

March 30, 2006

MEMORANDUM TO: Richard J. Laufer, Chief
Plant Licensing Branch A
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

FROM: Thomas H. Boyce, Chief */RA/*
Technical Specification Branch
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation

SUBJECT: BEAVER VALLEY NUCLEAR POWER STATION, UNITS 1 AND 2 -
SAFETY EVALUATION FOR THE CONVERSION TO THE IMPROVED
TECHNICAL SPECIFICATIONS (TAC NOS. MC6285 and MC6286)

By application dated February 25, 2005, as supplemented by letter dated November 11, 2005, First Energy Nuclear Operating Company (FENOC) requested a full conversion from the current Technical Specifications (CTS) to a set of Improved Technical Specifications (ITS) based on NUREG-1431, "Standard Technical Specifications - Westinghouse Plants," Revision 2, for the Beaver Valley Nuclear Power Station (BVPS). In addition, Technical Specification Task Force changes were also incorporated to make the resulting BVPS ITS more consistent with Revision 3 of NUREG-1431. The proposed amendment would also consolidate the BVPS-1 and 2 technical specifications into a single set of ITS applicable to both units.

This Safety Evaluation (SE) evaluates ITS changes only and is based on the draft BVPS ITS Revision 2.5 and the draft ITS Bases Revision 2.0. Beyond Scope Items and technical specification changes due to outstanding licensing amendment requests will be addressed by the appropriate technical branches in the final SE to be issued with the above license amendments.

The ITS changes were categorized according to whether the changes were administrative, more restrictive, less restrictive, removed details, or relocated specifications. These changes are described in Revision 1.5 of the draft Discussion of Change (DOC) Tables attached to this SE. Because a CTS to ITS conversion is voluminous, the tables only summarize the changes. The actual changes described in the application, including those generated by the questions and answers (Q&A's) posted on the Beaver Valley ITS database, were reviewed by the staff and found to be acceptable.

Contact: R. Clark, NRR/DIRS
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R.J. Laufer

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To facilitate the final review and approval process, the licensee will indicate all changes by bench marking the draft ITS Revision 2.5, and the draft ITS Bases Revision 2, in a supplement to the original application.

This completes our efforts on TAC Numbers MC6285 and MC6286.

Docket Nos.: 50-334 and 50-412

Enclosure:
Safety Evaluation

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-2-

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

FIRSTENERGY NUCLEAR OPERATING COMPANY

FIRSTENERGY NUCLEAR GENERATION CORP.

OHIO EDISON COMPANY

THE TOLEDO EDISON COMPANY

BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2 (BVPS 1 AND 2)

DOCKET NOS. 50-334 AND 50-412

1.0 INTRODUCTION

By application dated February 25, 2005, as supplemented by letter dated November 11, 2005, First Energy Nuclear Operating Company (FENOC) requested a full conversion from the current Technical Specifications (CTS) to a set of Improved Technical Specifications (ITS) based on NUREG-1431, "Standard Technical Specifications - Westinghouse Plants," Revision 2. In addition, Technical Specification Task Force (TSTF) changes were also incorporated to make the resulting BVPS ITS more consistent with Revision 3 of NUREG-1431. The proposed amendment would also consolidate the BVPS-1 and 2 TSs into a single set of ITS applicable to both units.

This Safety Evaluation (SE) evaluates ITS changes only and is based on the draft BVPS ITS Rev. 2.5. Beyond Scope Items and technical specification changes due to outstanding licensing amendment requests will be addressed by the appropriate technical branches in the final SE to be issued with the above license amendments.

To expedite review of the application, the NRC staff posted its questions (Q's) related to the BVPS application to a secure database through the BVPS ITS Conversion web page. The licensee then posted responses (A's) to the database, also through the web page. Access to the Q's&A's database is restricted so that only designated licensee and NRC staff can enter information into the database; however, the public can enter the database to read the questions and responses. To comply with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.4 for written communications for license amendment requests and to have the database on the BVPS dockets, the licensee will submit a copy of the complete database to the NRC before the amendments are issued. The public can access the database through the NRC web site at www.nrc.gov by the following process: (1) click on the tab labeled "Nuclear Reactors" on the NRC home page along the upper part of the web page, (2) then click on the link to "Operating Reactors" which is under "Regulated Activities" on the left hand side of the web page, (3) then click on the link to "Improved Standard Technical Specifications," which is on the right hand side of the page, and (4) finally click on the link to "Comments on the application and responses by Beaver Valley Power Station," near the bottom of the web page, to open the database. The Q's&A's are organized by ITS Sections 1.0, 2.0, 3.0, 3.1 through 3.9, 4.0, and 5.0, which are listed first, and the beyond scope issues (BSIs) 1 through 30, which are

Enclosure

listed later. For every listed ITS section or BSI, there is an Q&A which can be read by clicking on the ITS section or BSI number. The licensee's responses are shown by a solid triangle adjacent to the ITS section or BSI number, and, to read the response, click on the triangle. To page down through the ITS sections to the BSIs, click on "next" along the top of the page or on "previous" to return to the previous page.

2.0 BACKGROUND

BVPS has been operating with the TSs issued with the original Facility Operating Licenses dated July 2, 1976 (for Unit 1), and August 14, 1987 (for Unit 2), as amended. The proposed conversion to the ITSs is based upon:

- NUREG-1431, "Standard Technical Specifications for Westinghouse Plants," (ISTs) Revision 2, dated April 30, 2001, with additional changes to make the resulting BVPS ITS more consistent with Revision 3.0 of NUREG-1431.
- The BVPS, Units 1 and 2, 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 BVPS are referred to as the ITSs, the existing TSs are referred to as the CTSs, and the improved standard TSs, given in NUREG-1431, are referred to as the 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 ITSs on the ISTs, the Final Policy Statement, and the requirements in 10 CFR 50.36, the licensee retained portions of the CTSs as a basis for the ITSs. During the course of its review, the NRC staff utilized the Q's&A's database, conducted a series of telephone conference calls, and held meetings with the licensee. The Q's&A's database, meetings, and conference calls served to clarify the ITSs with respect to the guidance in the Final Policy Statement and the ISTs. The NRC staff requested that the licensee docket the Q's&A's database in a sworn statement with regards to its accuracy, as well as docket all Requests for Additional Information (RAIs) and responses under oath and affirmation, in a supplement to the license amendment. The RAIs are a subset of the Q's&A's database and are used to support the SEs for BSIs. 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 BVPS 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 BVPS 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 changed 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 amendments, consistent with the Final Policy Statement, is to rewrite, reformat, and streamline the BVPS CTSs 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 ISTSs 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 ITSs based on ISTSs, as modified by plant-specific changes, is acceptable for continued operation of BVPS. This SE also explains the NRC staff's conclusion that the ITSs are consistent with the BVPS current licensing basis and the requirements of 10 CFR 50.36.

This SE input assumes that the following license conditions will be included in the proposed amendments to make enforceable the following aspects of the conversion: (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 ITSs issued with these license amendments comply 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-1431) 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 ITSSs.

In September 1992, the Commission issued NUREG-1431, Revision 0, which was developed using the guidance and criteria contained in the Commission's Interim Policy Statement. The ISTSs in NUREG-1431 were established as a model for developing the ITSSs for Westinghouse 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-1431 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-1431, Revision 2, as modified, apply to BVPS.

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 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 ITSSs 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 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 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 An 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 conclusion that the conversion of the BVPS, Units 1 and 2, CTSs to ITSs based on ISTSs, as modified by plant-specific changes, is consistent with the BVPS, Units 1 and 2, current licensing bases, the requirements and guidance of the Final Policy Statement, and 10 CFR 50.36.

4.0 EVALUATION

In its review of the BVPS 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 CTS and placed in licensee-controlled documents. The following are the five types of CTS changes:

- A Administrative - Changes to the CTS that do not result in new requirements or change operational restrictions and flexibility.
- M More Restrictive - Changes to the CTS that result in added restrictions or reduced flexibility.
- L Less Restrictive - Changes to the CTS that result in reduced restrictions or added flexibility.

- LA Removed Details - Changes to the CTS 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 CTS that relocate LCO requirements that do not meet the selection criteria of 10 CFR 50.36(c)(2)(ii).

The ITS application included a justification for each proposed change to the CTS 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 (JFD).

The changes to the CTS, as presented in the ITS application, are listed and described in the following five tables (for each ITS section) attached to this SE:

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

These tables provide a summary description of the proposed changes to the CTS, references to the specific CTS requirements that are being changed, and the specific ITS requirements that incorporate the changes. The tables are only meant to summarize the changes being made to the CTS. 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 letters.

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.

A. Administrative Changes to the CTS

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 and the licensee have used the ISTSs as guidance to reformat and make other administrative changes. 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 ITS;
- Combining related requirements currently presented in separate specifications of the CTS into a single specification of ITS;
- 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 BVPS ITS conversion. Table A is organized in ISTS order by each A-type DOC to the CTS, 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 placing an LCO on plant equipment that is not required by the CTS, 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 BVPS ITS conversion. Table M is organized in ITS order by each M-type DOC to the CTSs and provides a summary description of each more restrictive change that was adopted, and references to the affected CTS and ITS. 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 and relaxations to portions of the CTS requirements that are being retained in the ITS. 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 BVPS 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 less restrictive changes to the CTS have been evaluated and found to involve deletions and relaxations to portions of CTS requirements that can be grouped in the following eight 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
- Category 8 — Deletion of Reporting Requirements

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 CTS 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 LCO's are consistent with the guidance established by the ISTSs taking into consideration the BVPS current licensing basis. Therefore, in view of the above, Category 1 changes are acceptable.

Category 2 — Relaxation of Applicability

The CTS 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 BVPS current licensing basis. Therefore, in view of 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, providing 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 BVPS current licensing basis. Therefore, in view of 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 BVPS current licensing basis. Therefore, in view of the above, Category 4 changes are acceptable.

Category 5 — Deletion of SR

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 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 deleting 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 CTS 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 CTS, 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 de-energized 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). Also included is 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 surveillance under these conditions is acceptable because the equipment is already performing its intended safety function.

These deletions of CTS SRs optimize test requirements for the affected safety systems and increase operational flexibility. Changes involving relaxations of SRs, as described, are consistent with the guidance established by the ISTSs, taking into consideration the BVPS current licensing basis. Therefore, in view of the above, Category 5 changes are acceptable.

Category 6 — Relaxation of SR 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 CTS 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 BVPS current licensing basis.

Category 7 — Relaxation of Surveillance Frequency

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 CTS 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 BVPS current licensing basis.

Category 8 — Deletion of Reporting Requirements

The CTS 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.

Table L attached to this SE lists the less restrictive changes being made in the BVPS ITS conversion. Table L, which is organized in ISTSs 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. Removed Details

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 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 BVPS 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. A significant number of changes to the CTSs involved the removal of specific requirements and detailed information from individual specifications evaluated to be Types 1 through 6 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 UFSAR 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 Program Description (QAPD). The regulation in 10 CFR 50.59 specifies controls for changing the facility as described in the UFSAR. The regulation in 10 CFR 50.54(a) specifies criteria for changing the QAPD. The Technical Requirements Manual (TRM) is a general reference in the UFSAR and changes to it are accordingly also subject to 10 CFR 50.59. The ITS Bases also contain descriptions of system design. ITS 5.5.12 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 CTS 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 UFSAR by 10 CFR 50.34. ITSs 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 Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, dated February 1978, and in all programs specified in ITS Section 5.5, respectfully. 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 UFSAR and TRM. ITS 5.5.10 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 CTS 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 ITS. 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 5.5.4, "Inservice Testing Program," requires a program to provide controls for inservice testing (IST) of American Society of Mechanical (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 CTS also contain requirements to test specific components such as pumps and valves, and 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 CTS and place them in licensee-controlled documents.

Type 4 - Removal of Administrative Requirements Redundant to Regulations

Certain CTS administrative requirements are redundant to regulations and thus are relocated to the UFSAR or other appropriate licensee-controlled documents, including the TRM, ODCM, QAPD, or ISI Plan (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 UFSAR 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 QAPD, and ITS 5.5.10 governs changes to the ITS Bases. Therefore, it is acceptable to remove Type 6 details from CTS and place them in licensee-controlled documents.

Type 5 - Removing Performance Requirements for Indication-Only Instrumentation and Alarms

Certain CTS requirements are for instruments and alarms that are not required for operability of the LCO-required equipment, and thus may be relocated to the UFSAR or other appropriate licensee-controlled documents. Changes to the facility or to procedures as described in the UFSAR 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 QAPD, and ITS 5.5.10 governs changes to the ITS Bases. Therefore, it is acceptable to remove Type 4 details from CTS 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 BVPS ITS conversion. Table LA is organized in ISTS order by each LA-type DOC and includes the following:

1. The DOC identifiers, formatted as DOC Type (e.g., LA), followed by the Chapter/Section number (e.g., 3.4), followed by a designator number (e.g., 74);
2. A summary description of the relocated details and requirements;
3. The name of the licensee-controlled document to contain the relocated details and requirements (location);
4. The regulation (or ITS Specification) for controlling future changes to relocated requirements (change control process);
5. The reference numbers of the associated CTS requirements; 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 5.5.10, "Technical Specifications (TS) Bases Control Program."
- UFSAR (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.
- ISI and IST Programs controlled by 10 CFR 50.55a.
- ODCM controlled by ITS 5.5.1.
- COLR controlled by ITS 5.6.3.
- QAPD, as approved by the NRC, referenced in the UFSAR, and controlled by 10 CFR Part 50, Appendix B, and 10 CFR 50.54(a).
- Site Emergency Plan controlled by 10 CFR 50.54(q).

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 CTS, the NRC staff has concluded that they do not fall within any of the four criteria set forth in 10 CFR 50.36(c)(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 CTS and not included in the ITSs.

E. Relocated Specifications

10 CFR 50.36(c)(2)(ii) states that LCOs and associated requirements that do not satisfy or fall within any of the four specified criteria may be relocated from existing TSs (an NRC-controlled

document) to appropriate licensee-controlled documents as noted in Section D above. These specifications generally would include LCOs, Required Action Statements (i.e., Actions), and associated SRs. In its application and supplements, the licensee proposed relocating such specifications from the CTS to a licensee-controlled document (i.e., LRM), as appropriate.

Table R attached to this SE lists the relocated changes that would be made in the BVPS ITS conversion and lists all specifications that are being relocated from the CTSs to licensee-controlled documents. Table R includes the following 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);
5. The methods for controlling future changes to the relocated specifications (i.e., the regulatory change control process); and
6. The type of change.

The NRC staff has reviewed the licensee's submittals and finds that relocation of the requirements specified in Table R to a licensee-controlled document is acceptable in that the LCOs and associated requirements were found not to fall within the scope of 10 CFR 50.36(c)(2)(ii). The relocated 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. In addition, the NRC staff has concluded that changes to licensee-controlled documents will be adequately controlled as discussed in Section 4.F.

The NRC staff's evaluation of each relocated specification listed in Table R is provided below, mostly in CTS order.

E.1 Reactivity Control Systems

LCO: CTS 3.1.1.3, DOC R.1

CTS Specification 3.1.1.3, Boron Dilution, requires that "The flow rate of reactor coolant through the core shall be \geq 3000 gpm whenever a reduction in Reactor Coolant System boron concentration is being made". The CTS specification is applicable in "All Modes". This CTS specification contains surveillance requirements that verify at least one reactor coolant pump is in operation or that a specific RHR flow is maintained during dilution operations. The ISTS does not contain a corresponding Specification.

Discussion:

CTS 3.1.1.3 is based on a standard TS (3.1.1.3, Boron Dilution and Addition) that was contained in the original Standard TS for Westinghouse Plants (Revision 0) of NUREG-0452, dated March 15, 1975. The BVPS Unit 1 TS are based on Revision 0 of NUREG-0452. The TS for BVPS Unit 2 are based on the BVPS Unit 1 TS in order to make the TS for both Units as close as possible. In NUREG-0452, Revision 2, dated July 1979, the TS 3.1.1.3, Boron Dilution and Addition, was eliminated from the standard TS for Westinghouse Plants. This TS does not appear in any subsequent revisions of NUREG-0452 nor in any revisions of NUREG-1431.

In Modes 1-3, the BVPS CTS (and the ISTS) contain other requirements for RCS Flow (RCS Loops in Section 3.4) that require at least one RCS loop in service with the reactor coolant pump (RCP) in operation. The flow of a single RCP exceeds the flow requirements of CTS 3.1.1.3. In addition to the RCS loop requirements, the DNB limits applicable in Mode 1 also specify an RCS flow far greater than that required by CTS 3.1.1.3. As such, in Modes 1-3, CTS 3.1.1.3 does not contribute any new or more restrictive RCS flow requirements than already exist in the CTS and the ISTS. The existing and proposed TS requirements for the RCS loops and DNB limits specify more restrictive RCS flow requirements in Modes 1-3 than CTS 3.1.1.3.

In Modes 4, 5, and 6, the BVPS CTS (and the proposed BVPS ITS) require that unborated water source isolation valves be secured in the closed position such that the possibility of an inadvertent boron dilution accident is precluded. BVPS does not assume a design basis boron dilution accident in Modes 4, 5, or 6. In Mode 4, the CTS (and the proposed BVPS ITS) contain other requirements (RCS Loops, Mode 4 in Section 3.4) for RCS flow that ensure an RCS or RHR loop is in service to provide sufficient RCS flow to remove decay heat. In Modes 5 and 6, the BVPS CTS (and the proposed BVPS ITS) contain other requirements for RCS flow (RCS Loops, Mode 5 in Section 3.4 and RHR and coolant circulation in Section 3.9) that ensure an RHR loop is in operation with sufficient flow to remove decay heat and prevent boron and thermal stratification. However, the specific flow rate requirement of CTS 3.1.1.3 (3,000 gpm) is not an assumption or initial condition, of any design basis accident analysis applicable for Modes 4, 5, and 6.

Comparison to Screening Criteria

- | | |
|------------|---|
| Criteria 1 | The RCS flow requirement of CTS 3.1.1.3 is not an instrument used for, nor capable of, detecting a significant abnormal degradation of the reactor coolant pressure boundary prior to a design bases accident (DBA). |
| Criteria 2 | The RCS flow requirement of CTS 3.1.1.3 is not a process variable or operating restriction required in Modes 1-3 to preserve or support any safety analysis assumptions due to other more restrictive RCS flow TS requirements applicable in these Modes. In Modes 4, 5, and 6, the RCS flow requirement of CTS 3.1.1.3 is not a specific assumption of any design basis accident described in the BVPS Unit 1 or Unit 2 UFSAR. Therefore, in Modes 4, 5, and 6, the RCS flow requirement of CTS 3.1.1.3 is not a process variable 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. |
| Criteria 3 | The RCS flow requirement of CTS 3.1.1.3 is not used as part of a primary success path in the mitigation of a DBA or transient. |
| Criteria 4 | As documented in the Individual Plant Examinations and the associated PRA Update Reports for both units, the RCS flow requirement of CTS 3.1.1.3 for Modes 4, 5, and 6 are not modeled in the BVPS PRA since these currently only reflect at-power operating Modes. As such, the CTS 3.1.1.3 requirement was not identified as being a "constraint of prime importance in limiting the likelihood or severity of accident sequences that are commonly found to dominate risk". |

Therefore, the CTS 3.1.1.3 requirement has not been shown to be significant to public health and safety.

Conclusion:

Since the 10 CFR 50.36(c)(2)(ii) criteria are not met, the Boron Dilution and associated surveillance may be relocated out of the TSs. The Boron Dilution Specification will be relocated to the LRM, and changes to the LRM will be controlled by provisions of 10 CFR 50.59.

E.2 Post Accident Monitoring System

LCO CTS 3.3.3.8, DOC R.1

The following Unit 1 and Unit 2 CTS PAM functions are proposed for relocation to the LRM:

- RCS Subcooling Margin Monitor
- PORV Limit Switch Position Indicator
- PORV Block Valve Limit Switch Position Indicator
- Safety Valve Position Indicator (Unit 2), and
- Safety Valve Acoustical Detector Position Indicator (Unit 1)

Discussion:

The purpose of the PAM instrumentation included in the TS is to function in a post accident environment to provide the following:

- Primary indications necessary for operators to take manual actions (for which no automatic control is provided) to mitigate the consequences of an accident (i.e, Regulatory Guide 1.97 Type A variables), and
- Key indications (i.e, Regulatory Guide 1.97 Category 1 variables) that may be deemed be risk significant because they are used to:
 - < Determine whether a system important to safety is performing its intended function,
 - < Determine the likelihood of a gross breach of a barrier to radioactive release, or
 - < Determine the need to initiate action to protect the public and to estimate the magnitude of the threat.

10 CFR 50.36 (c)(2)(ii) Criterion 1 applies to instrumentation used to detect RCS leakage and is satisfied by the instrumentation included in the RCS Leakage Detection Instrumentation TS. 10 CFR 50.36 (c)(2)(ii) Criterion 2 applies to a process variable, design feature, or operating restriction that must be maintained within limits by a Technical Specification requirement to preserve an initial condition assumed in a design basis accident. Individual TS for process variables such as boron concentration and operating limits such as Rod Insertion Limits

address items that satisfy 10 CFR 50.36 (c)(2)(ii) Criterion 2. Based on the description of the PAM functions above, a required PAM TS indication may satisfy either Criterion 3 (primary indication to initiate an action) or Criterion 4 (risk) of 10 CFR 50.36 (c)(2)(ii) when evaluating individual indications for retention in the PAM TS. Each BVPS indication proposed for relocation is evaluated below.

Comparison to Screening Criteria 3 and 4

1. RCS Subcooling Margin Monitor

The RCS subcooling indication provides information to the control room operators regarding the core cooling safety function and is used to satisfy an SI termination criteria. The inputs to the RCS subcooling monitor are the core exit thermocouples for RCS temperature and the wide range RCS pressure indication for RCS pressure. Since both of these indications are independently available in the control room and are also included in proposed ITS PAM TS 3.3.3, the RCS subcooling monitor only provides a verification of these other primary indications. The Unit 2 UFSAR clearly identifies the RCS Subcooling Margin Monitor as backup instrumentation (Unit 2 UFSAR Table 7.5-4). Based on the inclusion in the PAM ITS of the primary instruments for this indication (i.e., RCS temperature and pressure) the RCS subcooling monitor is not the primary indication for this variable or the key indication in terms of risk. The RCS pressure and temperature indications included in the proposed PAM ITS are classified as Regulatory Guide 1.97 Category 1 variables, the RCS subcooling monitor is not classified as a Regulatory Guide 1.97 Category 1 instrument. Therefore, the RCS subcooling monitor does not satisfy either Criterion 3 or 4 of 10 CFR 50.36(c)(2)(ii), and should not be included in the PAM ITS.

2. PORV Limit Switch Position Indicator

The PORV Limit Switch Position Indicators provide information to the control room operators related to the position of the pressurizer PORVs. This indication could be used to diagnose a high RCS pressure or a stuck open PORV (LOCA) at lower RCS pressures. However, the PORV Limit Switch Position Indicator does not provide an indication for operator actions for which no automatic control is provided and it is not identified as a key indication from a risk perspective (i.e., it is not classified as Regulatory Guide 1.97 Category 1). The DBA analysis of an inadvertent opening of the PORV does not rely on operator diagnosis and closure of the PORV or block valve; the DBA analysis assumes that automatic safety injection actuation will provide adequate protection. Therefore, it does not satisfy either Criterion 3 or 4 of 10 CFR 50.36(c)(2)(ii) and should not be included in PAM TS.

3. PORV Block Valve Limit Switch Position Indicator

The PORV Block Valve Limit Switch Position Indicator provides information to the control room operators on the position of the pressurizer PORV block valves. It could be used to diagnose the availability of the pressurizer PORVs for use in depressurizing the RCS or to indicate the isolation of a stuck open PORV (LOCA) at lower RCS pressures. However, the PORV Block Valve Limit Switch Position Indicator does not provide an indication for operator actions for which no automatic control is provided and

it is not identified as a key indication from a risk perspective (i.e., it is not classified as Regulatory Guide 1.97 Category 1). Therefore, it does not satisfy either Criterion 3 or 4 of 10 CFR 50.36(c)(2)(ii) and should not be included in PAM ITS.

4. Safety Valve Position Indicator (Unit 2)

For Unit 2 the Safety Valve Position Indicators are driven by magnetic reed switches which provide the control room operators information on the position of the pressurizer safety valves. It could be used to diagnose high RCS pressure or a stuck open safety valve (LOCA) at lower RCS pressures. However, the Position Indicator does not provide an indication for operator actions for which no automatic control is provided and it is not identified as a key indication from a risk perspective (i.e., it is not classified as Regulatory Guide 1.97 Category 1). Therefore, it does not satisfy either Criterion 3 or 4 of 10 CFR 50.36(c)(2)(ii) and should not be included in the PAM ITS.

5. Safety Valve Acoustical Detector Position Indicator (Unit 1)

For Unit 1 the Acoustical Detector Position Indicators are use to provide the control room operators information on the position of the pressurizer safety valves. It could be used to diagnose high RCS pressure or a stuck open safety valve (LOCA) at lower RCS pressures. However, the Position Indicator does not provide an indication for operator actions for which no automatic control is provided and it is not identified as a key indication from a risk perspective (i.e., it is not classified as Regulatory Guide 1.97 Category 1). Therefore, it does not satisfy either Criterion 3 or 4 of 10 CFR 50.36(c)(2)(ii) and should not be included in the PAM ITS.

Conclusion:

Since the 10 CFR 50.36(c)(2)(ii) criteria are not met, the Unit 1 and Unit 2 CTS PAM functions and associated surveillance may be relocated out of the TSs. The above specification will be relocated to the LRM, and changes to the LRM will be controlled in accordance with 10 CFR 50.59.

E.3 Radiation Monitoring

LCO CTS 3.3.3.1, DOC R.2

The Unit 1 and 2 CTS 3.3.3.1 contain requirements that address the Containment Area Radiation Monitor alarm and indication function for each unit. The Unit 2 CTS 3.3.3.1 also contains requirements that address the alarm and indication functions of the Unit 2 Main Steam Discharge Effluent Radiation Monitors. The Unit 1 and Unit 2 Containment Area Radiation Monitor alarm functions (not the indication function) and the Unit 2 Main Steam Discharge Effluent Radiation Monitors (both the alarm and indication functions) including all associated LCO, Applicability, Action, and Surveillance Requirements are proposed to be relocated from the TS to the LRM and ODCM respectively. It should be noted that the Containment Area Radiation Monitor indication function is retained in the proposed PAM ITS. Only the alarm function (and all associated LCO, Actions, etc.) of the Containment Area Radiation Monitors is proposed for relocation to the LRM. The following discussion provides information regarding

the Unit 1 and 2 Containment Area Radiation Monitor alarms and the Unit 2 Main Steam Discharge Radiation Monitors proposed for relocation.

Discussion:

10 CFR 50.36 (c)(2)(ii) Criterion 1 applies to instrumentation used to detect RCS leakage and is satisfied by the instrumentation included in the RCS Leakage Detection Instrumentation TS. 10 CFR 50.36 (c)(2)(ii) Criterion 2 applies to a process variable, design feature, or operating restriction that must be maintained within limits by a Technical Specification requirement to preserve an initial condition assumed in a design basis accident. Individual TS for process variables such as boron concentration and operating limits such as Rod Insertion Limits address items that satisfy 10 CFR 50.36 (c)(2)(ii) Criterion 2. Based on the description of the PAM functions above, a required PAM TS indication may satisfy either Criterion 3 (primary indication to initiate an action) or Criterion 4 (risk) of 10 CFR 50.36 (c)(2)(ii) when evaluating individual indications for retention in the PAM TS.

Comparison to Screening Criteria 3 and 4

1. Unit 1 and 2 Containment Area Radiation Alarms and Unit 2 Main Steam Discharge Effluent Radiation Alarm

The containment area radiation monitors and main steam discharge radiation monitors provide alarms and indications to alert plant personnel of high radiation conditions and to assist in evaluating and trending plant effluents. The TS Actions applicable if these monitors are inoperable require that the channel be restored to Operable status within 72 hours, or a preplanned alternate method of monitoring the parameter be initiated and the channel to be restored to Operable status within 30 days or that an explanation be provided in the next Annual Effluent Release Report why the channel was not restored to Operable status in a timely manner. The TS Actions do not impact or reference the operability of other systems or require a unit shutdown. Additionally, the alarm function of the Unit 1 and Unit 2 containment area radiation monitors and all functions of the Unit 2 main steam discharge radiation monitors proposed for relocation do not:

- Provide an automatic initiation function assumed in the safety analysis for any design basis accident described in Unit 1 UFSAR Chapter 14 or Unit 2 UFSAR Chapter 15.
- Provide indication or alarm functions relied on by operators to take manual actions that are assumed in the safety analyses for any design basis accident described in Unit 1 UFSAR Chapter 14 or Unit 2 UFSAR Chapter 15.
- Provide the primary indication that is used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary, or
- Monitor variables which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

Based on the above discussions, the alarm function of the Unit 1 and Unit 2 containment area radiation monitors and the Unit 2 main steam discharge radiation monitors do not satisfy any of the 10 CFR 50.36(c)(2)(ii) criteria for retention in the TS. Therefore, the proposed change to relocate the TS requirements for the above alarms is acceptable.

2. Unit 2 Main Steam Discharge Effluent Radiation Indication

The Unit 2 Main Steam Discharge Radiation indication may be used for the diagnosis of a steam generator tube rupture accident, which prompts an operator action for which no automatic actuation is provided. However, with the low fuel rod leakage history of current operating plants, secondary side radiation is not a reliable indicator of a steam generator tube rupture accident. The history of diagnosis and response to a steam generator tube rupture accident has typically been based on increased RCS inventory losses (e.g., decreasing pressurizer level and RCS pressure) and increasing water level in the affected steam generator. These indications provide the most reliable diagnosis of a steam generator tube rupture accident to prompt the appropriate operator actions and these indications are included in the PAM technical specification. In addition, the more sensitive radiation monitors (N16, steam generator blowdown, and condenser air ejector) are used for early detection of SG tube leakage. As such, the Unit 2 Main Steam Discharge Radiation indication is not the primary or key indication relied on to diagnose or mitigate a steam generator tube rupture accident.

Conclusion:

Therefore, based on the discussions above, the Unit 1 and 2 Containment Area Radiation alarms and the Unit 2 Main Steam Discharge Radiation alarm and indication functions do not satisfy either Criterion 3 or 4 of 10 CFR 50.36(c)(2)(ii) and should not be included in the PAM TS. The proposed changes to relocate the TS requirements for the above alarm and indication functions are acceptable.

E.4 Containment Purge and Exhaust Isolation and Unit 1 Radiation Monitoring

LCO Unit 1 CTS 3/4.3.3.1, 3/4.9.9, DOC R.1

Unit 1 CTS 3/4.9.9 Containment Purge and Exhaust Isolation System Unit 1 CTS 3/4.3.3.1 Radiation Monitoring, Table 3.3-6 and Table 4.3-3 Instrument 1.b.i Purge & Exhaust Isolation (RM-1VS 104 A & B).

The above listed CTS LCOs contain the requirements for the automatic and manual isolation of the Containment Purge and Exhaust System. The radiation monitors specified in CTS 3/4.3.3.3.1 function to automatically isolate the Containment Purge and Exhaust Valves on high radiation. The Unit 1 CTS LCOs are required to be met during movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

Discussion:

The proposed ITS 3.3.6, "Containment Purge and Exhaust Isolation Instrumentation" does not contain requirements for the Unit 1 automatic or manual Purge and Exhaust isolation. ITS 3.3.6

is only applicable to Unit 2. The CTS is revised to conform to the ITS. This changes the Unit 1 CTS Purge and Exhaust system requirements for automatic isolation on high radiation and manual isolation by moving the CTS requirements to the Unit 1 LRM.

The current BVPS design basis fuel handling accident of record (for both units) does not credit any automatic actuation to mitigate a fuel handling accident when moving fuel assemblies that are not recently irradiated or fuel over assemblies that are not recently irradiated. Recently irradiated fuel is defined in the TS Bases as "...fuel that has occupied part of a critical reactor core within the previous 100 hours." Although BVPS does not currently have a safety analysis that supports moving recently irradiated fuel assemblies, TS requirements have been retained to address the condition of moving recently irradiated fuel assemblies.

The retained TS requirements applicable when moving recently irradiated fuel or fuel assemblies over recently irradiated fuel assemblies include Containment Purge and Exhaust System isolation for Unit 2 and Containment Purge and Exhaust System effluent filtration for Unit 1. Proposed ITS 3.9.3, "Containment Penetrations" contains these BVPS unit specific requirements for the Containment Purge and Exhaust System. The current fuel handling accident analysis and CTS requirements for moving recently irradiated fuel were approved by the NRC in Amendments 241 for Unit 1 and 121 for Unit 2 (dated 8/30/01).

The relocation of the Unit 1 requirements for Containment Purge and Exhaust isolation to the LRM is acceptable because BVPS Unit 1 can not credit Containment Purge and Exhaust System isolation to mitigate the consequences of a fuel handling accident in containment. Instead, Unit 1 must rely on filtration of the effluent by an operable train of the Supplemental Leakage Collection and Release System (SLCRS) when necessary to mitigate the consequences of a fuel handling accident inside containment. Unit 1 must rely on filtration of the effluent instead of isolation because the Containment Purge and Exhaust System ductwork where the radiation monitors are located is not designed to withstand a seismic event. Although the radiation monitors provide an isolation signal to the purge and exhaust valves to close, no credit for the isolation signal may be taken in the Unit 1 design basis fuel handling accident. As stated in the NRC Safety Evaluation Report (SER) for Unit 1 Amendment 23 dated 12/12/79 (which added the TS requirement for the containment air to be exhausted through SLCRS); "However, since the purge exhaust ductwork inside the containment containing the radiation monitors is non-seismic we have made dose calculations assuming the ductwork and monitors are damaged during a seismic event. In such an event we have assumed there is no containment isolation". Therefore, based on the SER applicable to the Unit 1 Containment Purge and Exhaust System, any Unit 1 safety analysis performed to support the movement of recently irradiated fuel would credit filtration instead of isolation. The proposed ITS reflect the Unit 1 Containment Purge and Exhaust System specific design and licensing bases.

Comparison to Screening Criteria

Criteria 1 and 2 are not applicable to the Containment Purge and Exhaust Isolation System or the associated radiation monitors. Based on the design and licensing bases for the Unit 1 Containment Purge and Exhaust System and associated radiation monitors discussed above, Criterion 3 is not met either. The proposed Unit 1 ITS rely on filtration of the Containment Purge and Exhaust System effluent not system isolation as described in the NRC SER for

Unit 1 Amendment 23 dated 12/12/79. Nor is the isolation function of the Containment Purge and Exhaust Isolation System and associated radiation monitors during refueling operation modeled in the BVPS PRA as documented in the Individual Plant Examinations (IPE) and the associated PRA Update Reports for both units. In addition, the actuation instrumentation for this isolation function is not significant to risk because it is not involved in any accident initiation sequences. As such, the Containment Purge and Exhaust Isolation System and associated radiation monitors were not identified as being a "constraint of prime importance in limiting the likelihood or severity of accident sequences that are commonly found to dominate risk". Since, these CTS requirements have not been shown by risk to be significant to public health and safety, Criterion 4 is not met.

Conclusion:

Since the 10 CFR 50.36(c)(2)(ii) criteria are not met, the Containment Purge and Exhaust Isolation and Unit 1 Radiation Monitoring and associated surveillance may be relocated out of the TSs. The above specifications will be relocated to the LRM, and changes to the LRM will be controlled by provisions of 10 CFR 50.59.

E.5 Control Room Radiation Monitors

LCO CTS 3.3.3.1, DOC R.1

CTS 3.3.3.1, Radiation Monitoring, Function 1.c for control room area radiation monitors requires that two channels be OPERABLE. These radiation monitors are use to automatically initiate the Control Room Emergency Ventilation System (CREVS) in Modes 1, 2, 3, and 4. All Mode 1, 2, 3, and 4 Applicability requirements for CTS 3.3.3.1 including the LCO, Actions and Surveillance Requirements are proposed to be relocated to the LRM. However, the LCO requirements for these radiation monitors will be retained in ITS 3.3.7 for fuel movement involving recently irradiated fuel.

Discussion:

The applicable safety analyses for all design basis accidents considered in MODES 1-4 (except LOCA) that require control room isolation and pressurization allow sufficient time for manual initiation of the emergency pressurization mode of operation of control room ventilation (i.e., control room ventilation isolation, filtered makeup, and pressurization). The safety analyses assume a 30-minute delay for control room isolation and pressurization to allow for manual action. The LOCA accident analysis assumes the control room ventilation system is automatically isolated on a Containment Isolation Phase B (CIB) signal and subsequently pressurized with filtered air by manual initiation of a CREVS fan and alignment to a filtered flow path. Although the CIB signal will automatically start a CREVS fan and filtered flow path, a 30-minute delay to allow for manual initiation of a CREVS fan and filtered flow path is specifically assumed in all analyses. The 30-minute allowance is required to permit the use of a Unit 1 CREVS fan and filtration flow path which require manual operator action to place in service. The proposed BVPS ITS 3.3.7 continues to assure the assumptions of the safety analysis are met by specifying requirements for the manual system level CREVS initiation switches for each unit in Modes 1 through 4. The requirements for the CIB signal continue to be specified in ITS 3.3.2, "ESFAS Instrumentation" consistent with the ISTS.

The current safety analyses do not assume the control room area radiation monitors provide a CREVS actuation signal for any design basis accident. However, requirements for the radiation monitors to be OPERABLE are retained in case the monitors are required to support the assumptions of a fuel handling accident analysis involving the movement of recently irradiated fuel or the movement of fuel over recently irradiated fuel. The retention of requirements for fuel movement involving recently irradiated fuel is consistent with the guidance (standard TS) provided in NUREG -1431.

The BVPS specific safety analyses assumptions for manual actuation of the CREVS results in a different bases for these requirements than described in the ISTS. Due to the BVPS safety analysis reliance on manual operation, the BVPS radiation monitors do not serve as backup for a required automatic initiation for all design basis accidents. The BVPS safety analysis reliance on manual actuation reduces the importance of the automatic function provided by the BVPS control room radiation monitors. For example, the ISTS Actions for inoperable CREVS instrumentation in Modes 1-4 require CREVS equipment to be run continuously and could result in a unit shutdown. In addition, the continuous operation of the filter system will eventually expend the filter media and result in additional equipment unavailability. The ISTS Actions are more appropriate for plants that rely on automatic CREVS Actuation to mitigate all design basis accidents. Considering the BVPS specific safety analyses reliance on manual CREVS operation, the additional equipment wear and potential system unavailability, as well as the potential for a unit shutdown introduced by the ISTS Actions are overly conservative for inoperable radiation monitor(s). Therefore, BVPS is proposing to relocate the Mode 1 through 4 CTS requirements for the control room area radiation monitors to the BVPS Unit 1 and Unit 2 LRM as appropriate. The control room area radiation monitors will continue to be maintained operable within a more appropriate licensee controlled document consistent with the NRC recommendations in the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors, 58 FR 39132, July 22, 1993.

Comparison to Screening Criteria

Criteria 1 and 2 are not applicable to the control room area radiation monitors. Based on the BVPS safety analysis reliance on manual operation of the CREVS, Criterion 3 is not met either. Nor is the CREVS actuation function of the control room area radiation monitors modeled in the BVPS PRA as documented in the Individual Plant Examinations (IPE) and the associated PRA Update Reports for both units. In addition, the radiation monitoring actuation instrumentation for CREVS is not significant to risk because it is not involved in any accident initiation sequences. As such, the control room area radiation monitors were not identified as being a "constraint of prime importance in limiting the likelihood or severity of accident sequences that are commonly found to dominate risk". As such, these CTS requirements have not been shown by risk to be significant to public health and safety. Therefore, Criterion 4 is not met.

Conclusion:

Since the 10 CFR 50.36(c)(2)(ii) criteria are not met, the Control Room Area Radiation Monitors and associated surveillance may be relocated out of the TSs. The above specifications will be relocated to the LRM, and changes to the LRM will be controlled by provisions of 10 CFR 50.59.

E.6 Supplemental Leak Collection and Release System

LCO CTS 3.7.8.1, DOC R.1

CTS 3/4.7.8, "Supplemental Leak Collection and Release System (SLCRS)," requires that two SLCRS exhaust air filter trains be OPERABLE. CTS 3/4.7.8 is applicable in MODES 1, 2, 3, and 4 and contains surveillance requirements that verify the Operability of the SLCRS exhaust air filter train. The ISTS 3.7.12, ISTS 3.7.13, and ISTS 3.7.14 contain similar requirements in MODES 1, 2, 3, and 4 for plants that require filtration of airborne radioactivity following a design basis accident (DBA) in areas outside the containment.

Discussion:

The bases for including the requirements for SLCRS in the CTS was the need to filter airborne radioactivity, prior to release to the environment, from the areas of active Engineered Safeguards Features (ESF) components outside of the reactor containment building during the recirculation phase of a DBA LOCA. This ensures ESF leakage following the postulated DBA LOCA will not cause the resulting dose to exceed 10 CFR 50.67 limits. The CTS SLCRS surveillance and acceptance criteria verify the SLCRS filtration capability to assure it is adequate to mitigate the limiting dose consequences of a LOCA DBA.

In addition, SLCRS performs the secondary functions of heat removal from areas containing active ESF components and serves to minimize the accumulation of radiation in these areas to help support equipment EQ requirements.

Technical Specification Amendments 257 (Unit 1) and 139 (Unit 2) issued on 9/10/03 approved changes related to "Selective Implementation of Alternate Source Term and Control Room Habitability". In this amendment the alternate source term applied to the DBA LOCA analyses was approved. The result of this revised LOCA analysis was that the filtration capability of SLCRS was no longer credited to maintain the resulting dose to within the limits of 10 CFR 50.67. The BVPS Extended Power Uprate Licensing Report submitted with Licensing Amendment Request 302 (Unit 1) and 173 (Unit 2) also confirms that the revised LOCA analyses no longer credit the filtration capability of the SLCRS to maintain dose to within the limits of 10 CFR 50.67. As such, the bases for the CTS requirement that two SLCRS exhaust air filter trains be maintained operable in MODES 1, 2, 3, and 4 is no longer supported by the post Alternate Source Term/Uprate LOCA safety analyses.

Although SLCRS is no longer credited in the safety analyses for MODES 1, 2, 3, and 4, SLCRS operability requirements are retained in the ITS to address a potential Fuel Handling Accident involving "recently" irradiated fuel assemblies. The requirements necessary to address this fuel handling accident scenario have been proposed in ITS 3.7.12.

Based on the revised DBA LOCA safety analyses no longer crediting the SLCRS to maintain dose within the 10 CFR 50.67 limits, the CTS requirements for SLCRS in MODES 1, 2, 3, and 4 are proposed for relocation to the LRM.

Comparison to Screening 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.

The SLCRS is not installed instrumentation that would be used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary. The SLCRS performs a ventilation/filtration function and does not include instrumentation that meets Criterion 1.

- 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.

The SLCRS is not a process variable, design feature, or operating restriction required in Modes 1, 2, 3, or 4 that is an initial condition of a DBA or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The SLCRS is a system with components that function to ventilate and filter the exhaust from ESF areas outside of containment.

- 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.

The SLCRS is not a structure, system, or component that is part of the primary success path (of a safety sequence analysis) 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. The current safety analyses no longer credit the SLCRS to limit the radiological consequences of a DBA. The SLCRS functions regarding ESF component area heat removal and EQ concerns are not part of the primary safety analysis success path for DBA mitigation. The capability of SLCRS to perform these secondary functions may be adequately assured by controls outside of the Technical Specifications (i.e., the LRM as described below).

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

The SLCRS is not a structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

LIST OF STANDARD ACRONYMS AND ABBREVIATIONS

ASME	American Society of Mechanical Engineers
AFW	Auxiliary Feedwater
BSI	Beyond-Scope Issue
BVPS	Beaver Valley Power Station
CDF	Core Damage Frequency
CFR	Code of Federal Regulations
CFT	Channel Functional Test
COLR	Core Operating Limits Report
COT	Channel Operational Test
CRAC	Control Room Air Conditioning
CRDS	Control Rod Drive System
CREVS	Control Room Emergency Ventilation System
CSS	Containment Spray System
CT	Completion Time (in the ITSs)
CTS	Current TSs
CVCS	Chemical and Volume Control System
DBA	Design-Basis Accident
DG	Diesel Generator
DIS	Distributed Ignition System
DNB	Departure from Nucleate Boiling
DOC	Discussion of Change (from the CTS)
DVR	Degraded Voltage Relays
ECCS	Emergency Core Cooling System
EPRI	Electric Power Research Institute
ESF	Engineered Safety Features
ESFAS	Engineered Safety Feature Actuation System
ESFVS	Engineered Safety Feature Ventilation System
ESW	Essential Service Water
FHA	Fuel Handling Accident
FHAEVS	Fuel Handling Area Exhaust Ventilation System
FR	Federal Register
FSAR	Final Safety Analysis Report
GDC	General Design Criterion (of Appendix A to 10 CFR Part 50)
GL	Generic Letter
HEPA	High Efficiency Particulate [filter]
IIP	Inservice Inspection Program
ISI	Inservice Inspection
IST	Inservice Testing
ISTS	Improved Standard Technical Specifications, NUREG-1431, Revision 2
ITS	Improved TSs
JFD	Justification for Deviation (from the ISTS)
LBB	Leak Before Break
LCO	Limiting Condition for Operation
LOCA	Loss-of-Coolant Accident
LOV	Loss of Voltage

MOL	Minimum Operating Limit
MSLB	Main Steamline Break
NRC	Nuclear Regulatory Commission
NTSP	Nominal Trip Setpoints
ODCM	Offsite Dose Calculation Manual
OPΔT	Overpower Delta Temperature
OTΔT	Overtemperature Delta Temperature
PAM	Post Accident Monitoring
PORV	Power Operated Relief Valve
PRA	Probabilistic Risk Assessment
P/T	Pressure/Temperature
PTLR	Pressure Temperature Limits Report
QA	Quality Assurance
QAPD	Quality Assurance Program Description
RAI	Request for Additional Information
RCS	Reactor Coolant System
RCCA	Rod Cluster Control Assembly
RCP	Reactor Coolant Pump
RG	Regulatory Guide
RHR	Residual Heat Removal
RPV	Reactor Pressure Vessel
RTP	Rated Thermal Power
RTS	Reactor Trip System
RWST	Refueling Water Storage Tank
SAL	Safety Analysis Limit
SBVS	Shield Building Ventilation System
SE	Safety Evaluation
SFPSVS	Spent Fuel Pool Special Ventilation system
SG	Steam Generator
SGTR	Steam Generator Tube Rupture
SI	Safety Injection
SR	Surveillance Requirement
SSCs	Structures, Systems, and Components
SSPS	Solid State Protection System
STI	Surveillance Test Interval
SW	Service Water
TADOT	Trip Actuating Device Operational Test
TMD	Transient Mass Distribution
TRM	Technical Requirements Manual
TS	Technical Specification
TSs	Technical Specifications
TSTF	Technical Specification Task Force
UFSAR	Updated Final Safety Analysis Report
WEC	Westinghouse Electric Company

Table A

Administrative Changes, Rev. 1.5

Table M

More Restrictive Changes, Rev. 1.5

Table L

Less Restrictive Changes, Rev. 1.5

Table LA
Removed Details, Rev. 1.5

Table R

Relocated Specifications, Rev. 1.5