee-controlled documents. The

Commission codified the four criteria in 10 CFR 50.36 (60 FR 36953, July 19, 1995). The four criteria are stated as follows:

Criterion 1 Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Criterion 2 A process variable, design feature, or operating restriction that is an initial condition of a design-basis accident [DBA] or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 3 A structure, system, or component [SSC] that is part of the primary success path and which functions or actuates to mitigate a [DBA] or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4 A structure, system, and component [SSC] which operating experience or probabilistic risk assessment [PRA] has shown to be significant to public health and safety.

Part 4.0 of this SE explains the NRC staff's determination that the conversion of the DBNPS CTSs to ITSs based on ISTSs, as modified by plant-specific changes, is consistent with the DBNPS, current licensing basis, the requirements and guidance of the Final Policy Statement, and 10 CFR 50.36.

4.0 EVALUATION

In its review of the DBNPS ITS application, the NRC staff evaluated five kinds of CTS changes as defined by the licensee. The NRC staff's review also included an evaluation of whether existing regulatory requirements are adequate for controlling future changes to requirements that are removed from the CTSs and placed in licensee-controlled documents. The following are the five types of CTS changes:

A Administrative - Changes to the CTSs that do not result in new requirements or change operational restrictions and flexibility.

M More Restrictive - Changes to the CTSs that result in added restrictions or reduced flexibility.

L Less Restrictive - Changes to the CTSs that result in reduced restrictions or added flexibility.

LA Removed Details - Changes to the CTSs that eliminate detail and relocate the detail to a licensee-controlled document. Typically, this involves details of system design and system description including design limits, description of system operation, procedural details for meeting TS requirements or reporting requirements, and cycle-specific parameter limits and TS requirements redundantly located in other licensee-controlled documents.

R Relocated Specifications - Changes to the CTSs that relocate the requirements that do not meet the selection criteria of 10 CFR 50.36(d)(2)(ii).

The ITS application included a justification for each proposed change to the CTSs in a numbered discussion of change (DOC), using the above letter designations as appropriate. In addition, the ITS application included an explanation of each difference between ITS and ISTS requirements in a numbered justification for deviation.

The changes to the CTSs, as presented in the ITS application, are listed and described in the following five tables (for each ITS section) provided as Attachments 2 through 6 to this SE:

- Table A - Administrative Changes
- Table M - More Restrictive Changes
- Table L- Less Restrictive Changes
- Table LA - Removed Detail Changes
- Table R - Relocated Specifications

These tables provide a summary description of the proposed changes to the CTSs. The tables are only meant to summarize the changes being made to the CTSs. The details as to what the actual changes are and how they are being made to the CTSs or ITSs are provided in the licensee's application and supplemental letter.

The NRC staff's evaluation and additional description of the kinds of changes to the CTS requirements listed in Tables A, M, L, LA, and R attached to this SE are presented in Sections A through E below, as follows:

- Section A - Administrative Changes
- Section B - More Restrictive Changes
- Section C - Less Restrictive Changes
- Section D - Removed Details
- Section E - Relocated Specifications

The control of specifications, requirements, and information relocated from the CTSs to licensee-controlled documents is described in Section F below, and other CTS changes (i.e., beyond-scope changes, changes beyond the scope of a TS conversion) are described in Section G below.

A. <u>Administrative Changes to the CTS</u>

Administrative changes are intended to incorporate human factors principles into the form and structure of the ITSs so that plant operations personnel can use them more easily. These changes are editorial in nature or involve the reorganization or reformatting of CTS requirements without affecting technical content or operational restrictions. Every section of the ITSs reflects this type of change. In order to ensure consistency, the NRC staff review of the licensee proposed TS used the ISTSs as guidance to reformat and make other administrative changes that do not involve technical changes to CTSs. Among the changes proposed by the licensee and found acceptable by the NRC staff are:

- Identifying plant-specific wording for system names, etc.;
- Splitting up requirements currently grouped under a single current specification and moving them to more appropriate locations in two or more specifications of the ITSs;
- Combining related requirements currently presented in separate specifications of the CTSs into a single specification of ITSs;
- Presentation changes that involve rewording or reformatting for clarity (including moving an existing requirement to another location within the TSs) but that do not involve a change in requirements;
- Wording changes and additions that are consistent with CTS interpretation and practice and that more clearly or explicitly state existing requirements;
- Deletion of TSs that no longer apply;
- Deletion of details that are strictly informational and have no regulatory basis; and,
- Deletion of redundant TS requirements that exist elsewhere in the TSs.

Table A attached to this SE lists the administrative changes being made in the DBNPS ITS conversion. Table A is organized in ITS order by each A-type DOC to the CTSs, provides a summary description of the administrative change that was made, and provides CTS and ITS references. The NRC staff reviewed all of the administrative and editorial changes proposed by the licensee and finds them acceptable because they are compatible with the Writer's Guide and the ISTSs, do not result in any change in operating requirements, and are consistent with the Commission's regulations.

B. More Restrictive Changes to the CTS

The licensee, in electing to implement the specifications of the ISTSs, proposed a number of requirements that are more restrictive than those in the CTSs. The ITS requirements in this category include requirements that are either new, more conservative than corresponding requirements in the CTSs, or have additional restrictions that are not in the CTSs, but are in the ISTSs. Examples of more restrictive requirements are placement of an LCO on plant equipment that is not required by the CTSs, more restrictive requirements to restore inoperable equipment, and more restrictive SRs.

Table M attached to this SE lists the more restrictive changes being made in the DBNPS ITS conversion. Table M is organized in ITS order by each M-type DOC to the CTSs, provides a summary description of each more restrictive change that was adopted, and references the affected CTSs and ITSs. These changes are additional restrictions on plant operation that enhance safety and are acceptable.

C. Less Restrictive Changes to the CTS

Less restrictive requirements include deletions of and relaxations to portions of the CTS requirements that are being retained in the ITSs. When requirements have been shown to give little or no safety benefit, their relaxation or removal from the TSs may be appropriate. In most cases, relaxations previously granted to individual plants on a plant-specific basis were the result of (1) generic NRC actions, (2) new NRC staff positions that have evolved from technological advancements and operating experience, or (3) resolution of the Owners Groups' comments on ISTSs. The NRC staff reviewed generic relaxations contained in the ISTSs and found them acceptable because they are consistent with current licensing practices and the Commission's regulations. The DBNPS design was also reviewed to determine if the specific design basis and licensing basis are consistent with the technical basis for the model requirements in the ISTSs and thus provide a basis for ITSs.

All of the changes to the CTSs involved deletions of and relaxations to portions of CTS requirements that can be grouped in the following 10 categories:

Category 1 – Relaxation of LCO Requirement
Category 2 – Relaxation of Applicability
Category 3 – Relaxation of Completion Time
Category 4 – Relaxation of Required Action
Category 5 – Deletion of SR
Category 6 – Relaxation of SR Acceptance Criteria
Category 7 – Relaxation of Surveillance Frequency, Non-24 Month Type
Category 8 – Deletion of Reporting Requirements
Category 9 – Addition of LCO 3.0.4 Exception
Category 10 – Changing Instrumentation Allowable Values

The following discussion addresses why these categories of less restrictive changes are acceptable:

Category 1 – Relaxation of LCO Requirement

Certain CTS LCOs specify limits on operational and system parameters beyond those necessary to ensure meeting safety analysis assumptions and, therefore, are considered overly restrictive. The CTSs also contain operating limits that have been shown to give little or no safety benefit to the operation of the plant. The ITSs, consistent with the guidance in the ISTSs, would delete or revise such operating limits. CTS LCO changes of this type include: (1) redefining operating modes, including mode title changes; (2) deleting or revising operational limits to establish requirements consistent with applicable safety analyses; (3) deleting requirements for equipment or systems that establish system capability beyond that assumed to function by the applicable safety analyses, or that are implicit to the ITS requirement for systems, components, and devices to be operable; and (4) adding allowances to use administrative controls on plant devices and equipment during times when automatic control is required, or to establish temporary administrative limits, as appropriate, to allow time for systems to establish equilibrium operation. TSs changes represented by this type allow operators to more clearly focus on issues important to safety. The resultant ITS LCOs maintain an adequate degree of protection consistent with the safety analysis. They also improve focus on issues important to safety and provide reasonable operational flexibility without adversely affecting the safe operation of the plant. Changes involving the relaxation of LCOs are consistent with the guidance established by the ISTSs taking into consideration the DBNPS Current Licensing Basis (CLB). Therefore, based on the above, Category 1 changes are acceptable.

Category 2 – Relaxation of Applicability

The CTSs require compliance with the LCO during the applicable Mode(s) or other conditions specified in the Specification's Applicability statement. When CTS Applicability requirements are inconsistent with the applicable accident analyses assumptions for a system, subsystem, or component specified in the LCO, the licensee proposed to change the LCO to establish a consistent set of requirements in the ITSs. These modifications or deletions are acceptable because, during the operational or other conditions specified in the ITSs applicability requirements, the LCOs are consistent with the applicable safety analyses. Changes involving relaxation of applicability requirements are consistent with the guidance established by the ISTSs, taking into consideration the DBNPS CLB. Therefore, based on the above, Category 2 changes are acceptable.

Category 3 – Relaxation of Completion Time

Upon discovery of a failure to meet an LCO, the TSs specify time limits for completing Required Actions of the associated TS Conditions. Required Actions establish remedial measures that must be taken within specified Completion Times. Completion Times specify limits on the duration of plant operation in a degraded condition. Incorporating longer Completion Times is acceptable because such Completion Times will continue to be based on the operability status of redundant TSs required features, the capacity and capability of remaining TS-required features, provision of a reasonable time for repairs or replacement of required features, vendor-developed standard repair times, and the low probability of a DBA occurring during the repair period. Changes involving relaxation of Completion Times are consistent with the guidance established by the ISTSs, taking into consideration the DBNPS CLB. Therefore, based on the above, Category 3 changes are acceptable.

Category 4 – Relaxation of Required Action

LCOs specify the lowest functional capability or performance level of equipment that is deemed adequate to ensure safe operation of the facility. When an LCO is not met, the CTSs specify actions to restore the equipment to its required capability or performance level, or to implement remedial measures providing an equivalent level of protection. Compared to CTS required actions, certain proposed ITS actions would result in extending the time period during which the licensee may continue to operate the plant with specified equipment inoperable. Upon expiration of this time period, further action, which may include shutting down the plant, is required. Changes of this type include providing an option to (1) isolate a system, (2) place equipment in the state assumed by the safety analysis, (3) satisfy alternate criteria, (4) take manual actions in place of automatic actions, (5) "restore to operable status" within a specified time frame, (6) place alternate equipment into service, or (7) use more conservative TS instrumentation actuation setpoints. The resulting ITS actions provide measures that adequately compensate for the inoperable equipment, and are commensurate with the safety importance of the inoperable equipment, plant design, and industry practice. Therefore, these action requirements will continue to ensure safe operation of the plant. Changes involving relaxations of action requirements are consistent with the guidance established by the ISTSs, taking into consideration the DBNPS CLB. Therefore, based on the above, Category 4 changes are acceptable.

Category 5 – Deletion of Surveillance Requirement

The CTSs require maintaining LCO specified SSCs operable by meeting SRs in accordance with specified SR frequencies. This includes conducting tests to demonstrate that such SSCs are operable and that LCO specified parameters are within specified limits. When the test acceptance criteria and any specified conditions for the conduct of the test are met, the equipment is deemed operable. The changes of this category relate to deletion of CTS SRs, including deletion of an SR in its entirety, deletion of acceptance criteria, and deletion of the conditions required for performing the SR.

Deleting the SRs, including acceptance criteria and/or conditions for performing the SRs, for these items provides operational flexibility, consistent with the objective of the ISTSs, without reducing confidence that the equipment is operable. For example, the CTSs contain SRs that are not included in the ISTSs for a variety of reasons. This includes deletion of SRs for measuring values and parameters that are not necessary to meet ISTS LCO requirements. Also, the ISTSs may not include reference to specific acceptance criteria contained in the CTSs, because these acceptance criteria are not necessary to meet ISTS LCO requirements, or are defined in other licensee-controlled documents. The changes to SR acceptance criteria are acceptable because appropriate testing standards are retained for determining that the LCO required features are operable as defined by the ISTSs.

Deleting conditions for performing SRs includes not requiring testing of deenergized equipment (e.g., instrumentation channel checks) or equipment that is already performing its intended safety function (e.g., position verification of valves locked in their safety actuation position). This category also includes allowing verification of the position of valves in high radiation areas by administrative means. ITS administrative controls (ITS 5.7) regarding access to high radiation areas make the likelihood of mispositioning such valves small. Waiving performance of a surveillance under these conditions is acceptable because the equipment is already performing its intended safety function.

The deletion of these CTS SRs optimizes test requirements for the affected safety systems and increases operational flexibility. Changes involving relaxations of SRs, as described, are consistent with the guidance established by the ISTSs, taking into consideration the DBNPS CLB. Therefore, based on the above, Category 5 changes are acceptable.

Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria

Prior to placing the plant in a specified operational Mode or other condition stated in the applicability of an LCO, and in accordance with the specified SR time interval thereafter, the CTSs require establishing the operability of each LCO-required component by meeting the SRs associated with the LCO. This usually entails performance of testing to demonstrate the operability of the LCO-required components, or the verification that specified parameters are within LCO limits. A successful demonstration of operability requires meeting the specified acceptance criteria, as well as any specified conditions, for the conduct of the test. Relaxations of CTS SRs would include relaxing both the acceptance criteria and the conditions of performance. Also, the ITSs would permit the use of an actual, as well as a simulated, actuation signal to satisfy SRs for automatically actuated systems. This is acceptable because TS-required features cannot distinguish between an "actual" signal and a "test" signal. These relaxations of CTS SRs optimize test requirements for the affected safety systems and increase operational flexibility. These CTS SR relaxations are consistent with the guidance established by the ISTSs in consideration of the DBNPS CLB.

Category 7 – Relaxation of Surveillance Frequency, Non-24 Month Type

Prior to placing the plant in a specified operational Mode or other condition stated in the applicability of an LCO, and in accordance with the specified SR time interval (frequency) thereafter, the CTSs require establishing the operability of each LCO-required component by meeting the SRs associated with the LCO. This usually entails performance of testing to demonstrate the operability of the LCO-required components, or the verification that specified parameters are within LCO limits. A successful demonstration of operability requires meeting the specified acceptance criteria, as well as any specified conditions, for the conduct of the test, at a specified frequency based on the reliability and availability of the LCO-required components.

Relaxations of CTS SRs would include extending the interval between the SRs. This interval is the surveillance test interval (STI). These relaxations of CTS SR frequencies (or extending the STI) optimize test requirements for the affected safety systems and increase operational flexibility. These CTS SR frequency relaxations (or extending the STI) are consistent with the guidance established by the ISTSs in consideration of the DBNPS CLB.

Category 8 – Deletion of Reporting Requirements

The CTSs contain requirements that are redundant to reporting regulations in 10 CFR. For example, CTSs include requirements that a "Reportable Event" is any of those conditions specified in 10 CFR 50.73. However, consistent with the ISTSs, the ITSs would omit many of the CTS reporting requirements because the reporting requirements in the regulations cited do not need repeating in the TSs to ensure timely submission to the NRC. Therefore, Category 8 changes have no impact on the safe operation of the plant. Deletion of these requirements is beneficial because it reduces the administrative burden on the licensee and in turn allows increased attention to plant operations important to safety. Therefore, Category 8 changes have no impact on the safe operation of the plant and are acceptable.

Category 9 – Addition of LCO 3.0.4 Exception

The CTS precludes a change in MODES while relying on the Actions of a Specification. However, consistent with the ISTSs, the ITSs would allow entry into a Mode or other specified condition in the Applicability, even when an LCO is not met, provided: (a) the associated Actions to be entered permit continued operation in the Mode or other specified condition in the Applicability for an unlimited period of time; (b) the performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the Mode or other specified condition in the Applicability, and establishment of risk management actions, if appropriate (exceptions to this Specification are stated in the individual Specifications); or (c) an allowance is stated in the individual value, parameter, or other Specification.

The risk assessments will be conducted using the procedures and guidance endorsed by Regulatory Guide (RG) 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants." The results of the risk assessment shall be considered in determining the acceptability of entering the Mode or other specified condition in the Applicability, and any corresponding risk management actions. In addition, elements of acceptable risk assessment and risk management actions are included in Section 11 of NUMARC 93-01 "Assessment of Risk Resulting from Performance of Maintenance Activities," as endorsed by RG 1.182, which addresses general guidance for conduct of the risk assessment, gives quantitative and qualitative guidelines for establishing risk management actions, and provides example risk management actions. These changes are consistent with the guidance established by the ISTSs in consideration of the DBNPS CLB and, in view of the above, are acceptable.

Category 10 – Deletion of Surveillance Requirement Shutdown Performance Requirements

The CTSs require maintaining LCO equipment operable by conducting SRs in accordance with specified SR intervals. The changes of this category relate to deleting the requirement to perform certain SRs during shutdown conditions only. The TSs that specify shutdown conditions would be changed to specify a frequency only. The control of the unit conditions appropriate to perform the test is an issue for procedures and scheduling, and has been determined by the NRC staff to be unnecessary as a TS restriction. As indicated in NRC generic letter (GL) 91-04, allowing this control is consistent with the vast majority of other TS Surveillances that do not dictate unit conditions for the Surveillance. These changes are consistent with the guidance established by the ISTSs in consideration of the DBNPS CLB and, in view of the above, are acceptable.

For the reasons presented above, the proposed less restrictive changes to the CTSs are acceptable because they will not adversely impact safe operation of the facility. The ITS requirements are consistent with the CLB, operating experience, and plant accident and transient analyses, and provide reasonable assurance that public health and safety will be protected.

Table L attached to this SE lists the less restrictive changes being made in the DBNPS ITS conversion. Table L, which is organized in ITS order by each L-type DOC to the CTSs, provides a summary description of the less restrictive change that was made, the CTS and ITS references, and a reference to the specific change type discussed above.

D. <u>Removed Details</u>

When requirements have been shown to give little or no safety benefit, their removal from the TSs may be appropriate. In most cases, relaxations previously granted to individual plants on a plant-specific basis were the result of (1) generic NRC actions, (2) new NRC staff positions that have evolved from technological advancements and operating experience, or (3) resolution of the owners groups' comments on the ISTSs. The NRC staff reviewed generic relaxations contained in the ISTSs and found them acceptable because they are consistent with current licensing practices and the Commission's regulations. The DBNPS design was also reviewed to determine if the specific design basis and licensing basis are consistent with the technical basis for the model requirements in the ISTSs and thus provide a basis for ITSs. All of the changes to the CTSs involving the removal of specific requirements and detailed information from individual specifications evaluated to be Types 1 through 5 as described below:

Type 1 - Removing Details of System Design and System Description, Including Design Limits

The design of the facility is required to be described in the USAR by 10 CFR 50.34. In addition, the quality assurance (QA) requirements of Appendix B to 10 CFR Part 50 require that plant design be documented in controlled procedures and drawings and maintained in accordance with an NRC-approved Quality Assurance Topical Report (QATR). The regulation at 10 CFR 50.59 specifies controls for changing the facility as described in the USAR. The regulation at 10 CFR 50.54(a) specifies criteria for changing the QATR. The Technical Requirements Manual (TRM) is a general reference in the USAR and changes to it are accordingly also subject to 10 CFR 50.59. The ITS Bases also contain descriptions of system design. ITS 5.5.13 specifies controls for changing the Bases. Removing details of system design is acceptable because the associated CTS requirements being retained without these details are adequate to ensure safe operation of the facility. In addition, retaining such details in TS is unnecessary to ensure proper control of changes. Cycle-specific design limits are contained in the Core Operating Limits Report (COLR) in accordance with GL 88-16, "Removal of Cycle-Specific Parameter Limits From Technical Specifications," dated October 3, 1988. ITS Section 5.6, "Reporting Requirements," includes the programmatic requirements for the COLR. Therefore, it is acceptable to remove Type 1 details from the CTSs and place them in licensee-controlled documents.

Type 2 - Removing Descriptions of System Operation

The plans for normal and emergency operation of the facility are required to be described in the USAR by 10 CFR 50.34. ITS 5.4.1.a and 5.4.1.e will require written procedures to be established, implemented, and maintained for plant operating procedures recommended in Appendix A of RG 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, dated February 1978, and in all programs specified in ITS Section 5.5, respectively. The ITS Bases also contain descriptions of system operation. Controls specified in 10 CFR 50.59 apply to changes in procedures as described in the USAR and TRM. ITS 5.5.13 specifies controls for changing the Bases. Removing details of system operation is acceptable because the associated CTS requirements being retained without these details are adequate to ensure safe operation of the facility. In addition, retaining such details in TS is unnecessary to ensure proper control of changes. Therefore, it is acceptable to remove Type 2 details from the CTSs and place them in licensee-controlled documents.

Type 3 - Removing Procedural Details for Meeting TS Requirements or Reporting Requirements

Details for performing TS SRs or for regulatory reporting are more appropriately specified in the plant procedures. Prescriptive procedural information in a TS requirement is unlikely to contain all procedural considerations necessary for the plant operators to comply with TSs and all regulatory reporting requirements, and referral to plant procedures is therefore required in any event. Changes to procedural details include those associated with limits retained in the ITSs. For example, Specification 5.4.1 requires that written procedures covering activities that include all programs specified in Specification 5.5 be established, implemented, and maintained. ITS 5.5.7, "Inservice Testing Program," requires a program to provide controls for inservice testing (IST) of American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components. The program includes defining testing frequencies specified in the ASME Operation and Maintenance Standards and Codes (OM Codes), and applicable addenda. The CTSs also contain requirements to test specific components such as pumps and valves, and to establish IST of Quality Group A, B, and C pumps and valves performed in accordance with the requirements for ASME Code Class 1, 2 and 3 components specified in the ASME OM Codes and addenda, subject to the applicable provisions of 10 CFR 50.55a. Therefore, it is acceptable to remove Type 3 details from the CTSs and place them in licensee-controlled documents.

Type 4 - Removal of a LCO, a SR, or other TS Requirement to the TRM, USAR, Offsite Dose Calculation Manual (ODCM), Quality Assurance Program Manual (QAPM), or Inservice Inspection Program (IIP)

Certain CTS administrative requirements are redundant with respect to current regulations and thus are relocated to the USAR or other appropriate licensee-controlled documents, including the TRM, ODCM, QAPM, or IIP. The Final Policy Statement allows licensees to relocate to licensee-controlled documents CTS requirements that do not meet any of the criteria for mandatory inclusion in the TSs. Changes to the facility or to procedures as described in the USAR are made in accordance with 10 CFR 50.59. Changes made in accordance with the provisions of other licensee-controlled documents are subject to the specific requirements of those documents. For example, 10 CFR 50.54(a) governs changes to the QAPM, and ITS 5.5.13 governs changes to the ITS Bases. Therefore, it is acceptable to remove Type 6 details from CTSs and place them in licensee-controlled documents.

Type 5 - Removal of Cycle-Specific Parameter Limits from the TSs to the COLR

Certain CTS requirements contain cycle-specific parameter limits that are redundantly specified in the COLR, and thus, are relocated to the licensee-controlled COLR. The Final Policy Statement allows licensees to relocate to licensee-controlled documents CTS requirements that do not meet any of the criteria for mandatory inclusion in the TSs. Changes are made to the COLR in accordance with the provisions of ITS 5.6.3. Therefore, it is acceptable to remove Type 5 details from CTSs and place them in licensee-controlled documents.

Table LA attached to this SE lists the less restrictive removal of detail changes being made in the DBNPS ITS conversion. Table LA is organized in ITS order by each LA-type DOC and includes the following:

1. The ITS/CTS number, followed by the DOC number, (e.g. LA.1);
2. The reference numbers of the associated CTS requirements;
3. A summary description of the relocated details and requirements;
4. The name of the licensee-controlled document to contain the relocated details and requirements (location);
5. The regulation (or ITS Specification) for controlling future changes to relocated requirements (change control process); and
6. A characterization of the type of change.

The NRC staff has concluded that these types of detailed information and specific requirements do not need to be included in the ITSs to ensure the effectiveness of the ITSs to adequately protect the health and safety of the public. Accordingly, these requirements may be moved to one of the following licensee-controlled documents for which changes are adequately governed by a regulatory or TS requirement:

- Bases controlled in accordance with ITS 5.5.9, "Technical Specifications (TS) Bases Control Program."
- USAR (which references the TRM) controlled by 10 CFR 50.59.
- Programmatic documents required by ITS Section 5.5 and controlled by ITS Section 5.4.
- IST Program and IIP controlled by 10 CFR 50.55a.
- ODCM controlled by ITS 5.5.1.
- COLR controlled by ITS 5.6.3.
- QAPM, referenced in the USAR, and controlled by 10 CFR Part 50, Appendix B, and 10 CFR 50.54(a).

To the extent that information has been relocated to licensee-controlled documents, such information is not required to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to public health and safety. Further, where such information is contained in LCOs and associated requirements in the CTSs, the NRC staff has concluded that they do not fall within any of the four criteria set forth in 10 CFR 50.36(d)(2)(ii) and discussed in the Final Policy Statement (see Section 2.0 of this SE). Accordingly, existing detailed information, such as generally described above, may be removed from the CTSs and not included in the ITSs.

E. <u>Relocated Specifications</u>

The Final Policy Statement states that LCOs and associated requirements that do not satisfy or fall within any of the four specified criteria (now contained in 10 CFR 50.36(d)(2)(ii)) may be relocated from existing TSs (an NRC-controlled document) to appropriate licensee-controlled documents as noted in Section D above.

This section discusses the relocation of entire specifications from the CTSs to licensee-controlled documents. These specifications generally would include LCOs, Action Statements (i.e., Actions), and associated SRs. In its application and supplements, the licensee proposed relocating such specifications from the CTSs to a licensee-controlled document such as the USAR, the TRM, or other document under regulatory control such as the COLR, ODCM, QAPM, IST program, and IIP. The NRC staff has reviewed the licensee's submittals and finds that relocation of these requirements is acceptable in that the LCOs and associated requirements were found not to fall within the scope of 10 CFR 50.36(d)(2)(ii) and changes to licensee-controlled documents will be adequately controlled by 10 CFR 50.59, as applicable. These provisions will continue to be implemented by appropriate station procedures (i.e., operating procedures, maintenance procedures, surveillance and testing procedures, and work control procedures).

Table R attached to this SE lists the relocated changes that would be made in the DBNPS ITS conversion and lists all specifications that are being relocated from the CTSs to licensee-controlled documents. Table R includes the following in columns:

1. References to the ITS/CTS section and DOC number;
2. References to the relocated CTS requirement;
3. Summary descriptions of the relocated CTS requirement;
4. Names of the document that will contain the relocated specifications (i.e., the new location); and
5. The method for controlling future changes to the relocated specifications (i.e., the regulatory change control process).

The specifications relocated from the CTSs are not required to be in the TSs because they do not fall within the criteria for mandatory inclusion in the TSs as stated in 10 CFR 50.36(d)(2)(ii). These specifications are not needed to obviate the possibility that an abnormal situation or event will give rise to an immediate threat to the public health and safety. The NRC staff concludes that appropriate controls have been established for all of the current specifications and information being moved to the TRM. These relocations are the subject of a new license condition discussed in Section 7.0 of this SE. Until incorporated in licensee-controlled documents, changes to these specifications and information will be controlled in accordance with the current applicable procedures and regulations.

F. Control of Specifications, Requirements, and Information Relocated from the CTS

In the ITS conversion, the licensee proposes to relocate specifications, requirements, and detailed information from the CTSs to licensee-controlled documents. This is discussed in Sections 4.D and 4.E of this SE. The facility and procedures described in the USAR and TRM can be revised in accordance with the provisions of 10 CFR 50.59, to ensure that records are maintained and appropriate controls are established over those requirements removed from the CTSs and future changes to the requirements. Other licensee-controlled documents contain provisions for making changes consistent with applicable regulatory requirements. For example, the ODCM can be changed only in accordance with ITS 5.5.1, and the administrative instructions that implement the QAPM can be changed in accordance with 10 CFR 50.54(a) and 10 CFR Part 50, Appendix B. The documentation of these changes will be maintained by the licensee in accordance with the record retention requirements specified in the QAPM and such applicable regulations as 10 CFR 50.59.

The license condition for the relocation of requirements from the CTSs, which is discussed in Section 7.0 of this SE, will address the implementation of the ITS conversion and the schedule for the relocation of the CTS requirements into licensee-controlled documents.

G. Evaluation of Other TS Changes (Beyond-Scope Issues) Included in the Application for Conversion to ITS

This section evaluates other TS changes included in the licensee's ITS conversion application. These changes include items that deviate from both the CTSs and the STSs. These changes are termed beyond-scope issues (BSIs). They were either identified by the licensee in its ITS application, or by the NRC staff during the course of its review. The BSIs were included in the Notice of Consideration of Issuance of Amendments to Facility Operating Licenses and Opportunity for a Hearing published in the *Federal Register* on May 22, 2008 (73 FR 29787).

The following BSIs, listed below, do not have a corresponding SE due to the fact that the licensee has either chosen to keep their CTS or have decided to fully adopt the STS:

- BSI-11
- BSI-12
- BSI-14
- BSI-15
- BSI-16
- BSI-17
- BSI-18
- BSI-20
- BSI-23
- BSI-24

This section of the SE is divided into BSIs identified by the licensee (Section G.1) and those identified by the NRC staff (Section G.2).

G.1 BSI Changes Identified by the Licensee

G.1.1 BSI-1: ITS 3.3.8, DOC L03

BSI-1 proposes a change to the CTS by not requiring a CHANNEL CHECK of 2 relays (ITS 3.3.8, DOC L03). CTS 4.3-2 Functional Unit 4.b requires a CHANNEL CHECK of the Essential Bus Feeder Breaker Trip Degraded Voltage Relay (DVR) and Functional Unit 4.c requires a CHANNEL CHECK of the Diesel Generator Start and Load Shed on Essential Bus, Loss of Voltage Relay (LVR). ITS 3.3.8 does not require a CHANNEL CHECK.

G.1.1.1 Regulatory Evaluation

The NRC staff considered the following regulatory requirements and guidance in its review of the application:

Title 10, Part 50, "Domestic Licensing of Production and Utilization Facilities," of the *Code of Federal Regulations* (10 CFR Part 50) establishes the fundamental regulatory requirements. Specifically, Appendix A, "General Design Criteria for Nuclear Power

Plants," to 10 CFR Part 50 provides, in part, the necessary design, fabrication, construction, testing, and performance requirements for structures, systems, and components important to safety.

General Design Criterion (GDC) 10, "Reactor Design," in Appendix A to 10 CFR Part 50, requires that the reactor core and associated coolant, control, and protection systems be designed with appropriate margin to ensure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences.

GDC 13, "Instrumentation and Control," requires that instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, anticipated operational occurrences, and accident conditions as appropriate to ensure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges.

GDC 20, "Protection System Functions," requires that the protection system be designed (1) to initiate automatically the operation of appropriate systems, including the reactivity control systems, to ensure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and initiate the operation of systems and components important to safety.

The regulation at 10 CFR 50.36, "Technical Specifications," states, "Each applicant for a license authorizing operation of a production or utilization facility shall include in his application proposed TSs in accordance with the requirements of this section." Specifically, 10 CFR 50.36(d)(3) includes SRs relating to test, calibration, or inspection to ensure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that limiting conditions for operation will be met.

G.1.1.2 Technical Evaluation

The licensee proposed a TS change to LCO 3.3.8 to delete the requirement for channel check surveillance every 12 hours for the loss of voltage and degraded voltage instrumentation for the emergency diesel generator (EDG) loss of power start (LOPS) function. The NRC has classified the issue related to this information as BSI-1. The staff asked a question related to this BSI, and the licensee provided a response; both appear on the NRC/Davis-Besse ITS conversion website. The Instrumentation and Controls Branch (EICB) reviewed the licensee response for BSI-1.

The current TS 4.3-2 regarding Functional Units 4.b and 4.c requires the 12-hour channel check for the LVR and DVR for the EDG LOPS function. The licensee has requested to delete this surveillance test from ITS LCO 3.3.8. These safety functions are performed by voltage relays, which could be electromechanical or solid-state design. The licensee based this change on the fact that the channel check as described in ITS Section 1.0 uses observation to qualitatively assess channel behavior during operation. It should include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameters. However, this function is provided by voltage relays that do not provide any indication of voltage to the operators. The only indications the relays provide are to alarms, if they are tripped, in the control room or to a local target indicator that basically shows whether the channel is tripped. However, the relays do not indicate the value of the voltage at which the channel has tripped. Thus, the channel check requirement provides no qualitative information as to what voltage each relay is actually sensing and thus does not provide the status of each channel compared to the other channels. In addition, the operator routinely monitors the status of the alarms in the control room. Therefore, it is not necessary to specify a channel check for these instruments. Based on these arguments, the licensee concluded that without the channel check, the loss of power instrumentation will continue to be tested in a manner and at a frequency necessary, to give confidence that the assumptions in the safety analysis will be met.

The NRC staff asked the licensee to provide details regarding these relays, including model and make information and the vendor manual. The licensee provided that information. Based on its review of the vendor manual, the NRC staff came to the same conclusion as the licensee. Therefore, the NRC staff finds the proposed change acceptable.

G.1.1.3 Conclusion

The NRC staff reviewed BSI-1 related to a TS change in the ITS conversion of the DBNPS. Based on its review of the licensee's submittal and response to the NRC staff's question, the NRC staff finds that the proposed TS change related to BSI-1 is acceptable.

G 1.2 BSI-2: ITS 3.3.11, DOC M02

BSI-2 proposes a change to the CTS by changing the Allowable Values for three Functional Units (ITS 3.3.11, DOC M02). CTS Table 3.3-12 Functional Unit 1, Steam Line Pressure-Low, specifies an Allowable Value of ≥ 591.6 per square inch gauge (psig) for the CHANNEL FUNCTIONAL TEST and ≥ 586.6 psig for CHANNEL CALIBRATION. CTS Table 3.3-12 Functional Unit 2, Steam Generator Level-Low, specifies an Allowable Value of ≥ 16.9 inches for the CHANNEL FUNCTIONAL TEST. CTS Table 3.3-12 Functional Unit 3, Steam Generator Feedwater Differential Pressure-High, specifies an Allowable Value of ≤ 197.6 psig for the CHANNEL FUNCTIONAL TEST and ≤ 199.6 psig for CHANNEL CALIBRATION. ITS Table 3.3.11-1 Functions 1, 3, and 2 specify Allowable Values of ≥ 600.2 psig, ≥ 17.3 inches, and ≤ 176.8 psig, respectively.

G.1.2.1 Regulatory Evaluation

The NRC staff considered the following regulatory requirements and guidance in its review of the application:

In 10 CFR 50.36, "Technical Specifications," the Commission established its regulatory requirements related to the contents of the TSs. According to 10 CFR 50.36, "Each applicant for a license authorizing operation of a production or utilization facility shall include in his application proposed technical specifications in accordance with the requirements of this section." Specifically, 10 CFR 50.36(d)(2)(i) defines limiting conditions for operation as "the lowest functional capability or performance levels of equipment required for safe operation of the facility." Furthermore, 10 CFR 50.36(d)(1)(ii)(A) states, "Where a limiting safety system setting is specified for a variable on which a safety limit has been placed, the setting must be so chosen that automatic protective action will correct the abnormal situation before a safety limit is exceeded." The criteria for evaluating items to determine if a LCO of a nuclear reactor must be established appear in 10 CFR 50.36(d)(2)(ii). In addition, 10 CFR 50.36(d)(3) states, "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions of operation will be met." The NRC staff reviewed the proposed TS changes against these requirements in 10 CFR 50.36 to ensure that there is reasonable assurance that the systems affected by the proposed TS changes will perform their required safety functions.

GDC 13, "Instrumentation and Control," in Appendix A, "General Design Criteria for Nuclear Power Plants," of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," requires that the instrumentation be provided to monitor variables and systems and that controls be provided to maintain these variables and systems within prescribed operating ranges during normal operation, anticipated operational occurrences, and accident conditions. The NRC staff specifically reviewed the proposed TS changes and the affected instrument setpoint calculations and plant surveillance procedures to ensure proper operation of the steam and feedwater rupture control system (SFRCS).

GDC 15, "Reactor Coolant System Design," as it relates to the reactor coolant system and associated auxiliary, control, and protection systems being designed with sufficient margin to assure that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences.

GDC 20, "Protection System Functions," requires that the protection system be designed to initiate operation of appropriate systems to ensure that specified acceptable fuel design limits are not exceeded. The NRC staff established that the proposed TS change will ensure that the fuel design limits and plant safety limits specified in SFRCS TS 2.0 will not be exceeded with the proposed TS changes.

RG 1.105, Revision 3, "Setpoints for Safety-Related Instrumentations," issued December 1999, describes a method acceptable to the NRC staff for complying with the NRC's regulations for ensuring that setpoints for safety-related instrumentation are initially within and remain within the TS limits. The RG endorses Part I of ISA-S67.04-1994, "Setpoints for Nuclear Safety Instrumentation," subject to the NRC staff's clarifications. The NRC staff used this guide to establish the adequacy of the Davis-Besse setpoint calculation methodologies and the related plant surveillance procedures.

Regulatory Issue Summary (RIS) 2006-17, "NRC Staff Position on the Requirements of 10 CFR 50.36, "Technical Specifications," Regarding Limiting Safety System Settings During Periodic Testing and Calibration of Instrument Channels," dated August 24, 2006, addresses the NRC's requirements on limiting safety system settings (LSSSs) assessed during periodic testing and calibration of instrumentation. This RIS discusses issues that could occur during testing of LSSSs and that, therefore, may adversely affect equipment operability.

G.1.2.2 Technical Evaluation

The licensee proposed changes to the CTS Table 3.3-12 to modify trip setpoint allowable values for the Steam Line Pressure-Low, Steam Generator Level-Low, and Steam Generator

Feedwater Differential Pressure-High functional units instrumentation. These functions are moved to ITS Table 3.3-11. The SFRCS is designed to automatically start the Auxiliary Feedwater (AFW) system in the event of a main steam line break (MSLB), main feedwater (MFW) line rupture, a low level in the steam generators or a loss of all four reactor coolant pumps. SFRCS is designed to automatically isolate the main steam system and MFW system in the event of MSLB or MFW line rupture and align to feed the unaffected steam generator (SG) upon a loss of steam pressure in one of the SGs. The NRC has classified the issue related to this information as BSI-2. The NRC staff asked questions related to this BSI, and the licensee responded to these questions; both the questions and the responses appear on the NRC/Davis-Besse ITS conversion website.

The SFRCS is required to ensure an adequate feedwater supply to remove reactor decay heat during periods when normal feedwater supply has been lost. The licensee proposes to change the ITS Table 3.3.11-1 Functions 1 (Steam Line Pressure-Low), 3 (Steam Generator Level-Low), and 2 (Steam Generator Feedwater Differential Pressure-High) to ≥ 600.2 psig, ≥ 17.3 inches, and ≤ 176.8 psig, respectively. The proposed Allowable Values were calculated using Methods 1 or 2 defined in ISA RP 67.04.02-2000, "Methodologies for the Determination of Setpoints for Nuclear Safety-Related Instrumentation." This change in the ITS deviates from the CTS and STS by only specifying a single Allowable Value and not two Allowable Values, one applicable for a channel functional test and the other applicable for a channel calibration.

In its questions, posted on the website on December 26, 2007, the NRC asked the licensee to submit its setpoint methodology and to describe how it meets the NRC staff's guidance provided in RIS 2006-17. The licensee posted its response to these questions on the website on March 10, 2008.

The licensee submitted three calculations for these three functions showing the derivation of different values for the affected instrumentation. The licensee's calculations documented how the allowable values, acceptable as-found tolerance, acceptable as-left tolerance limiting trip setpoint, and nominal trip setpoint are calculated from the analytical limit. The NRC staff reviewed calculation C-ICE-083.03-004 for the Steam Generator Feedwater Differential Pressure-High function and determined that this calculation properly calculates all parameters in accordance with the guidance provided in RG 1.105, Revision 3, and RIS 2006-17, except the acceptable as-found tolerance value. Based on this finding, the NRC staff posted more RAIs on the website on March 21, 2008. The licensee posted its responses on the website on April 1, and April 4, 2008. In its responses, the licensee agreed with the NRC staff's observation and agreed to revise the calculation before implementing the ITS. The licensee also stated that this change also applies to calculation C-ICE-083.03-003. The NRC staff reviewed the remaining two calculations and agreed that the comment also applies to calculation C-ICE-083.03-003 but not to calculation C-ICE-083.03-001. Based on this, the NRC staff has determined that the licensee calculation meets the guidance in RG 1.105, Revision 3, and RIS 2006-17.

In its response to additional RAIs, the licensee stated that these three setpoints are LSSSs that protect against violating safety limits. Therefore, the licensee has proposed to add two notes to the channel functional test and channel calibration requirements in ITS Table 3.3.11-1 for these functions, consistent with similar notes in ITS 3.3.1 regarding the reactor protection system. In addition, the licensee has made changes to the bases, consistent with ITS 3.3.1. These notes and bases changes are consistent with the guidance provided in RIS 2006-17.

The NRC staff requested the licensee to explain if this change was the result of a proposed power uprate and to justify the proposed Allowable Values. The licensee explained that the proposed parameters were not due to the proposed uprate and that revised calculations were required for various reasons as determined by the DBNPS corrective action process. Also, the NRC staff finds that these three functions are not listed as Safety Limit related LSSSs as required by 10 CFR 50.36 (c)(ii)(A). The proposed parameters require the Functions to trip sooner than the Allowable Values that are specified in the CTS, which is more conservative.

Based on the above discussion, the NRC staff finds the proposed changes to the TS acceptable.

G.1.2.3 Conclusion

The NRC staff has reviewed BSI-2 related to TS changes in the DBNPS ITS conversion. Based on its review of the licensee's submittal and responses to the RAIs, the NRC staff finds that the proposed TS changes related to BSI-2 are acceptable.

G.1.3 BSI-3: ITS 3.4.1, DOC M01

BSI-3 proposes a change to the CTS by increasing the departure from nucleate boiling reactor coolant pressure parameter limits (ITS 3.4.1, DOC M01). CTS Table 3.2.-2 requires measured reactor coolant system pressure to be ≥ 2062.7 psig for four reactor coolant pump operation and ≥ 2058.7 psig for three reactor coolant pump operation. ITS LCO 3.4.1 requires Reactor Coolant System (RCS) loop pressure to be ≥ 2064.8 psig for four reactor coolant pump operation and ≥ 2060.8 psig for three reactor coolant pump operation.

G.1.3.1 Regulatory Evaluation

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The licensee provides TSs in order to maintain the operational capability of structures, systems and components that are required to protect the health and safety of the public. The Commission's regulatory requirements that are related to the content of the TSs are contained in 10 CFR 50.36, "Technical Specifications." The TS requirements in 10 CFR 50.36 include the following categories: (1) safety limits, limiting safety systems settings and control settings; (2) LCO; (3) SR; (4) design features; and (5) administrative controls.

A holder of a license may amend the license (including the TSs) pursuant to 10 CFR 50.90, "Application for amendment of license or construction permit." In general, there are two classes of changes to TSs: (1) changes needed to reflect modifications to the design basis (TSs derived from the design basis), and (2) voluntary changes to take advantage of the evolution in policy and guidance as to the required content and preferred format of TSs over time. This amendment deals primarily with the second class of changes. In determining the acceptability of such changes, the NRC staff interprets the requirements of the current version of 10 CFR 50.36, using as a model the accumulation of generically-approved guidance in the improved standard TS (STS), NUREG 1430 Rev. 3.0.

The NRC staff also applied the following regulatory requirements in reviewing the application:

GDC 15, as it relates to the RCS and associated auxiliary, control, and protection systems being designed with sufficient margin to assure that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences.

G.1.3.2 Technical Evaluation

The licensee proposes to change the Reactor Coolant Pressure parameters for three and four reactor coolant pumps (RCPs) operating which relates to the departure from nucleate boiling (DNB) margin. The limits placed on DNB-related parameters ensure that these parameters will not be less conservative than were assumed in the analyses and thereby provide assurance that the minimum departure from nucleate boiling ratio (DNBR) will meet the required criteria for each of the transients analyzed. The minimum RCS pressure is consistent with operation within the nominal operating envelop and corresponds to the initial pressure in the analyses. A pressure greater than the minimum pressure specified will produce a higher minimum DNBR. A pressure lower than the minimum specified will cause the plant to approach the DNB limit.

The licensee proposes to change the pressure for three and four RCPs operating to ≥ 2060.8 psig and ≥ 2064.8 psig, respectively. The CTS requires the measured reactor coolant pressure to be ≥ 2058.7 psig for three pumps operating and ≥ 2062.7 psig for four pumps operating. The proposed limits are consistent with the UFSAR initial assumptions and have been analytically demonstrated adequate to maintain a minimum DNBR greater than the minimum allowable DNBR throughout each analyzed transient.

The NRC staff requested that the licensee explain how the increase in the minimum pressure criterion will affect the emergency core cooling system (ECCS) capabilities and response times. Also, the NRC staff requested that the licensee explain how this change would affect the current loss-of-coolant accident (LOCA) analyses. The licensee stated that the minimum pressure criterion is based on the minimum pressure drop from the core outlet to the hot-leg pressure tap. The fuel vendor previously identified that the calculated minimum pressure drop from the core outlet to the hot-leg pressure tap, upon which the CTS Table 3.2-2 minimum pressure criterion is based, was not correctly factored into the minimum pressure criterion. Therefore, the CTS reactor coolant pressure parameters listed in CTS Table 3.2-2 are slightly non-conservative. In order to offset this slight non-conservatism, a DNB penalty has been assessed in the past against the retained DNB margin in the reload licensing analyses. With the implementation of the proposed parameters, this offset will no longer be necessary for future core reload analyses. No change is being made to the ECCS performance capabilities and the ECCS systems will continue to inject water at a flow rate that will provide adequate protection to the fuel and remove excessive heat. There is no change to the ECCS response time. These new parameters are more conservative than the previous parameters, therefore the NRC staff finds the proposed changes acceptable.

G.1.3.3 Conclusion

Based on a review of the information that was provided and as discussed in the Technical Evaluation Section, the NRC staff has determined that the proposed changes to are appropriate. The proposed changes are consistent with NRC practices and policies and therefore, the NRC staff has determined that the proposed changes should be approved.

The Commission has also concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

G.1.4 BSI-4: ITS 3.4.4, DOC L01

BSI-4 proposes a change to the CTS by extending the Completion Time to reduce the trip setpoints from "4 hours" to "10 hours" (ITS 3.4.4., DOC L01). CTS 3.4.1.1 Action A, requires a reduction of the High Flux trip setpoint from the four RCPs operating to three RCPs operating trip setpoint within 4 hours when shifting from four RCPs operating to three RCPs operating. ITS 3.4.4 Action A requires the reduction in the trip setpoints within 10 hours.

G.1.4.1 Regulatory Evaluation

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The licensee provides TSs in order to maintain the operational capability of structures, systems and components that are required to protect the health and safety of the public. The Commission's regulatory requirements that are related to the content of the TSs are contained in 10 CFR 50.36, "Technical Specifications." The TS requirements in 10 CFR 50.36 include the following categories: (1) safety limits, limiting safety systems settings and control settings; (2) LCO; (3) SR; (4) design features; and (5) administrative controls.

A holder of a license may amend the license (including the TSs) pursuant to 10 CFR 50.90, "Application for amendment of license or construction permit." In general, there are two classes of changes to TSs: (1) changes needed to reflect modifications to the design basis (TSs derived from the design basis), and (2) voluntary changes to take advantage of the evolution in policy and guidance as to the required content and preferred format of TSs over time. This amendment deals primarily with the second class of changes. In determining the acceptability of such changes, the NRC staff interprets the requirements of the current version of 10 CFR 50.36, using as a model the accumulation of generically-approved guidance in the improved standard TS (STS), Rev. 3.0.

The NRC staff also applied the following regulatory requirements in reviewing the application:

GDC 15, as it relates to the RCS and associated auxiliary, control, and protection systems being designed with sufficient margin to assure that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences.

G.1.4.2 Technical Evaluation

The licensee proposes to increase the Completion Time to reduce the High Flux trip setpoint from four RCPs to three RCPs operating. The CTS, which applies when shifting from four RCPs operating to three RCPs operating, requires a reduction of the High Flux trip setpoint from the four RCPs operating to three RCPs operating trip setpoint within 4 hours. The ITS proposes to increase the Completion Time to 10 hours.

The STS is written for a plant whose design includes an automatic setdown feature for the nuclear overpower trip setpoint. That is, when shifting from four RCP operation to three RCP operation, the trip setpoints for the reactor protection system (RPS) instrumentation automatically adjust based on RCP configuration. The DBNPS design does not include this automatic setdown feature for the High Flux trip setpoints. The setpoints must be manually adjusted.

This change is similar to BSI-9, ITS 3.2.5, "Power Peaking Factors," to increase the Completion Time to 10 hours to reduce the High Flux and Flux-ΔFlux-Flow trip setpoints when F_Q or $F^N_{\Delta H}$ exceeds its limit in order to maintain both core protection and operability margin at the reduced thermal power. The Completion Time in ITS 3.4.4 has been increased to 10 hours to stay consistent with ITS 3.2.5 and provides reasonable time for repairs or replacement. ITS 3.2.5 Completion Time has been increased from 8 hours to 10 hours to be consistent with Completion Times for similar actions in STS 3.2.4 Required Actions A.1.2.2 and C.2. Also, the increase in time is reasonable based on the low probability of an accident occurring while operating outside the three RCPs operating trip setpoints, the automatic protection provided by the RPS and Flux-ΔFlux-Flow Function (which is automatically reset), the number of steps required to complete the Required Action 3.4.4 A.1, and the thermal power restriction provided in the LCO 3.4.4 b.1.

The NRC staff requested that the licensee provide more technical justification for increasing the Completion Time and provide the procedure for manually shifting from four RCP operation to three RCP operation. The licensee stated that the procedure to reduce the high flux trip setpoints is performed on all 4 RPS channels. From a basic overview, the procedure for any one channel is: (1) Place associated Anticipatory Reactor Trip System (ARTS) channel in bypass; (2) Place RPS channel in bypass; (3) Determine the setpoint voltage value that is equivalent to the three RCP allowable value; (4) The setpoint on the High Flux Trip bistable is adjusted (calibrated) to the lower required setpoint voltage; (5) A Functional Test is performed to make sure that the High Flux function trips within the required setpoint value; and (6) Restore the ARTS and RPS Channel. The NRC staff also evaluated ITS Table 3.3.1-1, "Reactor Protection System Instrumentation" Functions to ensure that they provided the same level of protection as the STS Table 3.3.1-1, "Reactor Protection System Instrumentation" Functions. The NRC staff found the two tables to be consistent and provide the same level of protection. Therefore, the NRC staff finds the proposed changes acceptable.

G.1.4.3 Conclusion

Based on a review of the information that was provided and as discussed in the Technical Evaluation Section, the NRC staff has determined that the proposed changes are appropriate. The proposed changes are consistent with NRC practices and policies and therefore, the NRC staff has determined that the proposed changes should be approved.

The Commission has also concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

G.1.5 BSI-5: ITS 3.5.1, DOC L01

BSI-5 proposes a change to the CTS by allowing a wider range for the core flooding tank (CFT) borated water volume and nitrogen cover pressure (ITS 3.5.1, DOC L01). CTS LCO 3.5.1.b requires each CFT contained water volume be between 7555 gallons and 8004 gallons of borated water. CTS LCO 3.5.1.d requires each CFT nitrogen cover pressure be between 575 psig and 625 psig. In the ITS, SR 3.5.1.2 requires the borated water volume to be between 7480 gallons and 8078 gallons and ITS SR 3.5.1.3 requires the nitrogen cover pressure be between 567 psig and 633 psig.

G.1.5.1 Regulatory Evaluation

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The licensee provides TSs in order to maintain the operational capability of structures, systems and components that are required to protect the health and safety of the public. The Commission's regulatory requirements that are related to the content of the TSs are contained in 10 CFR 50.36, "Technical Specifications." The TS requirements in 10 CFR 50.36 include the following categories: (1) safety limits, limiting safety systems settings and control settings; (2) LCO; (3) SR; (4) design features; and (5) administrative controls.

A holder of a license may amend the license (including the TSs) pursuant to 10 CFR 50.90, "Application for amendment of license or construction permit." In general, there are two classes of changes to TSs: (1) changes needed to reflect modifications to the design basis (TSs derived from the design basis), and (2) voluntary changes to take advantage of the evolution in policy and guidance as to the required content and preferred format of TSs over time. This amendment deals primarily with the second class of changes. In determining the acceptability of such changes, the NRC staff interprets the requirements of the current version of 10 CFR 50.36, using as a model the accumulation of generically approved guidance in the improved standard TS (STS), Rev. 3.1, which is a revision to NUREG 1430 Rev. 3.0.

The NRC staff also applied the following regulatory requirements in reviewing the application:

GDC 15, as it relates to the reactor coolant system and associated auxiliary, control, and protection systems being designed with sufficient margin to assure that the design conditions of the reactor coolant pressure boundary, are not exceeded during any condition of normal operation, including anticipated operational occurrences.

GDC 17 as it relates to the design of the ECCS having sufficient capacity and capability to assure that specified acceptable fuel design limits and the design conditions of the reactor coolant pressure boundary are not exceeded during anticipated operational occurrences and that the core is cooled during accident conditions.

GDCs 35, 36, and 37 as they relate to the ECCS being designed to provide an abundance of core cooling to transfer heat from the core at a rate so that fuel and clad damage will not interfere with continued effective core cooling, to permit appropriate periodic inspection of important components, and to permit appropriate periodic pressure and functional testing.

The regulation at 10 CFR 50.46 acceptance criteria for ECCS states that each boiling or pressurized light-water nuclear power reactor fueled with uranium oxide pellets within cylindrical zircaloy or ZIRLO cladding must be provided with an ECCS that must be designed so that its calculated cooling performance following postulated loss-of-coolant accidents conforms to the criteria set forth in 10 CFR 50.46b.

G.1.5.2 <u>Technical Evaluation</u>

The licensee proposes to change the TS limits for the contained water volume and the nitrogen cover pressure of the CFTs. The CFTs supply water to the reactor during blowdown phase of a LOCA, to provide inventory to help accomplish the refill phase that follows thereafter, and to provide RCS makeup for a small-break LOCA. Two CFTs are provided for these functions. The CFTs are pressure vessels partially filled with borated water and pressurized with nitrogen gas. The CFTs are passive components, since no operator or control actions are required for them to perform their function. Internal tank pressure is sufficient to discharge the contents of the CFTs to the RCS if RCS pressure decreases below the CFT pressure.

The CTS require the contained water volume to be between 7555 gallons and 8004 gallons of borated water and the nitrogen cover pressure should be between 575 psig and 625 psig as per CTS 3.5.1. The ITS proposed limits for the contained water volume are required to be maintained between 12.6 feet and 13.3 feet and the nitrogen cover pressure is required to be maintained between 580 psig and 620 psig. This changes the CTS by specifying a narrower range for the CFT borated water volume and nitrogen cover pressure.

The licensee explained that the CFT borated water volume and nitrogen cover gas requirements specified in the CTS have not changed since the original issuance of the TS and are believed to be based on values that account for some instrument uncertainty. The licensee provided a Condition Report which included uncertainty calculations for the CFTs volume and pressure. Based on these calculations, it was identified that surveillance acceptance criteria that were developed in this calculation warranted additional instrument uncertainty, which made the proposed limits more restrictive than the CTS 3.5.1 requirements for the CFTs contained volume and cover pressure.

The proposed indicated CFT water level limits requiring ≥ 12.6 feet and ≤ 13.3 feet are acceptable. These levels, corrected for instrument uncertainty, assure that the actual water volumes contained in the CFTs will remain between the analytical limits of 7480 gallons and 8078 gallons based on 1040 cu. Ft. -/+ 40. The proposed indicated CFT cover pressure limits requiring ≥ 580 psig and ≤ 620 psig are acceptable. These pressures, corrected for instrument uncertainty, assure that the actual cover pressure in the CFTs will protect the analytical limit of 600 psig -/+ 33 psi. In the case of the CFT volume, the new value is also specified in feet, which is the readout of the available indication. The NRC staff finds the proposed changes acceptable.

G.1.5.3 Conclusion

Based on a review of the information that was provided and as discussed in the Technical Evaluation Section, the NRC staff has determined that the proposed changes are appropriate. The proposed changes are consistent with NRC practices and policies and therefore, the NRC staff has determined that the proposed changes should be approved.

The Commission has also concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

G.1.6 BSI-10: ITS 3.1.0, DOC L03

BSI-10 proposes a change to the CTS by allowing the suspension of the RCS minimum temperature for criticality limit during performance of a MODE 2 PHYSICS TEST (ITS 3.1.0, DOC L03). However, it places a limitation on the RCS lowest loop average temperature that is allowed during the test. CTS 3.10.2 states that limitations of certain Specifications may be suspended during the performance of PHYSICS TESTS. ITS 3.1.9 provides an additional exception to LCO 3.4.2, "RCS Minimum Temperature for Criticality," provided the RCS lowest loop average temperature is ≥ 520°F (ITS LCO 3.1.9 part e). A Surveillance to verify RCS lowest loop average temperature is ≥ 520°F every 30 minutes (ITS SR 3.1.9.2) has been added. In addition, ITS 3.1.9 ACTION C has been added to cover the situation when RCS lowest loop average temperature is not within limit. The Required Action is to suspend PHYSICS TESTS exceptions within 30 minutes.

G.1.6.1 Regulatory Evaluation

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The licensee provides TSs in order to maintain the operational capability of structures, systems and components that are required to protect the health and safety of the public. The Commission's regulatory requirements that are related to the content of the TSs are contained in 10 CFR 50.36, "Technical Specifications." The TS requirements in 10 CFR 50.36 include the following categories: (1) safety limits, limiting safety systems settings and control settings; (2) LCO; (3) SR; (4) design features; and (5) administrative controls.

A holder of a license may amend the license (including the TSs) pursuant to 10 CFR 50.90, "Application for amendment of license or construction permit." In general, there are two classes of changes to TSs: (1) changes needed to reflect modifications to the design basis (TSs derived from the design basis), and (2) voluntary changes to take advantage of the evolution in policy and guidance as to the required content and preferred format of TSs over time. This amendment deals primarily with the second class of changes. In determining the acceptability of such changes, the NRC staff interprets the requirements of the current version of 10 CFR 50.36, using as a model the accumulation of generically-approved guidance in the improved standard TS (STS), Rev. 3.0.

The NRC staff also applied the following regulatory requirements in reviewing the application:

GDC 15, as it relates to the reactor coolant system and associated auxiliary, control, and protection systems being designed with sufficient margin to assure that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences.

G.1.6.2 Technical Evaluation

The licensee proposes to add a suspension during low power physics testing. The purpose of this MODE 2 LCO is to permit physics tests to be conducted by providing exemptions from the requirements of other LCOs. Establishment of a test program to verify that structures, systems, and components will perform satisfactorily in service is required by 10 CFR Part 50, Appendix B. The licensee proposes to add suspension of LCO 3.4.2, "RCS Minimum Temperature for Criticality" provided that the "RCS lowest loop average temperature is ≥ 520 F." The purpose of LCO 3.4.2 is to prevent criticality outside the normal operating regime and to prevent operation in an unanalyzed condition. The licensee used guidance from the STS to add the suspension of LCO 3.4.2 and also TSTF-467 to add the RCS lowest loop average temperature requirement. Even though TSTF-467 is mentioned in the licensee's submittal, this is not an approved NRC document. TSTF-467 will not be referenced in the ITS.

The NRC staff requested that the licensee evaluate the effect, if any, that adding the RCS lowest loop average temperature requirement would have upon the minimum shutdown margin (SDM), particularly with respect to the no-load steam line break analysis. The licensee stated that the STS 3.4.9 (Volume 6, Page 208) allows LCO 3.4.2, "RCS Minimum Temperature for Criticality," to be suspended during performance of a MODE 2 Physics Test. The STS Bases, Applicable Safety Analyses section (Page 214) (which has been maintained in the DBNPS ITS Bases) explains that: "Shutdown capability is preserved by limiting maximum obtainable THERMAL POWER and maintaining adequate SDM, when in MODE 2 PHYSICS TESTS. In MODE 2, the RCS temperature must be within the narrow range instrumentation for plant control. The narrow range temperature instrumentation goes on scale at 520°F. Therefore, it is considered safe to allow the minimum RCS temperature to decrease to 520°F during MODE 2 PHYSICS TESTS, based on the low probability of an accident occurring and on prior operating experience." The Applicable Safety Analyses section of the Bases for STS 3.4.2 (Volume 9, Page 35) states that there are no accident analyses that dictate the minimum temperature for criticality. Furthermore, the STS 3.4.2 Bases Background section states that the reactor coolant moderator temperature coefficient used in core operating and accident analysis are defined for the normal operating temperature range. It also states that Safety and operating analyses for lower temperatures have not been made. DBNPS has maintained the above information in the ITS Bases (it has all been placed in the Applicable Safety Analyses section), and has also included the following information: "Compliance with the LCO ensures that the reactor will not be made or maintained critical at a temperature significantly less than the hot zero power (HZP) temperature, which is assumed in the safety analysis. Failure to meet the requirements of this LCO may produce initial conditions inconsistent with the initial conditions assumed in the safety analysis." Therefore, as shown above, the STS Bases acknowledges that there are no safety analyses that assume a minimum temperature for criticality (MTC). The allowance to go below the normal limit in LCO 3.4.2 (525°F) is acceptable, as stated in STS 3.1.9 Bases, based on the low probability of an accident occurring and on prior operating experience. Thus, DBNPS does not believe that any special evaluation is required to adopt the allowance to go below the 525°F

MTC limit of LCO 3.4.2, since the STS does not base the allowance on any special evaluation. Furthermore, the STS 3.1.9 lower limit for the MTC was previously only stated in the Bases. TSTF-467T is correcting an error in the STS, in that the minimum limit must be specified in the TSs; it cannot only be specified in the Bases since the Bases cannot change the requirements of the TS (and STS 3.1.9, as written, specifically exempts the requirements of LCO 3.4.2). The NRC staff finds the proposed changes acceptable.

G.1.6.3 Conclusion

Based on a review of the information that was provided and as discussed in the Technical Evaluation Section, the NRC staff has determined that the proposed changes are appropriate. The proposed changes are consistent with NRC practices and policies and therefore, the NRC staff has determined that the proposed changes should be approved.

The Commission has also concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

G.2 BSI Changes Identified by the NRC Staff

G.2.1 BSI-6: ITS 3.4.1, DOC L02

BSI-6 proposes a change to the CTS by delaying performance of a RCS flow Surveillance until adequate conditions exist to perform the Surveillance (ITS 3.4.1, DOC L02). CTS 4.2.5.2 requires the RCS total flow rate be determined to be within limits once per 18 months. ITS SR 3.4.1.4 requires the same Surveillance but includes a Note to allow the performance to be delayed for up to 7 days after stable thermal conditions are established at ≥ 70 percent RTP.

G.2.1.1 Regulatory Evaluation

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The licensee provides TSs in order to maintain the operational capability of structures, systems and components that are required to protect the health and safety of the public. The Commission's regulatory requirements that are related to the content of the TSs are contained in 10 CFR 50.36, "Technical Specifications." The TS requirements in 10 CFR 50.36 include the following categories: (1) safety limits, limiting safety systems settings and control settings; (2) LCO; (3) SR; (4) design features; and (5) administrative controls.

A holder of a license may amend the license (including the TSs) pursuant to 10 CFR 50.90, "Application for amendment of license or construction permit." In general, there are two classes of changes to TSs: (1) changes needed to reflect modifications to the design basis (TSs derived from the design basis), and (2) voluntary changes to take advantage of the evolution in policy and guidance as to the required content and preferred format of TSs over time. This amendment deals primarily with the second class of changes. In determining the acceptability of such changes, the NRC staff interprets the requirements of the current version of 10 CFR

50.36, using as a model the accumulation of generically-approved guidance in the improved standard TS (STS), NUREG 1430 Rev. 3.0.

G.2.1.2 Technical Evaluation

The licensee proposed delaying the precision calorimetric heat balance SR to be performed until 7 days after stable thermal conditions are established at greater than or equal to 70 percent rated thermal power (RTP). Babcock & Wilcox Owners Group (B&WOG) ISTS SR 3.4.1.4 NOTE - states that, "Only required to be performed when stable thermal conditions are established in the higher power range of MODE 1."

The purpose of this SR NOTE is to ensure the RCS total flow rate instrumentation is properly calibrated using a precision calorimetric heat balance. At lower power conditions, the thermal power is not stable and a precision calorimetric heat balance could not provide accurate results. The NRC staff requested the licensee to explain why they need 7 days to perform this SR when the plant is at 70 percent RTP and stable conditions were established. In response to the RAI, the licensee revised his proposal to allow 24 hours to perform the precision heat balance after stable thermal conditions are established at greater than or equal to 70 percent RTP. BWOG ISTS SR 3.4.1.4 NOTE does not have any specific requirements. However, the revised proposal is consistent with Westinghouse Owners Group ISTS and Combustion Engineering Owners Group ISTS SR 3.4.1.4 NOTE. The NRC staff finds the revised proposal to perform this SR after 24 hours when the plant stable conditions are established at 70 percent RTP is acceptable. The licensee has reflected this change in the supplement to this section of the ITS Conversion amendment.

G.2.1.3 Conclusion

Based on the NRC staff's review of the licensee's submittal and response to the RAI, the NRC staff finds that the proposed TS change related to BSI-6 is acceptable.

G.2.2 BSI-7: ITS 3.8.1, DOC M06

BSI-7 proposes a change to the CTS by requiring the EDGs to be tested for a longer duration, at higher loading, and within a power factor limit, with an allowance to not meet the load or power factor requirements due to momentary transients (ITS 3.8.1, DOC M06). CST 4.8.1.1.2.d.3 requires verification that the diesel generator operates for ≥ 60 minutes while loaded to ≥2000 kW. ITS SR 3.8.1.13 requires an endurance and load test for each EDG. The endurance and load test requires that the EDGs be operated for ≥ 8 hours, with ≥ 2 hours loaded between 2730 kW and 2860 kW and the remaining 6 hours loaded between 2340 kW and 2600 kW. This Surveillance is modified by Note 1 and Note 3. Note 1 states, "momentary transients outside the load and power factor ranges do not invalidate this test." Note 3 states, "If part b is performed with EDG synchronized with offsite power, it shall be performed within the power factor limit. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable."

G.2.2.1 Regulatory Evaluation

The NRC staff used the following NRC requirements and guidance documents to review the licensee's amendment request:

The regulation in 10 CFR Part 50 requires that TS shall be included by applicants for a license authorizing operation of a production or utilization facility. 10 CFR 50.36(d) requires that TS include items in five specific categories related to station operation. These categories are: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operations; (3) SRs; (4) design features; and (5) administrative controls. The proposed change to the TS (BSI-7) is within the SR category.

Safety Guide 9, March 1971, "Selection of Diesel Generator Set Capacity for Standby Power Supplies" (superseded by NRC RG 1.9) describes an acceptable basis for the selection of diesel generator sets of sufficient capacity and margin to implement General Design Criterion 17 of Appendix A to 10 CFR Part 50.

RG 1.108, August 1977, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power systems at Nuclear Power Plants" dated August 1977 (withdrawn), described a method acceptable to the NRC staff for complying with the Commission's regulations with regard to periodic testing of diesel electric power units. This RG has since been merged into the RG 1.9.

RG 1.9, Revision 3, July 1993, "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power systems at Nuclear Power Plants," describes a method acceptable to the NRC staff for complying with the Commission's regulations with regard to design and testing of diesel generators. This RG is superseded by RG 1.9, Revision 4, March 2007, "Application and Testing of Safety-Related Diesel Generators at Nuclear Power Plants."

G.2.2.2 Technical Evaluation

According to the DBNPS UFSAR, the plant has two EDGs; each EDG has a continuous rating of 2600 kilowatts (kW) @ 0.8 power factor (PF) and a short term rating of 2860 kW @ 0.8 PF. The short-term rating is defined as the electric power capability that the EDG can maintain in the service environment for 2 hours in any 24-hour period.

The CTS SR 4.8.1.1.2.d.3 states as follows:

> Verifying the diesel generator operated for ≥ 60 minutes while loaded to ≥ 2000 kW. This SR is performed once each REFUELING INTERVAL during shutdown.

The proposed ITS SR 3.8.1.13 would read as follows:

> Verify each EDG operates for ≥ 8 hours:
> a. For ≥ 2 hours loaded ≥ 2730 kW and ≤ 2860 kW [105 percent to 110 percent of the EDG continuous rating]; and
> b. For the remaining hours of the test loaded ≥ 2340 kW and ≤ 2600 kW [90 percent to 100 percent of the EDG continuous rating]

The above test is to be performed every 24 months. The following notes are applicable to the above test:

1. Momentary transients outside the load and power factor ranges do not invalidate this test.

2. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.

3. If performed with EDG synchronized with offsite power, it shall be performed within the power factor limit. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.

The power factor limit is specified in the ITS Bases as follows: ≤ 0.90 for part 'a' of the test (when an EDG is tested at load equivalent to 105 percent to 110 percent of the EDG continuous rating); and ≤ 0.85 for EDG 1 and ≤ 0.86 for EDG 2 for part 'b' of the test (when an EDG is tested at load equivalent to 90 percent to 100 percent of the EDG continuous rating). In the TS Bases, it is stated that the power factor is representative of the actual inductive loading an EDG would see under design-basis accident conditions.

When comparing the above ITS SR 3.8.1.13 to the corresponding STS SR 3.8.1.14, the NRC staff identified the following differences:

<u>8 hours versus 24 hours Endurance Run</u>

The CTS SR 4.8.1.1.2.d.3 requires the EDG load surveillance (endurance run) to be performed for a minimum of one hour at least once each refueling interval. The STS SR requires EDGs to be tested for 24 hours, while the proposed ITS SR would require the EDG to be tested for 8 hours. Thus, while the proposed ITS SR is more conservative than the CTS SR, it is less conservative with respect to the STS SR. RG 1.108 (basis for the STS SR) and RG 1.9 (Revisions 3 and 4) recommend a 24-hour EDG endurance run test.

In the license amendment request (LAR), the licensee provided the following justifications for the 8-hour EDG endurance run:

> The purpose of CTS 4.8.1.1.2.d.3 is to ensure the EDG can supply the emergency loads. This change requires the EDGs to be tested at a load range of 105 percent to 110 percent for 2 continuous hours and a load range of 90 percent to 100 percent within the power factor limit, if applicable, for 6 hours, consistent with the recommendations of Institute of Electrical and Electornics Engineers (IEEE) Standard 387-1995. This change is designated as more restrictive because it adds more stringent testing requirements to the CTS.

The NRC staff requested the licensee to provide the maximum design basis EDG loads to ensure the ITS SR endurance run will envelop the maximum design basis loads. In its response dated February 11, 2008, the licensee stated that the maximum expected accident load for

EDG 1 is 2322 kW, which is less than the 90 percent value of the EDG continuous rating. The maximum expected accident load for EDG 2 is 2384 kW, which is approximately 91.7 percent of the EDG continuous rating. The licensee also provided an excerpt from the EDG loading calculation to confirm the above values. In this calculation, the Appendix R loading was shown as 101 percent of the EDG continuous rating. Based on RG 1.9, Revision 3, the NRC staff has typically required that EDG accident loading be less than the continuous rating of EDG, so that the endurance run would provide reasonable assurance that the EDG will be able to supply the accident loads. The NRC staff also observed that the above Appendix R loading of 101 percent was corresponding to a frequency of 61.2 hertz (Hz). In a letter dated June 18, 2008, the NRC staff requested the licensee to explain the discrepancy between this value and the proposed ITS value of 60.5 Hz. In its response dated July 1, 2008, the licensee stated that the maximum Appendix R loading will be 2550 kW corresponding to a frequency of 60.5 Hz, which is less than the continuous rating of the EDG. Considering that the maximum calculated accident loading (including Appendix R loading) will be less than the continuous rating of EDG and the 8-hour endurance run will envelop the postulated loading, the NRC staff finds the EDG kW loading test in the proposed ITS SR 3.8.1.13 to be acceptable.

Based on RG 1.108 (basis for STS SR), and RG 1.9 (Revisions 3 and 4), the NRC staff has required licensees to perform the EDG endurance run for 24 hours. In Revision 4 of RG 1.9, the NRC took exception to the endurance run of 8 hours as specified in IEEE 387-1995. Operating experience indicates that weaknesses in EDG systems can be identified during the 24 hour endurance run. Thus, the NRC staff finds that a 24-hour endurance run can help in the early identification of potential EDG failures and can improve the reliability of an EDG to meet its mission time when required for safe shutdown of the plant. However, the NRC staff also finds that the licensee proposed 8-hour endurance run test is more conservative than the present 1-hour endurance run test specified in the CTS. Therefore, the NRC staff recommends approving the 8-hour EDG endurance run.

Power Factor Limit

Presently, CTS SR 4.8.1.1.2.d.3 does not have any requirement for power factor testing of the EDGs. According to Note 3 of the ITS SR 3.8.1.13, the licensee has proposed to perform the power factor limit test when the EDG is synchronized with offsite power and performing a load test. The proposed power factor limit test requirement in the ITS is similar to the power test requirement in the STS except that the power factor limit value is specified in the ITS Bases. In the LAR, the licensee provided the following justification (JFD # 14) for power factor related deviation from the STS:

> Currently, there are no power factor limit requirements in the CTS. The specific power factor value is included in the ITS Bases and will therefore be controlled under ITS 5.5.13, the TS Bases Control Program. This program provides for the evaluation of changes to ensure the Bases are properly controlled.

The NRC staff finds the proposed power factor limit test acceptable because the test specified in the ITS is more conservative than the CTS, and the proposed power factor values specified in the TS Bases envelop the maximum design-basis accident loads. The power factor limit values: ≤ 0.90 for part 'a' of the test (at load equivalent to 105 percent to 110 percent of the EDG continuous rating); and ≤ 0.85 for EDG 1 and ≤ 0.86 for EDG 2 for part 'b' of the test (at load equivalent to 90 percent to 100 percent of the EDG continuous rating), are also consistent with intent of power factor testing recommended by RG 1.9.

G.2.2.3 Conclusion

The NRC staff has reviewed the licensee's proposed ITS SR 3.8.1.13. Based on the above information, the NRC staff finds the proposed ITS SR 3.8.1.13 acceptable as it is more conservative than CTS SR 4.8.1.1.2.d.3. Furthermore, the proposed ITS SR 3.8.1.13 meets the regulatory intent of 10 CFR 50.36(d).

G.2.3 BSI-8: ITS 5.5.16, DOC A.6

BSI-8 proposes a change to incorporate TSTF-451T, "Correct the Battery Monitoring and Maintenance Program and the Bases of SR 3.8.4.2" (ITS 5.5.16, DOC A.6).

G.2.3.1 Regulatory Evaluation

The following NRC requirements and guidance documents are applicable to the NRC staff's review of the licensee's amendment request:

Part 50 of 10 CFR, Appendix A, GDC 17, "Electric power systems," requires, in part, that "an onsite electric power system and an offsite electric power system shall be provided to permit functioning of structures, systems, and components important to safety ... The onsite electric power supplies, including the batteries, and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure. Electric power from the transmission network to the onsite electric distribution system shall be supplied by two physically independent circuits (not necessarily on separate rights of way) designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions ... Provisions shall be included to minimize the probability of losing electric power from any of the remaining supplies as a result of, or coincident with, the loss of power generated by the nuclear power unit, the loss of power from the transmission network, or the loss of power from the onsite electric power supplies."

GDC 18, "Inspection and testing of electric power systems," requires, in part, that "Electric power systems important to safety shall be designed to permit appropriate periodic inspection and testing of important areas and features ..."

Part 50.36(c)(2)(ii) of 10 CFR, "Technical Specifications," requires that "[a] technical specification limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the [criteria set forth in 10 CFR 50.36(c)(2)(ii)(A)-(D)]."

Part 50.36(c)(3) of 10 CFR, "Technical Specifications," requires that TSs include SRs, which "are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."

Part 50.63 of 10 CFR, "Loss of all alternating current [AC] power," requires, in part, that "Each light-water-cooled nuclear power plant licensed to operate must be able to withstand for a specified duration and recover from a station blackout as defined in §50.2 ..."

Part 50.65(a)(3) of 10 CFR, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," requires, in part, that "Performance and condition monitoring activities and associated goals and preventive maintenance activities shall be evaluated at least every refueling cycle provided the interval between evaluations does not exceed 24 months ... Adjustments shall be made where necessary to ensure that the objective of preventing failures of structures, systems, and components through maintenance is appropriately balanced against the objective of minimizing unavailability of structures, systems, and components due to monitoring or preventive maintenance."

RG 1.32, Revision 3, "Criteria for Power Systems for Nuclear Power Plants," provides guidance for complying with GDCs 17 and 18 with respect to the design, operation, and testing of safety-related electric power systems of all types of nuclear power plants.

RG 1.93, "Availability of Electric Power Sources," describes the operating procedures and restrictions acceptable to the staff which should be implemented if the available electric power sources are less than the LCO.

RG 1.129, Revision 2, "Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants," provides guidance for complying with GDCs 1, 17, and 18 with respect to the maintenance, testing, and replacement of vented lead-acid storage batteries in nuclear power plants.

G.2.3.2 Technical Evaluation

G.2.3.2.1 ITS 3.8.6 Change (1)

The licensee proposed the following:

> Delete TS Table 4.8-1 and relocate the following limits to the Battery Monitoring and Maintenance Program specified in new TS Section 5.5.16:
>
> - Category A and B limits for cell voltage and electrolyte level.
>
> Replace verification requirements for battery cell specific gravity monitoring with float current monitoring requirements.

Evaluation of ITS 3.8.6 Change (1)

TS Table 4.8-1 specifies the battery cell parameter requirements, including electrolyte level, float voltage, and specific gravity. The Category A and B values of TS Table 4.8-1 represent appropriate monitoring levels and appropriate preventive maintenance levels for long-term battery quality and extended battery life. Paragraph 50.36(c)(2)(i) of 10 CFR states, in part "[LCOs] are the lowest functional capability or performance levels of equipment required for safe operation of the facility." As such, the Category A and B values for cell voltage and electrolyte level do not reflect the 10 CFR 50.36 criteria for LCOs. The licensee proposed relocating these parameters and the Required Actions associated with restoration to a licensee-controlled program.

In response to a NRC staff RAI, the licensee provided a Regulatory Commitment to maintain the existing surveillances for the battery parameters (i.e., visual inspection, cell-to-cell connection resistance, specific gravity, etc.) that are to be relocated to the new Battery Monitoring and Maintenance Program. Based on this information, the NRC staff has reasonable assurance that the battery parameter values will continue to be controlled at their current level, and that actions to restore deficient values will be implemented in accordance with the licensee's corrective action program. Furthermore, the battery and its preventive maintenance and monitoring program are under the regulatory requirements of 10 CFR 50.65. The relocation of the aforementioned battery parameters will continue to assure that the battery is maintained at current levels of performance, and that operators continue to monitor the battery parameters for degradation.

The licensee also proposed relocating the Category B specific limiting values of TS Table 4.8-1 for the battery electrolyte level and temperature to a licensee-controlled program (TS 5.5.16). However, new TS 3.8.6, Conditions C and D, will require the electrolyte temperature (pilot cell only) and level (any battery cell) to be greater than or equal to minimum established design limits. The licensee proposed relocating the electrolyte temperature and level criteria (i.e., the minimum established design limits) to the DBNPS TS Bases. Depending on the available excess capacity of the associated battery, the minimum temperature necessary to support operability of the battery can vary. Relocating these values to a licensee-controlled program will provide the licensee with added flexibility to monitor and control this limit at values directly related to the battery's ability to perform its assumed function. The NRC staff concludes that the Category B specific limiting values for TS Table 4.8-1 for the battery electrolyte level and temperature do not meet the criteria of 10 CFR 50.36(c)(2)(ii) for inclusion in the TSs and may be relocated to a licensee-controlled program. Therefore, the NRC staff finds that these changes are acceptable.

The licensee proposed replacing the requirements to measure battery cell specific gravity with requirements to monitor float current. In response to a RAI, the licensee provided a letter from its battery manufacturer (GNB Industrial Power), which concurred with the use of float current monitoring for the purpose of determining the state of charge of the DBNPS batteries. The licensee also provided a Regulatory Commitment to maintain a 5 percent recharge margin for each battery to ensure that the 2-amp float current value provides an indication that the battery is fully charged (i.e., fully capable of performing its design function). The licensee stated that a 95 percent charged battery represents a fully charged battery at DBNPS. In response to a RAI, the licensee indicated that the proposed 2-amp float current value equates to a 95 percent charged battery on the battery manufacturer's recharge curve. The licensee further noted that the battery manufacturer previously performed testing in support of a prior license amendment request that demonstrated that the 2-amp float current equates to a 95 percent charged battery.

The licensee stated that the equipment that will be used to monitor float current will have the necessary accuracy and capability to measure electrical currents in the expected range. The licensee stated that it has successfully performed testing that demonstrated the accuracy and capability of the equipment. Based on its review, the NRC staff has reasonable assurance that the equipment for monitoring battery float current will have the necessary accuracy and capability to measure electrical currents in the expected range.

The NRC staff finds that the concurrence of the battery manufacturer, the Regulatory Commitment to maintain a 5 percent recharge margin, and the demonstrated accuracy and capability of the float monitoring equipment provides reasonable assurance that the deletion of the requirement to monitor specific gravity will not have a significant impact on safety or the ability to accurately determine the operability of the DBNPS batteries.

The proposed changes discussed above ensure the battery parameters (maintenance, testing, and monitoring) are performed in accordance with the "Battery Monitoring and Maintenance Program," as specified in TS Section 5.5.16. The NRC staff concludes that there is reasonable assurance that safe plant conditions will continue to be maintained; therefore, the proposed changes are acceptable.

G.2.2.2.2 ITS 3.8.6 Change (2)

The licensee proposed adding new TS 3.8.6. The new Conditions, with their associated Required Actions, provide compensatory actions for specific abnormal battery conditions, as follows:

> Condition A addresses the situation in which one or more batteries have one or more battery cells with a float voltage less than or equal to 2.07 volts (V).
>
> Condition B addresses the situation in which one or more batteries are found with a float current greater than 2 amps.
>
> Condition C addresses the situation in which one or more batteries have one or more cells with electrolyte level less than the minimum established design limits.
>
> Condition D addresses the situation in which one or more batteries are found with pilot cell electrolyte temperature less than minimum established design limits.
>
> Condition E addresses the situation in which batteries in redundant trains are found with battery parameters not within limits.
>
> Condition F addresses the situation in which Required Action and associated Completion Time (CT) of Condition A, B, C, D, or E are not met, OR one or more cells with float voltage less than or equal to 2.07 V and float current greater than 2 amps, OR SR 3.8.6.6 is not met.

The licensee also proposed adding the following SRs to TS 3.8.6:

> SR 3.8.6.1 requires verification that float current for each battery is less than or equal to 2 amps every 7 days.
>
> SR 3.8.6.2 requires verification that each battery pilot cell voltage is greater than 2.07 V every 31 days.
>
> SR 3.8.6.3 requires verification that each battery connected cell electrolyte level is greater than or equal to minimum established design limits every 31 days.
>
> SR 3.8.6.4 requires verification that each battery pilot cell temperature is greater than or equal to minimum established design limits every 31 days.

SR 3.8.6.5 requires verification that each battery connected cell voltage is greater than 2.07 V every 92 days.

SR 3.8.6.6 requires verification that the battery capacity is greater than or equal to 80 percent of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test every 60 months AND 12 months when the battery shows degradation, or has reached 85 percent of the expected life with capacity less than 100 percent of the manufacturer's rating, AND 24 months when battery has reached 85 percent of the expected life with capacity greater than or equal to 100 percent of the manufacturer's rating.

Evaluation of ITS 3.8.6 Change (2)

The licensee proposed adding new TS 3.8.6, Condition A to address what was formerly the Category B limit for float voltage in TS Table 4.8-1. This new Condition would be applicable when one or more batteries is found with one or more battery cells with a float voltage less than or equal to 2.07 V. Once Condition A has been entered, the battery cell is considered degraded and the Required Actions are to: (A.1) verify within 2 hours that the battery terminal voltage is greater than or equal to the minimum established float voltage (SR 3.8.4.1), (A.2) verify within 2 hours that each battery's float current is less than or equal to 2 amps (SR 3.8.6.1), and (A.3) restore affected cell voltage to greater than 2.07 V. The above actions ensure that the battery has adequate capacity to perform its intended function. Continued operation for up to 24 hours is proposed to allow the restoration of the affected cells' voltage to greater than or equal to 2.07 V. The NRC staff considers that the 24-hour restoration time is reasonable, that it maintains safe plant conditions and, therefore, is acceptable.

The licensee proposed adding new TS 3.8.6, Condition B to address battery state of charge. This new Condition would be applicable when one or more batteries are found with a float current greater than 2 amps. A float current of greater than 2 amps provides an indication that a partial discharge has occurred. The Required Actions are: (B.1) verify within 2 hours that the battery terminal voltage is greater than or equal to the minimum established float voltage (SR 3.8.4.1), thus confirming battery charger operability, and (B.2) restore battery float current to less than or equal to 2 amps. If the terminal voltage is satisfactory and there are no battery cells with a voltage less than 2.07 V, Required Action B.2 of Condition B assures that within 12 hours the battery will be restored to its fully-charged condition from any discharge that might have occurred due to a temporary loss of the battery charger.

If the terminal voltage is found to be less than the minimum established float voltage, it indicates that the battery charger is either inoperable or is operating in the current limit mode. If the battery charger is operating in the current limit mode for 2 hours, it is an indication that the battery has been substantially discharged and likely cannot perform its required design functions.

If the float voltage is found to be satisfactory, but there are one or more battery cells with a float voltage less than or equal to 2.07 V, the associated "OR" statement in the revised Condition F of TS 3.8.6 would be applicable, and the battery must immediately be declared inoperable. If float voltage is satisfactory and there are no cells less than or equal to 2.07 V, and the out-of-limit float current condition is due to one or more battery cells with low voltage, then the battery is not substantially discharged. For this condition, the NRC staff finds that the 12-hour CT to restore battery float current to within limits is reasonable. The NRC staff concludes that adding new TS 3.8.6, Condition B is reasonable, maintains safe plant conditions and, therefore, is acceptable.

The licensee proposed adding new TS 3.8.6, Condition C to address the electrolyte level in a cell. This new Condition would be applicable when one or more batteries are found with one or more cells with an electrolyte level less than the minimum established design limits. If the level is above the top of the battery cell plates, but below the minimum limit (i.e., minimum level indication mark on the battery cell jar), the battery still has sufficient capacity to perform its intended safety function and is considered operable. With the electrolyte level below the top of the plates, there is a potential for dry-out and plate degradation. New Required Actions C.1, C.2, and C.3 (as well as provisions in new TS 5.5.16) restore the electrolyte level, ensure that the cause of the loss of the electrolyte is not due to a leak in the battery cell jar, and equalize and test the affected battery. The NRC staff concludes that these changes are adequate to ensure that minimum electrolyte levels are maintained and, therefore, are acceptable.

The licensee proposes to add new TS 3.8.6, Condition D which applies to a battery found with a pilot cell electrolyte temperature less than the minimum established design limit. This new Condition would be applicable when one or more batteries have a pilot cell electrolyte temperature less than minimum established design limits. A low electrolyte temperature limits the current and power available from the battery.

During its review, the NRC staff requested that the licensee provide assurance that a battery with a battery pilot cell electrolyte temperature slightly greater than or equal to the minimum established design limit will remain capable of performing its minimum design function. In responding to the RAI, the licensee stated that the 5°F temperature deviation criteria, as specified in industry guidance documents, cannot always be demonstrated. As a result, the licensee has provided a Regulatory Commitment to use individual cell temperature as one of the criteria for selecting pilot cells or a separate pilot cell will be selected to reflect average battery temperature. Based on this information, the NRC staff concludes that the pilot cell temperature will provide an accurate representation of the temperature of the battery bank. The 12-hour CT provides a reasonable time to restore the electrolyte temperature within established limits. The NRC staff concludes that the proposed change is adequate to ensure that the minimum electrolyte temperature is maintained and, therefore, is acceptable.

The licensee proposed adding new TS 3.8.6, Condition E to address the condition where two or more redundant train battery parameters are not within limits. If this condition exists, there is not sufficient assurance that the batteries will be capable of performing their intended safety function. With redundant batteries involved, multiple systems that rely on DC power could be affected. The licensee proposed that battery parameters for the affected battery in one train be restored to within limits within 2 hours. The NRC staff finds that the proposed change is reasonable, maintains safe plant conditions and, therefore, is acceptable.

The licensee proposed adding new TS 3.8.6, Condition F to provide a default condition for battery parameters that fall outside the allowance of the Required Actions for Condition A, B, C, D, or E. Under this condition, it is assumed that sufficient capacity is not available to supply the maximum expected load requirements. New Condition F also addresses the case where one or more batteries is found with one or more battery cells that have a float voltage less than or equal to 2.07 V and a float current greater than 2 amps. The NRC staff concludes that the proposed change is reasonable, maintains safe plant conditions and, therefore, is acceptable.

The licensee proposed adding new SR 3.8.6.1, which will require verification that the float current for each battery is less than or equal to 2 amps every 7 days. The purpose of this SR is to determine the state of charge of the battery. Float charge is the condition in which the battery charger is supplying the continuous small amount of current (i.e., less than 2 amps) required to overcome the internal losses of a battery to maintain the battery in a fully charged state. The float current requirements are based on the float current indicative of a charged battery, as specified by the battery manufacturer. As stated in the evaluation of TS 3.8.6 change (1) above, the use of float current to determine the state of charge of the battery is consistent with DBNPS's battery manufacturer recommendations. Therefore, the NRC staff concludes that this change is reasonable, maintains safe plant conditions and, therefore, is acceptable.

The licensee proposed adding new SR 3.8.6.2 and SR 3.8.6.5, which will require verification that the float voltage of pilot cells and all connected cells are greater than 2.07 V every 31 and 92 days, respectively. This voltage level represents the point where battery operability is in question. The Battery Monitoring and Maintenance Program (new TS Section 5.5.16) includes actions to restore battery cells with float voltage less than 2.13 V and actions to verify that the remaining cells are greater than 2.07 V when a cell or cells have been found to be less than 2.13 V. The NRC staff concludes that these changes are reasonable, maintain safe plant conditions and, therefore, are acceptable.

The licensee proposed adding SR 3.8.6.3, which will require verification that the electrolyte level of each connected cell of each battery is greater than or equal to the minimum established design limits every 31 days. Operation of the batteries at electrolyte levels greater than the minimum established design limit ensures that the battery plates do not suffer physical damage and continue to maintain adequate electron transfer capability. The NRC staff concludes that this change will ensure that minimum electrolyte levels are maintained and, therefore, is acceptable.

The licensee proposed adding SR 3.8.6.4, which will require verification that the temperature of each battery pilot cell is greater than or equal to the minimum established design limits every 31 days. As mentioned previously, the licensee has provided a Regulatory Commitment to use cell temperature as one of the criteria for selecting pilot cells or a separate pilot cell will be selected to reflect average battery temperature. Based on this information, the NRC staff concludes that the pilot cell temperature will provide an accurate representation of the temperature of the battery bank. Therefore, the NRC staff concludes that this change is adequate to ensure that the minimum electrolyte temperature is maintained and, therefore, is acceptable.

The licensee proposed relocating existing SR 4.8.2.3.2.e to SR 3.8.6.6. This SR will continue to require verification that the battery capacity is greater than or equal to 80 percent of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test (1) every 60 months, AND (2) 12 months when the battery shows degradation, or has reached 85 percent of the expected life with capacity less than 100 percent of the manufacturer's rating, AND (3) 24 months when battery has reached 85 percent of the expected life with capacity greater than or equal to 100 percent of the manufacturer's rating. The NRC staff finds that this change is administrative in nature, and therefore, is acceptable.

G.2.2.2.3 ITS 3.8.6 Change (3)

The licensee proposed creating a new program, called the "Battery Monitoring and Maintenance Program," in new TS Section 5.5.16. This program will have elements relocated from the different affected TSs. The program will be specified in the TSs as follows:

5.5.16 Battery Monitoring and Maintenance Program

This Program provides for restoration and maintenance, which includes the following:

a. Actions to restore battery cells with float voltage < 2.13 V;

b. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates; and

c. Actions to verify that the remaining cells are > 2.07 V when a cell or cells have been found to be < 2.13 V.

Evaluation of ITS 3.8.6 Change (3)

The licensee proposed adding a new program, the Battery Monitoring and Maintenance Program, to be specified in new TS Section 5.5.16. The NRC staff understands that the licensee plans to use the recommendations provided in the Institute of Electrical and Electronics Engineers (IEEE) Standard (Std.) 450-1995, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," to develop the proposed battery monitoring and maintenance program prescribed by new TS 5.5.16. However, the staff would like to note that this version of IEEE Std. 450 has not been officially endorsed by the NRC.

As noted above, the licensee provided a Regulatory Commitment to maintain the existing surveillances for the battery parameters (i.e., visual inspection, cell-to-cell connection resistance, specific gravity, etc.) that are to be relocated to the new Battery Monitoring and Maintenance Program.

Based on the above, the staff has reasonable assurance that the battery parameter values will continue to be controlled at their current level, and actions to restore deficient parameters will be implemented in accordance with the licensee's corrective action program. Furthermore, the battery and its preventive maintenance and monitoring program continue to be subject to the regulatory requirements of 10 CFR 50.65.

The staff concludes that this change will continue to assure the battery is maintained at current levels of performance, and appropriately focuses operators on the monitoring of battery parameter degradations and, therefore, is acceptable.

G.2.3 <u>Conclusion</u>

Based on the above evaluation and the Regulatory Commitments listed below, the staff finds the proposed revisions to the DBNPS TSs provide reasonable assurance of the continued availability of the required AC and DC power to shut down the reactor and to maintain the reactor in a safe condition after an anticipated operational occurrence or a postulated DBA. The staff also concludes that the proposed TS changes are in accordance with 10 CFR 50.36, 10 CFR 50.65, and the requirements of GDCs 17 and 18. Therefore, the NRC staff finds the proposed changes acceptable.

G.2.4 BSI-9: ITS 3.2.5, DOC L02

BSI-9 proposes a change to the CTS by extending the Completion Time of the High Flux and Flux-ΔFlux-Flow trip setpoints from 4 hours to 10 hours (ITS 3.2.5, DOC L02). CTS 3.2.2 Action A states the High Flux and Flux-ΔFlux-Flow trip setpoints must be reduced 1 percent for each 1 percent Nuclear Heat Flux Hot Channel Factor exceeds its limit within 4 hours. CTS 3.2.3 Action A states the High Flux and Flux-ΔFlux-Flow trip setpoints must be reduced to 1 percent for each 1 percent Nuclear Enthalpy Rise Hot Channel Factor exceeds its limit within 4 hours. ITS 3.2.5 Required Actions A.2 and B.2 requires the trip setpoints to be reduced similarly within 10 hours.

G.2.4.1 Regulatory Evaluation

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The licensee provides TSs in order to maintain the operational capability of structures, systems and components that are required to protect the health and safety of the public. The Commission's regulatory requirements that are related to the content of the TSs are contained in 10 CFR 50.36, "Technical Specifications." The TS requirements in 10 CFR 50.36 include the following categories: (1) safety limits, limiting safety systems settings and control settings; (2) LCO; (3) SR; (4) design features; and (5) administrative controls.

A holder of a license may amend the license (including the TSs) pursuant to 10 CFR 50.90, "Application for amendment of license or construction permit." In general, there are two classes of changes to TSs: (1) changes needed to reflect modifications to the design basis (TSs derived from the design basis), and (2) voluntary changes to take advantage of the evolution in policy and guidance as to the required content and preferred format of TSs over time. This amendment deals primarily with the second class of changes. In determining the acceptability of such changes, the NRC staff interprets the requirements of the current version of 10 CFR 50.36, using as a model the accumulation of generically approved guidance in the improved standard TS (STS), Rev. 3.0.

The NRC staff also applied the following regulatory requirements in reviewing the application:

General Design Criterion 15, as it relates to the reactor coolant system and associated auxiliary, control, and protection systems being designed with sufficient margin to assure that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences.

G.2.4.2 Technical Evaluation

The licensee proposes to increase the Completion Time to reduce the High Flux and Flux-ΔFlux-Flow trip setpoints when either power peaking factors (F_Q or $F^N_{\Delta H}$) are outside of its limits. The power peaking factors establish limits that constrain the core power distribution within design limits during normal operation and during anticipated operational occurrences such that accident initial condition protection criteria are preserved. The accident initial condition criteria are preserved by bounding operation at thermal power within specified acceptable fuel design limits. The F_Q limit is a specified acceptable fuel design limit that preserves the initial conditions for the ECCS analysis. The $F^N_{\Delta H}$ limit is a specified acceptable fuel design limit that preserves the initial conditions for the limiting loss of flow transient.

The CTS states the High Flux and Flux-ΔFlux-Flow trip setpoints must be reduced 1 percent for each 1 percent F_Q exceeds its limit within 4 hours. Also, the CTS states that the High Flux and Flux-ΔFlux-Flow trip setpoints must be reduced 1 percent for each 1 percent $F^N_{\Delta H}$ exceeds its limit within 4 hours. ITS 3.2.5 Required Actions A.2 and B.2 requires the trip setpoints to be reduced similarly within 10 hours. This proposed change is similar to BSI-4, ITS 3.4.4, RCS Loops - MODES 1 and 2 in which to increase the Completion Time to 10 hours for reducing the High Flux trip setpoint.

Based on the similar proposed changes in BSI-4, ITS 3.4.4 and the NRC staff's evaluation, an increase of the Completion Time to 10 hours is consistent with safe operation under the specified Condition, considering the operability status of the redundant systems of required features, the capacity and capability of remaining features, a reasonable time for repairs or replacement of required features, and the low probability of an accident occurring during the allowed Completion Time. The NRC staff also evaluated ITS Table 3.3.1-1, "Reactor Protection System Instrumentation" Functions to ensure that they provided the same level of protection as the STS Table 3.3.1-1, "Reactor Protection System Instrumentation" Functions. The NRC staff found the two tables to be consistent and provide the same level of protection. Therefore, the NRC staff finds the proposed changes acceptable.

G.2.4.3 Conclusion

Based on a review of the information that was provided and as discussed in the Technical Evaluation Section, the NRC staff has determined that the proposed changes are appropriate. The proposed changes are consistent with NRC practices and policies and therefore, the NRC staff has determined that the proposed changes should be approved.

The Commission has also concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

G.2.5 BSI-13: ITS 3.3

BSI-13 proposes the following changes related to draft TSTF-493:

a. Adds Footnotes (c) and (d) to ITS Table 3.3.1-1 Functional Unit 1a (ITS 3.3.1, Attachment 1 Volume 8, page 43 of 636 of application).

b. Allows Method 1 or Method 2 of ISA 67.04-Part II - 1994 or ISA 67.04.02 - 2000 for all RPS Functional Units in the ITS Bases (ITS 3.3.1 Attachment 1 Volume 8, page 59 of 636 of application).

c. Allows modification to where the Nominal trip setpoints are specified in the TS Bases (ITS 3.3.1 Attachment 1 Volume 8, pages 60 and 62 of 636 of application).

d. Adds a statement concerning setpoint methodology to the Bases in the ITS (ITS 3.3.1 Attachment 1 Volume 8, pages 81-84 of 636 of application).

e. Allows Method 1 or Method 2 of ISA 67.04-Part II - 1994 or ISA 67.04.02 - 2000 for all Safety Features Actuation System (SFAS) Functional Units in the ITS Bases (ITS 3.3.5 Attachment 1 Volume 8, page 209 of 636 of application).

f. Allows Method 1 or Method 2 of ISA 67.04-Part II - 1994 or ISA 67.04.02 - 2000 for all Steam/Feedwater Rupture Control System (SFRCS) Functional Units in the ITS Bases (ITS 3.3.11 Attachment 1 Volume 8, pages 394-395 of 636 of application).

G.2.5.1 Regulatory Evaluation

The regulatory requirements and guidance which the NRC staff considered in its review of the application are as follows:

Part 50 of 10 CFR establishes the fundamental regulatory requirements with respect to the domestic licensing of nuclear production and utilization facilities. Specifically, Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 provides, in part, the necessary design, fabrication, construction, testing, and performance requirements for structures, systems, and components important to safety.

GDC - 10, "Reactor design," requires that the reactor core and associated coolant, control, and protection systems be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences.

GDC - 13, "Instrumentation and control," requires that instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges.

GDC - 20, "Protective system functions," requires the protection system be designed (1) to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and to initiate the operation of systems and components important to safety.

Section 50.36 of 10 CFR - "Technical Specifications," states, "Each applicant for a license authorizing operation of a production or utilization facility shall include in his application proposed technical specifications in accordance with the requirements of this section."

Specifically, 10 CFR 50.36(c)(1)(ii)(A) requires in part, where a limited safety system setting (LSSS) is specified for a variable on which a safety limit has been placed, the setting must be so chosen that automatic protective action will correct the abnormal situation before a safety limit is exceeded.

Additionally, 10 CFR 50.36(c)(3) requires, surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that limiting conditions for operation will be met.

RG 1.105, "Setpoints for Safety-Related Instrumentation," describes a method acceptable to the NRC staff for complying with the NRC's regulations for ensuring that setpoints for safety-related instrumentation are initially within and remain within the TS limits.

RIS 2006-17, "A NRC Staff Position on the Requirements of 10 CFR 50.36 regarding Limiting Safety System Settings during Periodic Testing and Calibration of Instrument Channels," dated August 24, 2006 provides additional clarification on the requirements of 10 CFR 50.36.

G.2.5.2 Technical Evaluation

The licensee proposed the inclusion of information in the ITS TS and Bases that was not included in the CTS or the ISTS. The issues related to this information have been classified as out of scope issues (OSIs). For each OSI, the NRC staff asked a question and the licensee provided a response. The questions and responses have been included in the NRC/Davis-Besse ITS Conversion website. EICB reviewed the licensee responses for OSIs 22, 23, 25, 29, 46, and 64.

G.2.5.2.1 OSI 22 (20071160953)

Footnotes (c) and (d) apply to ITS SR 3.3.1.5 and SR 3.3.1.7 for ITS RPS Table 3.3.1-1 Function 5, Reactor Coolant (RC) Pressure-Temperature [CTS Table 4.3-1 Note 10 for CTS Function 7, RC Pressure-Temperature]. The licensee proposed that Footnotes (c) and (d) also apply to ITS SR 3.3.1.3 for ITS Table 3.3.1-1, Function 1.a, High Flux High Setpoint [CTS Table 4.3-1 Function 2, High Flux].

The purpose of Footnotes (c) and (d) is to follow RIS 2006-17, for limiting safety system settings (LSSSs) that protect the safety limit. The footnotes provide measures to be taken to assess the operability of LSSS instrumentation that protect the safety limit. These footnotes are only being applied to LSSSs that protect a safety limit and are being revised. The application of Footnotes (c) and (d) to ITS SR 3.3.1.3 for ITS Table 3.3.1-1, Function 1.a, High Flux High Setpoint is in accordance with 10 CFR 50.36 and is, therefore, acceptable.

G.2.5.2.2 OSI 23 (200711160956)

The licensee proposed that ITS Bases B 3.3.1 describing Trip Setpoint/Allowable Values include the statement, "The trip Setpoint is established using Method 1 or Method 2 of Reference 6 [ISA 67.04-1994] or Reference 7 [ISA 67.04-2000.]" CTS Bases 3/4.3.1 and 3/4.3.2 state that except for CTS RPS Table 4.3-1, Function 7, RC Pressure-Temperature, "Only the Allowable Value is specified for each Function," without providing details about the methodology used to determine the Allowable Value. For CTS Table 4.3.1 Function 7, the Bases for CTS 3/4.3.1 and 3/4.3.2 state, "The Limiting Trip Setpoint is specified in the USAR Technical Requirements Manual and the Limiting Trip Setpoint may be established using Method 1 or Method 2 ..."

ISA 67.04-1994 is endorsed by RG 1.105. ITS Bases B 3.3.1 provides the methodology used for all ITS 3.3.1 setpoints and Allowable Values. This information is more explicit than the information in the CTS Bases. Therefore, the inclusion of, "The trip Setpoint is established using Method 1 or Method 2 of Reference 6 [ISA 67.04-1994] or Reference 7 [ISA 67.04-2000.]," in ITS Bases B 3.3.1 is acceptable.

G.2.5.2.3 <u>OSI 25 (200711160940)</u>

The licensee proposed that ITS Bases B 3.3.1 include additional information concerning ITS RPS Table 3.3.1-1 Function 1.a, High Flux High Setpoint and Function 5, RC Pressure - Temperature, related to Footnotes (c) and (d). For these two functions, ITS Bases B 3.3.1 includes information that the Limiting Trip Setpoint, the methodology used to determine the Limiting Trip Setpoint, the pre-defined as-found acceptance criteria, and the as-left tolerance, are specified in the Technical Requirements Manual.

The ITS Bases B 3.3.1 statements on pages B 3.3.1-11 and B 3.3.1-12 provide additional information concerning ITS Table 3.3.1-1, Function 1.a and Function 5, related to Footnotes (c) and (d). For these two functions, the inclusion, in ITS Bases B 3.3.1, of information that the Limiting Trip Setpoint, the methodology used to determine the Limiting Trip Setpoint, the pre-defined as-found acceptance criteria, and the as-left tolerance, are specified in the Technical Requirements Manual, follows the recommendations of RIS 2006-17.

G.2.5.2.4 <u>OSI 29 (200711161018)</u>

The licensee proposed adding a description of how ITS RPS SR 3.3.1.5 and SR 3.3.1.7 Footnotes (c) and (d) are applied for ITS Table 3.3.1-1 Function 5, RC Pressure-Temperature. Although this detailed information is not included in CTS Bases 3/4.3.1 and 3/4.3.2, this information provides greater detail than CTS Bases 3/4.3.1 and 3/4.3.2, is consistent with the goal of RIS 2006-17, and is, therefore, acceptable.

G.2.5.2.5 <u>OSI 46 (200711161110)</u>

For ITS Safety Features Actuation System (SFAS) Table 3.3.5-1 functions, ITS Bases B 3.3.5 states, "The trip setpoint is established using Method 1 or Method 2 ..." CTS Bases 3/4.3.1 and 3/4.3.2 state that for CTS SFAS Table 3.3-4, "Only the Allowable Value is specified for each Function," without providing details about the methodology used to determine the Allowable Values. The information in ITS Bases B 3.3.5 is more explicit than the information in CTS Bases 3/4.3.1 and 3/4.3.2, and is, therefore, acceptable.

G.2.5.2.6 <u>OSI 64 (200801101044)</u>

For the ITS Steam and Feedwater Rupture Control System (SFRCS) Table 3.3.11-1 functions, ITS Bases B 3.3.11 states, "The trip setpoint is established using Method 1 or Method 2 ..." CTS Bases 3/4.3.1 and 3/4.3.2 states that for CTS SFRCS Table 3.3-12, Function 2, Steam Generator Level-Low, "Only the Allowable Value is specified for each Function," without providing details about the methodology used to determine the Allowable Value. The information in ITS Bases B 3.1.11 is more explicit than the information in CTS Bases 3/4.3.1 and 3/4.3.2, and is, therefore, acceptable.

G.2.5.3 Conclusion

The NRC staff has reviewed the above stated OSIs related to TS changes in the ITS conversion of the DBNPS. Based on its review of the licensee's submittal and responses to the RAIs, the NRC staff finds that the proposed TS changes related to the above stated OSIs are acceptable.

G.2.6 BSI-19: ITS 3.3.15

BSI-19 proposes the following changes concerning the Containment Purge and Exhaust Isolation TSs:

a. Adds the term "recently" to modify the APPLICABILITY of LCO 3.3.15 (ITS 3.3.15 DOC L01).

b. Adds the term "when the Containment Purge and Exhaust System is in service" to the APPLICABILITY of ITS LCO 3.3.15 (ITS 3.3.15 Attachment 1 Volume 8, page 500 of 636 of application).

c. Removes the STS calibration data in ITS LCO 3.3.15 (ITS 3.3.15 DOC M02).

d. Revises the TS Bases discussion in the STS concerning LCO 3.3.15 (ITS 3.3.15 Attachment 1 Volume 8, page 504 of 636 of application).

e. Revises the TS Bases discussion with respect to the CTS and STS concerning LCO 3.9.4 (ITS 3.3.15 Attachment 1 Volume 8, page 507 of 636 of application).

f. Revises the surveillance requirements associated with the containment purge and exhaust system radiation monitors (ITS 3.3.15 DOC M02).

G.2.6.1 Regulatory Evaluation

Section 50.36(d)(2)(i) of 10 CFR states "limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility."

Section 50.36(d)(2)(ii) of 10 CFR further states "a technical specification limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the following criteria:

Criterion 1: Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Criterion 2: A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 3: A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4: A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety."

G.2.6.2 Technical Evaluation

One function of the containment is to minimize the release of fission product radioactivity to the environment as a result of fuel element rupture. CTS LCO 3/4.9.4, "Containment Penetrations" is applicable during core alterations or movement of irradiated fuel within the containment. The only accident postulated to occur during core alterations that results in a significant radioactive release is the fuel handling accident. However, containment isolation is not assumed in the fuel handling accident inside containment as documented in UFSAR Section 15.4.7 and Table 15.4.7-4a. Therefore the deletion of CTS LCO 3/4.9.4 from the TS is acceptable.

G.2.6.3 Conclusion

The NRC staff reviewed BSI-19 related to a TS change in the ITS conversion of the DBNPS. Based on its review of the licensee's submittal and response to the NRC staff's questions, the NRC staff finds that the proposed TS change related to BSI-19 is acceptable.

G.2.7 BSI-21: ITS 3.3.16 DOC M03 and ITS 3.7.10 DOC M012

BSI-21 proposes to deviate from the STS by not placing the Control Room Emergency Ventilation System in operation during the movement of irradiated fuel for an inoperable channel, and not immediately suspending irradiated fuel movements if two channels are inoperable and compensatory actions are not immediately carried out (ITS 3.3.16 DOC M03 and ITS 3.7.10 DOC M012).

G.2.7.1 Regulatory Evaluation

This safety evaluation input discusses the impact of the proposed changes on the previously analyzed radiological consequences of design-basis accidents. The regulatory requirements against which the Accident Dose Branch (AADB) performed its review of the licensee's current request are the accident dose criteria in 10 CFR 100.11 and 10 CFR Part 50 Appendix A, GDC 19, "Control room." The AADB staff also considered the relevant information in the DBNPS UFSAR.

The regulatory requirements and guidance which the Containment and Ventilation Branch staff considered in its review of the application are as follows:

Part 50 of 10 CFR establishes the fundamental regulatory requirements with respect to the domestic licensing of nuclear production and utilization facilities. Specifically, Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 provides, in part, the necessary design, fabrication, construction, testing, and performance requirements for structures, systems, and components important to safety.

Paragraph 50.36(d)(2)(ii) of 10 CFR, "Technical specifications," requires that a technical specification LCO of a nuclear reactor must be established for each item meeting one or more of the criteria set forth in 10 CFR 50.36(d)(2)(ii)(A)-(D).

Paragraph 50.36(d)(3) of 10 CFR, "Technical specifications," requires that TSs include Surveillance Requirements (SRs), which "are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."

Section 50.59 of 10 CFR, "Changes, Tests, and Experiments".

Appendix "A" of Part 50 of 10 CFR, "General Design Criteria for Nuclear Power Plants",

GDC 19, "Control Room", provides for a control room from which actions can be taken to maintain the nuclear power plant in a safe condition under accident conditions.

GDC 60, "Control of Releases of Radioactive Materials to the Environment", requires the means to control the release of radioactive materials in gaseous and liquid effluents.

GDC 64, "Monitoring Radioactivity Releases", requires means for monitoring effluent discharge paths for radioactivity that may be released from normal operations, including anticipated operational occurrences, and from postulated accidents.

Part 100.11 of 10 CFR, "Determination of the exclusion area, low population zone, and population center distance." This regulation provides requirements for the protection of an individual located on the plant's boundary for two hours immediately following onset of the postulated fission product release.

NUREG-0800, Standard Review Plan Section 15.7.4, "Radiological Consequences of Fuel Handling Accidents"

NUREG-1430, Revision 3.0, "Standard Technical Specifications Babcock and Wilcox Plants"

Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments"

Regulatory Guide 1.195, "Methods and Assumptions for Evaluating Radiological Consequences of Design Basis Accidents at Light-Water Nuclear Power Reactors"

G.2.7.2 Technical Evaluation

UFSAR Section 15.4.7 describes that the control room (CR) is assumed to be isolated during a fuel handling accident (FHA). The FHA radiological consequences analysis, both inside and outside of containment, assumes the Control Room Normal Ventilation System is isolated by the Station Vent Normal Range Radiation Monitoring high radiation signal. The purpose of ITS 3.3.16 is to provide assurance that the Station Vent Normal Radiation Monitoring Instrumentation is operable when required to perform its function.

ISTS LCO 3.3.16 includes a requirement to have one channel of Control Room Isolation-High Radiation operable. However, the number of channels "One" is bracketed. CTS 3/4.7.6.1 requires two channels to be operable, therefore, the licensee changed the required number of channels in ITS LCO 3.3.16 from "One" to "Two" channels. The ISTS 3.3.16 Actions only include an action (Action A) for one channel inoperable. As a result, the licensee modified the Actions to reflect the current licensing basis (CLB) (CTS 3.7.6.1 Actions B and C). The licensee stated that the requirement to "Isolate the Control Room Normal Ventilation System" has been added as Required Action A.1 in order to be consistent with the current requirements.

The Completion Time of Required Action A.1 has been extended from 1 hour to 7 days and a new Action (ITS 3.3.16 Action B) has been added. The licensee states that because the Control Room Emergency Ventilation System (CREVS) is not required to be operable during movement of irradiated fuel assemblies, it added Required Actions A.2 and B.2 to only require CREVS to be placed in operation in MODES 1, 2, 3, and 4 which is consistent with the requirements for the CREVS. The ISTS Required Action D.1 has not been included for this same reason.

The NRC staff finds that the licensee's proposed changes, as described above, are consistent with the CLB. The current DBNPS FHA radiological consequence analysis remains unaffected by the proposed changes. Therefore, the NRC staff concludes that these changes are acceptable with respect to the radiological consequences of design-basis accidents.

The licensee proposed in Technical Specification 3.3.16, "Station Vent Normal Range Radiation Monitoring", REQUIRED ACTION B.1, (for two channels of normal station vent radiation monitors inoperable), "isolate the control room normal ventilation system" with a completion time of one hour. The licensee also proposed a new REQUIRED ACTION D.1, immediate suspension of irradiated fuel assembly movement if Condition A or B are not met.

The NRC staff requested clarification regarding the difference between the proposed TS and NUREG-1430, Revision 3.0 (B&W Plants STS) model for TS 3.3.16 which does not permit any grace time to return at least one channel to operability but instead requires immediately placing one OPERABLE CREVS train in emergency operation mode OR immediate suspension of the movement of irradiated fuel. This was a concern since the licensee is adopting the use of the term "recently irradiated" for fuel that has occupied part of a critical reactor core within the previous 72 hours. In addition, the licensee has proposed to remove current TS 3.9.3, "Decay Time", which requires the reactor to be subcritical 72 hours before spent fuel movement of irradiated fuel in the reactor pressure vessel.

The licensee responded on 5/29/2008:

> The current licensing basis at Davis-Besse, as shown in CTS 3.7.6.1 (Volume 8, Page 518) does not require the Station Vent Normal Range Radiation Monitoring to be OPERABLE during movement of irradiated fuel assemblies. Davis-Besse added this new Applicability to ITS 3.3.16 (Page 524) as justified in DOC M03 (Page 521). As part of this addition, ACTIONS for inoperable channels when moving irradiated fuel (i.e., ACTIONS A, B, and D) were also added. Thus, the addition of ITS 3.3.16 ACTIONS A, B, and D (during movement of irradiated fuel) is not a less restrictive change, but a more restrictive change. ITS 3.3.16 Required Action B.1 (Page 525) allows 1 hour to isolate the Control Room Normal Vent System. This Required Action applies during MODES 1, 2, 3, and 4, and also during movement of irradiated fuel. Davis-Besse believes that

since 1 hour is provided in CTS 3.7.6.1 Action C for when both channels are inoperable in MODE 1, 2, 3, or 4, then the same 1 hour is acceptable when moving irradiated fuel assemblies. This 1 hour time was approved by the NRC as documented in the Safety Evaluation for Amendment 227, dated October 5, 1998. However, Davis-Besse has noted that DOC M03 does not clearly state that the addition of ACTIONS A and B, as they relate to moving irradiated fuel, is part of DOC M03. Therefore, DOC M03 will be revised to clearly describe the entire more restrictive change. A draft markup regarding this change is attached. This change will be reflected in the supplement to this section of the ITS Conversion Amendment. The NRC reviewer also requested that Davis-Besse include in the discussion Control Room Habitability and the movement of fuel that has occupied part of a critical core within the previous 72 hours. The Davis-Besse accident analysis does not assume any irradiated fuel movement prior to 72 hours. Fuel movement prior to this time is currently precluded by CTS 3.9.3 (Volume 14, Page 128). Davis-Besse is relocating this current requirement to the Technical Requirements Manual (TRM), consistent with NUREG-1430. The NUREG does not include this Specification. The TRM is currently incorporated into the UFSAR, thus is controlled by the requirements of 10 CFR 50.59. Davis-Besse expects to receive a License Condition that all changes covered by LA type and R type Discussion of Changes (DOC), which include CTS 3.9.3, be moved to the location specified in the applicable DOC (in this specific case, the TRM) and controlled by the process specified in the DOC (in this case, 10 CFR 50.59) as part of the ITS amendment approval.

In response to the NRC staff's RAI for a different issue, (RAI No. 200801161532) the licensee indicates that they will not be moving current technical specification 3.9.3 to the technical requirements manual (TRM). Instead of moving the requirement for delay time before moving irradiated fuel to the TRM the delay time for fuel movement will remain controlled by a technical specification. Movement of fuel in the reactor vessel will not occur unless the reactor has been subcritical for greater than 72 hours.

The NRC staff finds the clarifications by the licensee to be acceptable. The one hour delay to isolate the Control Room Normal Ventilation System and one hour delay to place one OPERABLE Control Room Emergency Ventilation System train in operation is consistent with the existing licensing basis. The existing plant fuel handling analysis shows that a fuel handling accident involving fuel that has been in the sub-critical reactor vessel for greater than 72 hours will not cause the radiation exposure to occupants of the control room to exceed the limits of GDC 19. Offsite radiation exposure remains well within the limits of 10 CFR 100.11. Based on the above evaluation, the proposed change is acceptable.

G.2.7.3 <u>Conclusion</u>

As described above, the NRC staff reviewed the justifications used by the licensee to assess the radiological impacts of deviations from ITS 3.3.16 "Station Vent Normal Range Radiation Monitoring." The NRC staff finds that the licensee used methods consistent with the regulatory requirements and guidance identified in Section G.2.7.1 above. The NRC staff finds, with reasonable assurance that the licensee's estimates of the exclusion area boundary, low-population zone, and control room doses will continue to comply with these criteria. Therefore, the proposed TS changes are acceptable with regard to the radiological consequences of postulated design-basis accidents.

Based on the above evaluation the NRC staff finds the proposed changes to the DBNPS TSs provide reasonable assurance of the ability to mitigate the effects a postulated fuel handling accident. The NRC staff also concludes that the proposed TS changes are in accordance with 10 CFR 50.36, and the requirements of GDCs 19, and 10 CFR 100.11. Therefore, the NRC staff finds the proposed change acceptable.

G.2.8 BSI-22: ITS 3.3.8

BSI-22 proposes a new definition of Loss of Power Start (LOPS) operability in the TS Bases (ITS 3.3.8 Attachment 1 Volume 8, page 298 of 636 of application).

G.2.8.1 Regulatory Evaluation

The NRC staff considered the following regulatory requirements and guidance in its review of the application:

Part 50 of 10 CFR, "Domestic Licensing of Production and Utilization Facilities," establishes the fundamental regulatory requirements. Specifically, Appendix A, "General Design Criteria for Nuclear Power Plants," of 10 CFR Part 50 provides, in part, the necessary design, fabrication, construction, testing, and performance requirements for structures, systems, and components important to safety.

GDC 10, "Reactor Design," in Appendix A to 10 CFR Part 50 requires that "the reactor core and associated coolant, control, and protection systems ... be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences."

GDC 13, "Instrumentation and control," in Appendix A to 10 CFR Part 50 requires that "instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges."

GDC 21, "Protection system reliability and testability," in Appendix A to 10 CFR Part 50 requires that "the protection system shall be designed for high functional reliability and in-service testability commensurate with the safety functions to be performed. Redundancy and independence designed into the protection system shall be sufficient to assure that (1) no single failure results in loss of the protection function and (2) removal from service of any component or channel does not result in loss of the required minimum redundancy unless the acceptable reliability of operation of the protection system can be otherwise demonstrated."

Section 50.36 of 10 CFR, "Technical Specifications," states, "Each applicant for a license authorizing operation of a production or utilization facility shall include in his application proposed technical specifications in accordance with the requirements of this section."

G.2.8.2 Technical Evaluation

The STS for LCO 3.3.8 of NUREG-1430 is based on a design that utilizes a two-out-of-three logic design. The licensee's current logic design utilizes a one-out-two taken twice logic design for both loss of voltage and degraded voltage relays. The licensee proposes to change current TS 3/4.3.2 Safety System Instrumentation to reflect their current logic design for the loss of voltage and degraded voltage instrumentation for the EDG loss of power start (LOPS) function. The NRC has classified the issue related to this information as BSI-22. The NRC staff asked a question related to single failure criteria for the system and the licensee provided the response. They both appear on the NRC/Davis-Besse ITS conversion website.

The licensee's current design has four undervoltage relays per bus arranged in a one-out-of-two taken twice logic. Each one of the one-out-of-two logic relays energizes an auxiliary relay. For the diesel start, load sequencer, and load shed, both auxiliary relays have to actuate. Loss of either relay could prevent this function. However, this will result in a loss of one diesel generator, but the other diesel generator will remain operable. Therefore, this meets the single failure requirements. This design has been reviewed and approved previously by the NRC staff. Therefore, the NRC staff finds the proposed change acceptable.

G.2.8.3 Conclusion

The NRC staff reviewed BSI-22 related to a TS change in the ITS conversion of the DBNPS. Based on its review of the licensee's submittal and responses to the NRC staff's questions, the NRC staff finds that the proposed TS change related to BSI-22 is acceptable.

5.0 DELETED LICENSE CONDITIONS

License Condition 2.C(5), the secondary water chemistry monitoring program, is proposed to be deleted. This is acceptable since the requirements of this License Condition have been included in ITS 5.5.9, "Secondary Water Chemistry Program."

6.0 LICENSEE COMMITMENTS

In reviewing the proposed ITS conversion for DBNPS, the NRC staff has relied upon the licensee's commitment to relocate certain requirements from the CTS to licensee-controlled documents as described in Table LA, "Removed Details" (Attachment 4 to this SE) and Table R, "Relocated Specifications" (Attachment 6 to this SE). These tables, and Sections 4.D and 4.E of this SE, reflect the relocations described in the licensee's submittals on the conversion. The NRC staff requested and the licensee submitted a set of license conditions to make these commitments enforceable (see Section 7.0 of this SE). Such commitments from the licensee are important to the ITS conversion because the acceptability of removing certain requirements from the TSs is based on those requirements being relocated to licensee-controlled documents where further changes to the requirements will be controlled by applicable regulations or other requirements (e.g., 10 CFR 50.59).

7.0 LICENSE CONDITIONS

In its letter dated August 7, 2008, the licensee agreed to license conditions which describe 1) the relocation of certain CTS requirements and license conditions, as applicable, to other license controlled documents prior to ITS implementation, and 2) a schedule to begin performing new and revised SRs after ITS implementation. The following license conditions are included in the Facility Operating Licenses:

1. This amendment authorizes the relocation of certain technical specification and operating license conditions, as applicable, to other licensee-controlled documents. Implementation of License Amendment [ ] shall include relocation of these requirements to the specified documents, as described in Table LA of Removed Details and Table R of Relocated Specifications attached to the NRC staff's SE, as discussed in Sections D and E of the SE.

2. The schedule for performing the new or revised SRs in License Amendment No. [ ] shall be as follows:

   For SRs that are new in this amendment, the first performance is due at the end of the first surveillance interval, which begins on the date of implementation of this amendment.

   For SRs that existed prior to this amendment whose intervals of performance are being reduced the first reduced surveillance interval begins upon completion of the first surveillance performed after implementation of this amendment.

   For SRs that existed prior to this amendment that have modified acceptance criteria, the first performance is due at the end of the surveillance interval that began on the date the surveillance was last performed prior to the implementation of this amendment.

   For SRs that existed prior to this amendment whose intervals of performance are being extended the first extended surveillance interval begins upon completion of the last surveillance performed prior to the implementation of this amendment.

The NRC staff has reviewed the above schedule for the licensee to begin performing the new and revised SRs and concludes that it is acceptable. The licensee states that its implementation date for the new ITSs will be no later than [ ]. This implementation date is acceptable.

Because the commitments discussed in Section 6.0 of this SE are being relied upon for the amendment, a license condition is included in the amendment that will enforce the relocation of requirements from the CTSs to licensee-controlled documents. The relocations are described in Table LA and Table R, which are Attachments 3 and 5 to this SE. The license condition states that implementation of this amendment shall include relocation of these requirements to the specified documents. The relocation of these requirements to the specified documents is to be completed no later than [ ]. This implementation date is acceptable.

8.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Ohio State official was notified of the proposed issuance of the amendment. The State official had/had no comments.

9.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an Environmental Assessment and Finding of No Significant Impact was published in the *Federal Register* on XXXXXXXXX (XX FR XXX), for the proposed conversion of the CTS to ITS for DBNPS. Accordingly, the Commission has determined that issuance of these amendments will not result in any significant environmental impacts other than those evaluated in the Final Environmental Statement for DBNPS dated October 1975. The Commission also issued a Notice of Consideration of Issuance of Amendment to Facility Operating Licenses and Opportunity for a Hearing on May 22, 2008 (73 FR 29787-29791). There have been no comments or requests for hearing.

10.0 CONCLUSION

The NRC staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Attachments:
1. List of Standard Acronyms and Abbreviations
2. Table A - Administrative Changes
3. Table L - Less Restrictive Changes
4. Table LA - Removed Details
5. Table M - More Restrictive Changes
6. Table R - Relocated Specifications

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If you have any questions concerning this letter and the draft SE, contact me at 301-415-3719 or email Cameron.Goodwin@nrc.gov.

Sincerely,

/RA/

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Docket No. 50-346

Enclosures:
1. Amendment No. to NPF-3
2. Draft Safety Evaluation

cc w/encls: Distribution via listserv

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List of Acronyms Accession Number: ML082490271
Table A Accession Number: ML082490275
Table L Accession Number: ML082490289
Table LA Accession Number: ML082490280
Table M Accession Number: ML082490295
Table R Accession Number: ML082490300 * By memo dated

OFFICE	LPL3-2/PM	LPL3-2/LA	DIRS/ITSB	LPL3-2/BC
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