

January 31, 2005

Mr. Rick A. Muench
President and Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
Post Office Box 411
Burlington, KS 66839

SUBJECT: WOLF CREEK GENERATING STATION - ISSUANCE OF AMENDMENT RE:
PLANT PROTECTION TEST TIMES, COMPLETION TIMES, AND
SURVEILLANCE TEST INTERVALS (TAC NO. MC1656)

Dear Mr. Muench:

The Commission has issued the enclosed Amendment No. 156 to Facility Operating License No. NPF-42 for the Wolf Creek Generating Station. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated December 15, 2003 (WO 03-0059), and its supplemental letters dated October 7 (WO 04-0042) and November 12 (WO 04-0048), 2004.

The amendment revises TSs 3.3.1, "Reactor Trip System (RTS) Instrumentation," and 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," to adopt the completion time, test bypass time, and surveillance frequency time changes approved by the NRC in Topical Reports WCAP-14333-P-A, "Probabilistic Risk Analysis of the RPS [reactor protection system] and ESFAS Test Times and Completion Times," and WCAP-15376-P-A, "Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times." The amendment revises the required actions for certain action conditions; increase the completion times for several required actions (including some notes); delete notes in certain required actions; and increase frequency time intervals (including certain notes) in several surveillance requirements.

The application of December 15, 2003, submitted what was stated in the letter to be proprietary information. In response to the affidavit, the NRC issued its letter dated April 26, 2004, stating that the proprietary information submitted will be withheld from the public in accordance with 10 CFR 2.790. In issuing this amendment, pursuant to the renumbered 10 CFR 2.390, we have determined that the enclosed safety evaluation (SE) does not contain proprietary information. However, we will delay placing the SE in the public document room for a period of ten working days from the date of this letter to provide you with the opportunity to comment on the proprietary aspects. If you believe that any information in the SE is proprietary, please identify such information line-by-line and define the basis pursuant to the criteria of 10 CFR 2.390.

R. Muench

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The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Jack Donohew, Senior Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosures: 1. Amendment No. 156 to NPF-42
2. Safety Evaluation

cc w/encls: See next page

R. Muench

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Jack Donohew, Senior Project Manager, Section 2
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Docket No. 50-482

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2. Safety Evaluation

cc w/encls: See next page

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WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION

DOCKET NO. 50-482

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 156
License No. NPF-42

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Wolf Creek Generating Station (the facility) Facility Operating License No. NPF-42 filed by the Wolf Creek Nuclear Operating Corporation (the Corporation), dated December 15, 2003, and its supplements dated October 7 and November 12, 2004, comply 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, as amended, 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 license 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-42 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 156, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated in the license. The Corporation shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The 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

/RA/

Robert A. Gramm, Chief, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: January 31, 2005

ATTACHMENT TO LICENSE AMENDMENT NO. 156

FACILITY OPERATING LICENSE NO. NPF-42

DOCKET NO. 50-482

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change. The corresponding overleaf pages are provided to maintain document completeness.

REMOVE

INSERT

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 156 TO FACILITY OPERATING LICENSE NO. NPF-42

WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION

DOCKET NO. 50-482

1.0 INTRODUCTION

By application dated December 15, 2003, and its supplements dated October 7 and November 12, 2004, Wolf Creek Nuclear Operating Corporation (the licensee) requested changes to the Technical Specifications (TSs) for Wolf Creek Generating Station, Unit 1 (WCGS). The amendment would revise Technical Specifications (TSs) 3.3.1, "Reactor Trip System (RTS) Instrumentation," and 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation."

The purpose of the amendment is to adopt the completion time (CT), test bypass time, and surveillance frequency time changes approved by the NRC in Topical Reports (TRs) WCAP-14333-P-A, "Probabilistic Risk Analysis of the RPS [reactor protection system] and ESFAS Test Times and Completion Times," Revision 1 (hereafter referred to as WCAP-14333), dated October 1998, and WCAP-15376-P-A, "Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times," Revision 1 (hereafter referred to as WCAP-15376), dated March 2003. The proposed changes would revise the required actions for TS 3.3.1 Condition D; increase the test bypass times and CTs for several required actions (including some notes) in TSs 3.3.1 and 3.3.2; delete a note for the required actions in TS 3.3.2 Condition R; and increase surveillance test intervals (STIs), including a note, in several surveillance requirements (SRs) in TSs 3.3.1 and 3.3.2.

The licensee stated that the above relaxations will allow additional time to perform maintenance and test activities, enhance safety, provide additional operational flexibility, and reduce the potential for forced outages related to compliance with the current RTS/ESFAS instrumentation TSs. The licensee explained that industry information has shown that a significant number of reactor trips that have occurred are related to instrumentation test and maintenance activities, which indicates that the TSs should provide sufficient time to complete these activities in an orderly and efficient manner. The proposed amendment is to incorporate such "sufficient" times in the TSs for such activities.

The supplemental letters dated October 7 and November 12, 2004, provided additional clarifying information, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on February 3, 2004 (69 FR 5212).

2.0 BACKGROUND

Technical Specifications Improvements Project

Since 1983, NRC and industry representatives (e.g., the Westinghouse Owners Group, [WOG]) have worked to develop guidelines for improving nuclear power plant TS content and quality. In August 1983, an NRC task group was formed to investigate problems with surveillance testing required by TSs and to recommend approaches to make improvements. NUREG-1024, "Technical Specifications – Enhancing Safety Impact," resulted, and it contained recommendations to review the basis for test frequencies; to ensure that the tests promote safety and do not degrade equipment; and to review surveillance tests so that they do not unnecessarily burden personnel.

In December 1984, the Technical Specifications Improvement Project (TSIP) was established to provide a framework for rewriting and improving the Standard Technical Specifications (STS). The NRC developed criteria, as described in the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (58 FR 39132), to determine which of the design conditions and associated surveillances should be located in the TSs as limiting conditions for operation (LCOs). In September 1992, NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Revision 0, the improved STS for Westinghouse plants, including WCGS, was issued using the criteria for defining the scope of TSs for these plants. Four criteria were subsequently incorporated into the regulations by an amendment to 10 CFR 50.36 (60 FR 36953).

WOG Technical Specifications Optimization Program (TOP)

The TSIP study formed the basis for the WOG TOP requested TS relaxations. In February 1983, the WOG submitted TR WCAP-10271. The TR proposed TSs changes in operability test intervals and allowable out-of-service and test times for RTS analog channels, actuation logic, and reactor trip breakers. In February 1985, the NRC staff issued a safety evaluation (SE) approving WCAP-10271 for reference in license applications based on stated acceptance criteria. This action was part of the implementation of the recommendations for review of surveillance test requirements made in NUREG-1024. TSs approved in WCAP-10271 were incorporated into the STS in NUREG-1431, Revision 0, dated September 1992.

In June 1995, the WOG submitted TR WCAP-14333 including draft TS based on NUREG-1431, Revision 1. The TR proposed further relaxing WCAP-10271 approved TSs requirements by increasing the test bypass times and the CTs for both the solid state protection system (SSPS) and relay protection system RTS and ESFAS designs. The TR indicated a small increase in core damage frequency of approximately 3.1 percent from internal events based on the proposed TS changes. On July 15, 1998, the NRC staff issued an SE approving WCAP-14333 for reference in license applications based on stated acceptance criteria. The NRC staff's SE included approval of draft TS 3.3.1 and TS 3.3.2; however, the TSs for WCAP-14333 were not incorporated into NUREG-1431, Revision 2.

Technical Specification Task Force (TSTF) Changes

The review of a proposed generic change to the STS is a multi-staged process designed to ensure that each STS remains internally consistent, maintains coherence among the various vendors' STS, and incorporates the knowledge and operating experience of the industry and the NRC. Changes to the STS are proposed to the NRC through publically available submittals.

The NRC staff reviewed the changes to the STS proposed by the TSTF (referred to as TSTF changes) and will accept, modify, or reject them. The TSTF change process facilitates licensees' adopting NRC-accepted changes to the STS for their specific plant TS. This process is intended to streamline the license amendment review process involving NRC-accepted STS changes in order to increase NRC efficiency and reduce unnecessary regulatory burden. The NRC role in maintaining plant safety is achieved by the technical review of the proposed changes to the STS as well as plant-specific applications to adopt NRC-accepted changes to the STS.

For WCAP-14333 and WCAP-15376, the NRC has approved TS changes to incorporate the extended test bypass times, CTs, and STIs for certain RTS/ESFAS functions that are justified in the WCAPs in TSTF-418, Revision 2 (TSTF-418R2) and TSTF-411, Revision 1 (TSTF-411R1), respectively.

Series of WOG WCAPs Approved by NRC

As explained in Section 3.0, "Background," in Attachment I to the application, the WOG has completed a series of TRs that document the relaxation of RTS and ESFAS test times, CTs, and STIs for RTS/ESFAS instrumentation. The relaxations were based on analyses of RTS/ESFAS reliability and the impact of that reliability on plant risk. The licensee stated that the original study is the TOP and documented in a series of reports under WCAP-10271. This has continued with the WOG's submittal of WCAP-14333P and WCAP-15376 for relaxations beyond those approved in WCAP-10271.

The changes to the RTS/ESFAS requirements in the TSs based on WCAP-10271 are the following:

- Increase STIs for RTS analog channel operational tests (COTs) from once per month to once per quarter.
- Increase time in which an operable RTS analog channel may be maintained in an untripped condition from 1 hour to 6 hours.
- Increase time an inoperable RTS analog channel may be bypassed to allow testing of another channel in the same function from 2 hours to 4 hours. Also, the channel test may be done in the bypass mode leaving the inoperable channel in the tripped condition.

- Allow testing of the RTS analog channels in a bypass condition instead of in a tripped condition.

The current licensing basis (CLB) for WCGS includes WCAP-10271 which has been implemented in Amendment Nos. 12 and 43, and is discussed below. WCAP-10271 is risk-informed, as is WCAP-14333 and WCAP-15376, which are being implemented at WCGS in the proposed amendment.

The proposed changes to the TSs are based on WCAP-14333 and WCAP-15376, which have been reviewed and approved for application to plant TSs by the NRC staff. As stated above, these two WCAPs are a continuation of WCAP-10271. The licensee explained that the approach used in WCAP-14333 and WCAP-15376 is consistent with the approach taken in WCAP-10271. Differences in analysis methods from the methods in WCAP-10271 are addressed in Section 7.1 of WCAP-14333 and Section 8.3.5 of WCAP-15376. The relaxations from WCAP-10271 that are justified in WCAP-14333 and WCAP-15376 are the following:

Changes Based on WCAP-14333 and WCAP-15376

The changes to the RTS/ESFAS requirements based on WCAP-14333 are the following:

- Increase CTs from 6 to 72 hours for inoperable analog instrumentation.
- Increase test bypass times from 4 to 12 hours for surveillance testing of analog channels.
- Increase CTs from 6 to 24 hours for an inoperable logic cabinet or master and slave relays.

The NRC staff approved WCAP-14333, Revision 0, in its letter dated July 15, 1998, which is included in WCAP-14333, Revision 1, dated October 1998. The NRC staff stated that it would withhold the proprietary information in the WCAP in its letter of April 26, 2004.

Vogtle Electric Generating Plant Units 1 and 2, Amendments 116 and 94 respectively, also established a precedent for implementing the NRC-approved WCAP-14333 relaxations in the TSs.

The changes to the RTS/ESFAS requirements based on WCAP-15376 are the following:

Plants With SSPS

- Increase the STIs for logic cabinets and master relays from 2 months to 6 months.
- Increase the STIs for analog channels from 3 months to 6 months.
- Increase the STIs for reactor trip breakers (RTBs) from 2 months to 4 months.

- Increase test bypass times and CTs for RTBs from 2 hours to 4 hours (bypass times) and from 1 hour to 24 hours (CTs).

Plants With RPS

- Increase the STIs for logic cabinet from 1 month to 6 months.
- Increase the STIs for analog channels from 3 months to 6 months.
- Increase the STIs for RTBs from 2 months to 4 months.
- Increase test bypass times and CTs from 2 hours to 4 hours (bypass times) and from 1 hour to 24 hours (CTs).

The NRC staff approved WCAP-15376, Revision 0, in its letter dated December 20, 2002, which is included in WCAP-15376, Revision 1, dated March 2003. The NRC staff stated that it would withhold the proprietary information in the WCAP in its letter of April 26, 2004.

3.0 REGULATORY EVALUATION

Section 50.36(c)(3), "Technical Specifications," of 10 CFR requires a licensee's TSs to have SRs relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operations are within safety limits, and that the LCOs will be met. The SRs may include mode restrictions based on the safety aspects of conducting the surveillances in excluded modes.

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. In 10 CFR 50.36, the Commission establishes the regulatory requirements related to the content of TSs. In doing so, the Commission emphasized those matters related to preventing accidents and mitigating accident consequences. 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" (see Statement of Consideration, "Technical Specifications for Facility Licenses; Safety Analysis Reports," of December 17, 1968 (33 FR 18610)).

Section 50.36 of 10 CFR requires that plant TSs have the following five specific categories:

- (1) safety limits, limiting safety system settings and limiting control settings
- (2) LCOs
- (3) SRs
- (4) design features
- (5) administrative controls

Although the rule does not specify specific TS requirements, implicit within 10 CFR 50.36 is the requirement that the required actions for an LCO not being met and the test bypass times, CTs, and STIs specified in the TSs must be based on reasonable protection of the public health and safety. Therefore, the NRC staff must be able to conclude that there is reasonable assurance that the RTS/ESFAS functions affected by these proposed TS changes will perform their

required safety functions in accordance with the design basis accidents in Chapter 15 of the licensee's Final Safety Analysis Report (FSAR), based on the proposed test bypass times, CTs, and STIs.

The NRC staff reviewed the licensee's discussion on applicable regulatory requirements in Section 5.2 of Attachment I to its application. The licensee referred to General Design Criteria (GDC) 2, 4, 13, 20, 21 through 25, and 29 of Appendix A to 10 CFR Part 50 which provide the following design criteria for nuclear power plants:

- GDC 2 which requires structures, systems, and components (SSCs) important to safety to be designed to withstand natural phenomena. Components include RTS/ESFAS instrumentation.
- GDC 4 which requires SSCs important to safety be designed to accommodate environmental conditions associated with normal plant operation, maintenance, and accidents.
- GDC 13 which requires instrumentation be provided to monitor variables and systems over their anticipated ranges for normal operation, anticipated operational occurrences, and accidents.
- GDC 20 which requires protection systems (which include RTS/ESFAS instrumentation) be designed to initiate automatic operation of appropriate systems to assure fuel safety limits are not exceeded.
- GDC 21 which requires protection systems be designed for high functionality and testability.
- GDC 22 through 25, and GDC 29, which require design attributes for protection systems including independence, safe failure modes, separation from control systems, requirements for reactivity control malfunctions, and protection against anticipated operational occurrences.

The licensee also referred to several guidance documents that are not listed in the NRC regulations and only provide acceptable methods to meet NRC regulations.

The licensee stated in Section 5.2 of Attachment I to its application that there are no changes to the design of the RTS/ESFAS instrumentation such that "compliance with any of the regulatory requirements and guidance documents above would come into question." The NRC staff has reviewed the amendment application and because the only aspects of the RTS/ESFAS instrumentation being changed are the test bypass times, CTs, and STIs, concludes that the RTS/ESFAS instrumentation involved with the proposed changes in the application continue to meet the above GDC.

Based on this, the NRC staff will review the proposed TS changes against the requirement stated above for 10 CFR 50.36 that, based on the changes, there is reasonable assurance that the RTS/ESFAS instrumentation affected by the proposed changes will perform their required safety functions.

4.0 TECHNICAL EVALUATION

4.1 Introduction

In its application, the licensee stated that the proposed changes to TSs 3.3.1 and 3.3.2 are in the following categories:

1. The allowed CT to restore an inoperable RTS or ESFAS analog channel, before the channel is placed in the tripped condition, is increased from 6 hours to 72 hours.
2. The allowed time for an inoperable RTS or ESFAS analog channel to be bypassed or tripped for testing other analog channels is increased from 4 to 12 hours.
3. The allowed CT to restore an inoperable train of the SSPS logic (TSs 3.3.1 and 3.3.2) or actuation relays (TS 3.3.2) before the plant is required to shut down is increased from 6 hours to 24 hours.
4. The allowed time for one RTB train to be bypassed for surveillance testing is increased from 2 hours to 4 hours.
5. The allowed CT to restore an inoperable RTB train before the plant is required to shut down is increased from 1 hour to 24 hours.
6. The STI for the RTB trip actuating device operational test (TADOT) is increased from 31 days to 62 days, both on a staggered test basis.
7. The STI for the SSPS actuation logic test and master relay test is increased from 31 days to 92 days, both on a staggered test basis.
8. The STI for the COTs in TSs 3.3.1 and 3.3.2 is increased from 92 days to 184 days.
9. Revise the required actions of Condition D in TS 3.3.1 for one power range neutron flux - high channel inoperable.
10. Delete a note from the required actions for TS 3.3.1 Condition R.

4.2 Relationship of Amendment to WCAP-14333 and WCAP-15376

The proposed changes to the TSs can be grouped into the following areas of change: (1) the changes based directly on WCAP-14333 and WCAP-15376, and (2) the changes based indirectly on these WCAPs. Tables 1 and 2 attached to this SE show the proposed changes, the RTS/ESFAS functions in TS Tables 3.3.1-1, "Reactor Trip System Instrumentation," and

3.3.2-1, "Engineered Safety Feature Action System Instrumentation" associated with the changes, and which of the two WCAPs is related to the changes. The proposed changes are numbered from 1 to 21 in the attached Table 1 in the order given in Attachment II to the licensee's application.

The NRC staff's evaluation of the proposed changes will be in three parts: (1) applicability of WCAP-14333 and WCAP-15376 to WCGS, (2) implementation of the SE conditions for the two WCAPs at WCGS, and (3) evaluation of the proposed changes that are associated with, and deviate from, the WCAPs. There are no proposed changes that are unrelated to the WCAPs.

4.3 Applicability of WCAPs to WCGS

Both WCAP-1433 and WCAP-15376 use probabilistic risk assessment (PRA) to justify plant-specific changes to the TSs in accordance with Regulatory Guides (RGs) 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Current Licensing Bases," dated July 1998, and 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," dated August 1998. In these documents and in the NRC staff's SEs on these documents, there are references to Tier 1, Tier 2, and Tier 3.

Tier 1, using the PRA for the plant, assesses the impact of the proposed change on the core damage frequency (CDF), incremental conditional core damage probability (ICCDP), large early release frequency (LERF), and incremental conditional large early release probability (ICLERP). Tier 2, the avoidance of risk-significant plant-specific configurations, considers potential risk-significant plant operating conditions and addresses the need to preclude potentially risk-significant plant equipment outage configurations should additional equipment outages occur during the required action CT. Tier 3, risk-informed plant configuration control and management, addresses the plant-specific configuration risk management program (CRMP), including the risk-informed assessment for outages and what SSCs are controlled by the program.

An acceptable program is one that during normal plant operation ensures the risk impact of out-of-service equipment is evaluated prior to performing maintenance and uncovers risk-significant plant equipment outage configurations in a timely manner. Tier 3 confirms that CRMP insights will be incorporated into the licensee's decision making process before taking equipment out-of-service prior to or during the required action CT. Tier 1 was dealt with in the review of the two WCAPs, and Tiers 2 and 3 are addressed in the plant-specific applications of the WCAPs.

WCAP-14333 Conditions

WCAP-14333 justifies (1) an increase in the bypass times for testing and the CTs for both the SSPS and relay protection for RPS and ESFAS instrumentation, and (2) a revised action statement for an inoperable slave relay. In Section 4.0 of the SE that approved WCAP-14333, the NRC staff specified the following conditions and limitations on the applicability of the WCAP on a plant-specific basis:

1. Confirm the applicability of WCAP-14333 analyses to their plant.
2. Address the Tier 2 and Tier 3 analyses. Licensees are to (1) confirm that the necessary restrictions will be placed on concurrent equipment outages in order to avoid risk significant configurations, and (2) describe the provisions of the configuration risk management program consistent with the guidance of draft RG 1065 (DG-1065) for assessing risk associated with various planned and unplanned work activities.

WCAP-15376 Conditions

WCAP-15376 justifies an increase in the (1) bypass times for testing and CTs for RTBs, and (2) STI for components of the RPS. In Section 5.0 of the SE that approved WCAP-15376, the NRC staff specified the following conditions and limitations on the applicability of the WCAP on a plant-specific basis:

1. A licensee is expected to confirm the applicability of WCAP-15376 to their plant, and to perform a plant-specific assessment of containment failures and address any design or performance differences that may affect the proposed changes.
2. Address the Tier 2 and Tier 3 analyses including risk significant configuration insights and confirm that these insights are incorporated into the plant-specific CRMP.
3. The risk impact of concurrent testing of one logic cabinet and associated RTB needs to be evaluated on a plant-specific basis to ensure conformance with WCAP-15376 should be confirmed to be applicable to the plant-specific configuration.
4. To ensure consistency with the reference plant, the model assumptions for human reliability in WCAP-15376 should be confirmed to be applicable to the plant-specific configuration.
5. For future digital upgrades with increased scope, integration and architectural differences beyond that of Eagle 21, the [NRC] staff finds that generic applicability of WCAP-15376 to future digital systems not clear and should be considered on a plant-specific basis.

In addition to these five SE conditions, the licensee stated that a commitment was made by the WOG in the response to NRC Question 18 (Appendix D of WCAP-15376) that requires that each plant review its setpoint calculation methodology and assumptions to determine the impact of extending the STI of the COT from 92 to 184 days.

Applicability of WCAPs to WCGS

The licensee addressed these conditions and limitations in Attachment VI to its application. Attachment VIA is the proprietary version and Attachment VIB is the non-proprietary version. In its letter dated April 26, 2004, the NRC staff concluded that in accordance with 10 CFR 2.390 the proprietary information in Attachment VIA would be withheld.

In Attachment VIA to the application, the licensee addressed the applicability of both WCAPs to WCGS by providing tables comparing RTS/ESFAS plant-specific data to that assumed in the WCAPs. Based on a review of this data, the NRC staff concludes that WCAP-14333 and WCAP-15376 can be applied to the RTS and ESFAS instrumentation at WCGS.

Tier 2 Analyses

In Attachment I to the application, pages 9 to 11, the licensee addressed the results of the Tier 2 analysis performed for WCGS based on WCAP-14333 and WCAP-15376. Tier 2, the avoidance of risk-significant plant-specific configurations, considers potential risk-significant plant operating conditions.

For WCAP-14333, the licensee provided information based on the responses to requests for additional information (RAI) issued by the NRC staff in the review of WCAP-14333. The licensee stated that for its application, Westinghouse performed (1) an evaluation of equipment according to its contribution to plant risk while the equipment covered by the proposed CTs are out-of-service for test or maintenance, and (2) an importance analyses for 25 top events in the event trees for each of the test or maintenance configurations associated with the proposed CTs. This importance analysis determined the system importance for plant configurations with (1) no ongoing test and maintenance activities (all components available), and (2) ongoing test or maintenance activities individually on the analog channels, logic trains, master relays, and slave relays. The licensee explained that, with test or maintenance activities in progress, the component or train involved is assumed to be unavailable. Therefore, the importance analysis compared cases with the following two situations:

- The case with individual components not available.
- The case with all components available.

The licensee stated that the results in terms of importance ranking were the following:

- For the cases of analog channels, master relays, and slave relays, the importance rankings among the systems involved did not change.
- For the case of an SSPS logic train in maintenance, several systems (auxiliary feedwater (AFW), reactor trip, high pressure injection, low pressure injection, and containment cooling) have a relatively significant increase in their importance ranking.

In addition, in terms of ICCDP values for the various test and maintenance configurations that WCGS may be in when the proposed CTs would be in effect, the licensee stated that the only configuration that significantly impacts CDF is that with a logic train inoperable. Based on this, the licensee concluded that the only plant configuration with an appreciable impact on CDF or a significant impact on the relative importance of other systems is that configuration of one logic train of a system being inoperable. Based on this conclusion, the licensee further stated the following about Tier 2 limitations:

- Tier 2 limitations are appropriate when a logic train is inoperable; however,

- Tier 2 limitations are not appropriate when a slave relay, master relay, or analog channel is inoperable.

Based on these Tier 2 limitations, the licensee stated that, to meet the WCAP-14333 SE condition to include Tier 2 insights in the decision making process before taking equipment out-of-service, there will be the following restrictions on concurrent removal of certain equipment when a logic train is inoperable for maintenance:

- To preserve the anticipated transient without scram (ATWS) mitigation capability, activities that would degrade the availability of the AFW system, reactor coolant system (RCS) pressure relief system (i.e., pressurizer power operated relief valves and safety valves), ATWS mitigation system actuation circuitry (AMSAC), or turbine trip should not be scheduled when a logic train is inoperable for maintenance.
- To preserve loss-of-coolant accident (LOCA) mitigation capability, one complete train of the emergency core cooling system (ECCS) that can be actuated automatically must be maintained when a logic train is inoperable for maintenance.
- To preserve reactor trip and safeguards actuation capability activities that cause master relays or slave relays in the available train to be unavailable and activities that cause analog channels to be unavailable should not be scheduled when a logic train is inoperable for maintenance.
- Activities on electrical systems (e.g., alternating current (AC) and direct current (DC) power) and cooling systems (e.g., essential service water and component cooling water systems) that support the systems or functions listed in the previous three bullets should not be scheduled when a logic train is inoperable for maintenance. In other words, the licensee stated that any train that supports a function noted in the previous three bullets (e.g., ATWS mitigation capability, AFW system, RCS pressure relief system, LOCA mitigation capability, electrical systems, cooling systems) must be available.

The licensee has committed to follow these restrictions and has listed them in Attachment V to its application as regulatory commitments. In a clarification of the use of the term safeguards actuation capability above, the licensee stated that the reference to this capability in the fourth bullet above is a reference to ESFAS capability.

The licensee clarified one point concerning the importance, or lack of importance, of the containment cooling system in the WCGS PRA. The importance ranking discussed above in terms of WCAP-14333 showed a relatively significant increase in importance ranking when a logic train in the containment cooling system is inoperable. The licensee explained that, based on the WCGS PRA, containment cooling has no effect on CDF. Therefore, the licensee stated that increasing the availability of the containment system will not offset or counter an inoperable logic train. This is the reason that the containment cooling system was not included in the Tier 2 restrictions given above for WCGS.

In reviewing the licensee's discussion of restrictions on concurrent removal of equipment when a logic train is inoperable for maintenance, the NRC staff concludes that the licensee has satisfactorily addressed the Tier 2 analyses and avoidance of risk-significant plant-specific configurations required to implement WCAP-14333 at WCGS.

For WCAP-15376, the licensee stated that to meet the WCAP-15376 SE condition to include Tier 2 insights in the decision making process before taking equipment out-of-service, there will be the following Tier 2 restrictions on concurrent removal of certain equipment when an RTB is out-of-service (e.g., inoperable for maintenance):

- Because the probability of failing to trip the reactor on demand will increase when an RTB train is removed from service, systems designed for mitigating an ATWS should be maintained available. RCS pressure relief (pressurizer relief and safety valves), AFW flow for RCS heat removal, AMSAC, and turbine trip are important as alternative ATWS mitigation. Therefore, activities that degrade the availability of these systems should not be scheduled when an RTB train is inoperable for maintenance.
- Because of the increased dependence on the available reactor trip train when one logic train or one RTB train is inoperable for maintenance, activities that (1) degrade other components of the RTS, including master relays or slave relays, and (2) cause analog channels to be unavailable, should not be scheduled when a logic train or an RTB train is inoperable for maintenance.
- Activities on electrical systems (e.g., AC and DC power) and cooling systems (e.g., essential service water) that support the systems or functions listed in the previous two bullets should not be scheduled when an RTB train is inoperable for maintenance. In other words, the licensee explained that Tier 2 restrictions will control activities on the electrical and cooling support systems that support functions noted in the previous two bullets (e.g., ATWS mitigation capability, AFW system, RCS pressure relief system, LOCA mitigation capability, electrical systems, cooling systems) such that at least one complete train of both the electrical and cooling support systems are available when RTBs are scheduled for maintenance.

The licensee stated that the above restrictions for WCGS are based on the recommended Tier 2 restrictions in Section 8.5 of the WCAP for the case of when an RTB train is inoperable for maintenance. The NRC staff has compared the above three restrictions to the three restrictions given in Section 8.5 of the WCAP and concludes that the above Tier 2 restrictions for WCGS are the same. The licensee has committed to follow these restrictions and has listed them in Attachment V to its application letter as regulatory commitments.

In reviewing the licensee's discussion of restrictions on concurrent removal of equipment when a logic train is inoperable for maintenance, the NRC staff concludes that the licensee has satisfactorily addressed the Tier 2 analyses and avoidance of risk-significant plant-specific configurations required to implement WCAP-15376 at WCGS.

Tier 3 Analyses

On page 11 of Attachment I of the licensee's application, the licensee addressed the results of the Tier 3 analysis performed for WCGS based on WCAP-14333 and WCAP-15376. Tier 3, risk-informed plant configuration control and management, addresses the plant-specific CRMP, including the risk-informed assessment for outages and what SSCs are controlled by the program.

In its application, the licensee stated that Tier 3 requires a proceduralized program, the WCGS Operational Risk Assessment Program (ORAP), the plant-specific CRMP, to assess the risk associated with both planned and unplanned work activities. The objective of Tier 3 is to ensure that the impact on plant operational risk from out-of-service equipment is evaluated before performing any maintenance work. A viable program in accordance with Section 2.3 of RG 1.177 would be "one that is able to uncover risk-significant plant equipment outage configurations in a timely manner during normal plant operation." In other words, Tier 3 provides assurance of continuing plant safety for the case that the licensee's Tier 2 evaluations have not developed sufficient Tier 2 operational restrictions (which are discussed above) to cover all possible risk-significant plant configurations (e.g., emergent conditions).

The licensee stated in its application that procedures are in place at WCGS to address this Tier 3 objective. The licensee stated that the risk impact associated with performance of maintenance and testing activities is evaluated in accordance with the WCGS ORAP in accordance with administrative procedure AP 22C-003. An operational risk assessment is performed for activities within a weekly schedule and compensatory measures are addressed for risk-significant activities. The weekly scheduled activities and the operational risk assessment are reviewed by the WCGS probabilistic safety assessment group and approved by the plant manager (or designee). This process also addresses the impact on the operational risk assessment from any added or emergent activities, and any activities which are not meeting completion schedules.

In reviewing the licensee's discussion on Tier 3 risk-informed configuration risk management discussed above, the NRC staff concludes that the licensee has satisfactorily addressed the Tier 3 analyses required in the SEs for WCAP-15376 and WCAP-15376 so that both WCAPs may be implemented at WCGS.

Relationship Between Tier 2 and Tier 3 for WCAP-14333 and WCAP-15376

The above Tier 2 restrictions are the avoidance of risk-significant plant-specific configurations based on WCAP-14333 and WCAP-15376, and Tier 3 is the risk-informed plant configuration control and management of 10 CFR 50.65, which includes the CRMP to make risk-informed assessments. The Tier 2 restrictions discussed above are not always in effect, but the CRMP being part of 10 CFR 50.65 operates at all times managing the risk during maintenance at the plant. The above Tier 2 requirements exist only because WCAP-14333 and WCAP-15376 and only when the plant is in an extended test bypass time, CT, or STI that is based on the two WCAPs.

In discussing the Tier 2 restrictions, the licensee further stated that these restrictions would not be applied when a logic train is being tested under the existing test bypass time notes in TSs 3.3.1 Condition Q, 3.3.2 Condition C, and 3.3.2 Condition G, which allow one train to be bypassed for up to 4 hours for surveillance testing provided the other train is operable. In other words, as long as the inoperable train is inoperable only because of surveillance testing and only for up to 4 hours, the above restrictions would not be applied to provide risk-based compensatory measures. This is because the inoperable train is only being considered inoperable because of the surveillance testing and the current TSs for WCGS allow a test bypass time of 4 hours. The licensee further stated, because these three conditions are typically entered due to equipment failure and unplanned for versus planning to take the equipment out-of-service for maintenance, it follows that some of the Tier 2 restrictions may not be met at the time of entry into any of the conditions for equipment failure. If this situation were to occur (i.e., a train becomes inoperable because of equipment failure) during the proposed extended 24-hour CT to restore the inoperable train to operable status, the licensee stated that the Tier 3 CRMP will assess the emergent condition and decide from a risk management perspective to (1) restore the inoperable logic train and exit the condition, (2) implement the Tier 2 restrictions (i.e., the four bullets above), or (3) shut the plant down. Therefore, the CRMP could decide to shut down the plant sooner than required by the proposed extended 24-hour CTs in any of the three TS conditions; however, because the current TSs (based on WCAP-10271) for the three conditions allow 6 hours to restore the inoperable train to operable status before requiring the plant to start shutting down, it would be unlikely that the Tier 3 CRMP would have the plant start shutting down before the train has been inoperable for at least 6 hours.

The following TS conditions are similar to the above TSs 3.3.1 Condition Q, 3.3.2 Condition C, and 3.3.2 Condition G in that these conditions have notes about bypassing a train and requirements to restore the inoperable train or channel to operable status: TSs 3.3.1 Condition R and 3.3.2 Condition K. However, the licensee did not include these conditions in its discussion that some of the above Tier 2 restrictions may not be met under certain conditions. The reason for this is that TS 3.3.1 Condition R is for inoperable RTBs and TS 3.3.2 Condition K is for analog channels, whereas TSs 3.3.1 Condition Q, 3.3.2 Condition C, and 3.3.2 Condition G are for logic trains. RTBs are addressed in WCAP-15376 and TS 3.3.1 Condition R would come under the Tier 2 restrictions in WCAP-15376 discussed below and the Tier 3 CRMP requirements on pages 10 and 11 of Attachment I to the licensee's application. For analog channels, there are no Tier 2 or Tier 3 restrictions.

For the proposed changes to TS conditions where the required action is to place the channel in trip, the licensee also did not include these conditions in its discussion above on Tier 2 requirements which may not be met under certain conditions. The reason that these TS conditions were not included in the discussion is that they are for analog channels and Tier 2 restrictions are not required for inoperable analog channels.

In discussing the Tier 2 restrictions for RTBs from WCAP-15376, the licensee further stated that these restrictions would not be applied when an RTB train is being tested under the existing note in TS 3.3.1 Condition R, which allows one train to be bypassed for up to 4 hours for surveillance testing provided the other train is operable. In other words, as long as the inoperable train is inoperable only because of surveillance testing and only for up to 4 hours,

the above restrictions would not be applied to prevent the surveillance testing of the train. This is because the inoperable train is only being considered inoperable because of the surveillance testing. The licensee further stated, because this condition is typically entered due to unplanned RTB train failure versus planning to take the RTB train out-of-service for maintenance, it follows that some of the Tier 2 restrictions may not be met at the time of entry into any of the conditions for RTB train failure. If this situation were to occur (i.e., an RTB train becomes inoperable because of equipment failure) during the proposed extended 24-hour CT to restore the inoperable train to operable status, the licensee stated that the Tier 3 CRMP will assess the emergent condition and decide from a risk management perspective to (1) restore the inoperable RTB train and exit the condition, (2) implement the Tier 2 restrictions, or (3) shut the plant down. Therefore, the CRMP could decide to shut down the plant sooner than required by TS 3.3.1 Condition R.

In reviewing the licensee's application, the NRC staff has reviewed how the licensee will implement the Tier 2 and Tier 3 requirements from WCAP-14333 and WCAP-15376, and concludes that the licensee's implementation, as described above, is acceptable.

Third Through Fifth Conditions in SE on WCAP-15376

The only two conditions in the NRC staff's SE on WCAP-14333 and the first two conditions in the SE on WCAP-15376 were addressed in the above discussions on Tier 2 and Tier 3 analyses. The remaining SE conditions concern only WCAP-15376. These remaining SE conditions were addressed by the licensee on pages 12 through 13 of Attachment I to its application.

The third SE condition on WCAP-15376 is the following: the risk impact of concurrent testing of one logic cabinet and associated RTB to be evaluated on a plant-specific basis to ensure conformance with the WCAP should be confirmed to be applicable to the plant-specific configuration.

The licensee stated (1) that this condition is answered by the WOG's response to NRC RAI Question 4 in the NRC staff's review of WCAP-15376, (2) that this condition is, therefore, addressed on a plant-specific basis by demonstrating the WCAP-15376 analysis is applicable to WCGS, and (3) that this demonstration of WCAP applicability to WCGS is given in Attachment VI to its application.

The licensee explained that the response to NRC RAI Question 4 provided the ICCDP for the configuration of both logic train and associated RTB train out-of-service for preventive maintenance for a total of 30 hours, which is 24 hours for the CT and 6 hours for plant shutdown to Mode 3. The licensee stated that because of the following:

- The configuration addressed in NRC RAI Question 4 is the same configuration in the third SE condition, and 30 hours is the same unavailability time for both cases.
- The ICCDP in WCAP-15376 for the 30-hour unavailability is 3.2E-07.

- Because WCAP-15376 is applicable to WCGS, the plant-specific ICCDP for WCGS for the configuration is not greater than 3.2E-07.
- The ICCDP of 3.2E-07 is less than the acceptance criterion of 5E-07 in RG 1.177.

The plant-specific ICCDP of concurrent testing of one logic cabinet and associated RTB at WCGS is within the acceptance criterion of RG 1.177.

The NRC staff has reviewed the licensee's basis for concluding that it has acceptably addressed the third SE condition for WCAP-15376 and finds that this basis is acceptable. In the above discussion of the applicability of the WCAPs to WCGS, the NRC staff addressed the licensee's basis that WCAP-15376 can be applied to WCGS and concluded that the WCAP can be applied to WCGS.

The fourth SE condition on WCAP-15376 is the following: to ensure consistency with the reference plant, the model assumptions for human reliability in WCAP-15376 should be confirmed to be applicable to the plant-specific configuration.

The licensee stated that it addressed this SE condition in Attachment VI to its application. The licensee has reviewed the key assumptions for operator actions in WCAP-15376 and compared them to operator actions at WCGS. The licensee provided Table 5, "WCAP-15376 Implementation Guidelines: Applicability of the Human Reliability Analysis," that addresses plant procedures in place for operator action. Based on its review of the contents of Attachment VI, as described above, the NRC staff concludes that the licensee has confirmed that the model assumptions for human reliability in WCAP-15376 are applicable to WCGS.

The fifth SE condition on WCAP-15376 is the following: for future digital upgrades with increased scope, integration and architectural differences beyond that of Eagle 21, the NRC staff finds that generic applicability of WCAP-15376 to future digital systems not clear and should be considered on a plant-specific basis.

The licensee stated that this condition does not apply to WCGS in that future digital upgrades will be the subject of future applications to the NRC.

Based on the above discussion, the NRC staff concludes that the licensee has acceptably addressed SE Conditions 3 through 5 for WCAP-15376.

Additional Commitment Through WOG Response to NRC Question 18

In addition to the five SE conditions for WCAP-15376, the licensee stated that a commitment was made by the WOG in the response to NRC Question 18 (Appendix D of WCAP-15376) that requires that each licensee review its setpoint calculation methodology and assumptions to determine the impact of extending the surveillance interval of the COT from 92 to 184 days. The licensee addressed this commitment in its application.

Because the drift term used in the WCGS setpoint study was originally based on a 30-day STI for the COT, the licensee stated that the instrument drift should remain within the assumptions of the WCGS setpoint study; however, it further stated that this expectation will be confirmed using future surveillance results following the change to the 184-day interval. This commitment was listed in Attachment V of the application as a regulatory commitment. Based on the licensee's regulatory commitment, the NRC staff concludes that the licensee has acceptably addressed this additional commitment made through the WOG response to NRC Question 18 for WCAP-15376.

Effect of Applying Both WCAPs to Plant

The licensee addressed the effect of applying both WCAP-14333 and WCAP-15376 to WCGS in providing the combined WCAPs risk metric results. Because WCGS is changing from the WCAP-10271 CT/bypass test time conditions to the WCAP-15376 conditions they are requesting less of a change than a licensee starting from the pre-TOP (or pre-WCAP-10271) conditions. This effect of implementing both WCAPs is discussed on page 8 of Attachment I to the licensee's application where there is a table of the change in CDF and LERF per year, ICCDP, and ICLERP for the following cases: first, the change from WCAP-10271 to WCAP-14222, and then second, the change from WCAP-14333 to WCAP-15376. The changes are for two-out-of-four (2/4) logic and two-out-of-three (2/3) logic trains. The changes range from a low of $1.1E-11$ to a high of $8.5E-07$, for the different logics and for maintenance or testing. The acceptance criteria in the licensee's table comes from the acceptance guidelines in Section 2.2.4 of RG 1.174 (for Δ CDF and Δ LERF) and Section C.2.4 of RG 1.177 (for ICCDP and ICLERP). The values of Δ CDF and Δ LERF in the table for 2/4 logic and 2/3 logic are taken from (1) the differences in CDF in Table 8.4 and the differences in LERF in Table Q13.1 for "TOP" and "proposed" of WCAP-14333, and (2) Tables 8.29 and 8.32 of WCAP-15376 for Case 7.

The licensee stated that values of ICCDP and ICLERP depend on the particular component being tested or in maintenance (i.e., the values are situational in nature because they depend only on specific component and the proposed CT); however, the values of Δ CDF and Δ LERF are cumulative from the current licensing basis for WCGS (i.e., WCAP-10271) to the new proposed licensing basis (i.e., WCAP-14333 and WCAP-15376). The licensee stated that the change in risk given in the table in the application for ICCDP and ICLERP, and the cumulative Δ LERF (i.e., from WCAP-10271 to WCAP-15376) are within the NRC acceptance criterion; however, the cumulative Δ CDF of $1.16E-06$ (for 2/4 logic) and $1.46E-06$ (for 2/3 logic), and the sum of the probabilities for the change from WCAP-10271 to WCAP-15376, are above the RG 1.174 Δ CDF acceptance criterion of less than $1E-06$.

It is stated in RG 1.174 that, if the Δ CDF for a risk-informed amendment is greater than $1.0E-06$, then the licensee must reasonably show that the total CDF is less than $1.0E-04$. The licensee addressed the fact that the Δ CDFs for 2/4 logic and 2/3 logic for the proposed amendment are above the acceptance criterion in RG 1.174 by stating that Section 8.4.4 and Table 8.33 of WCAP-15376 addresses the Δ CDF for the case of pre-WCAP-10271 (pre-TOP) to WCAP-15376 and shows the Δ CDF for the 2/4 logic and 2/3 logic are $5.7E-07$ and $1.1E-06$, respectively. The sequence in implementing WCAP reports in the relaxation of bypass test times, CTs, and STIs for RTS/ESFAS instrumentation has been in the following order:

pre-WCAP-10271 (pre-TOP), WCAP-10271, WCAP-14333, and WCAP-15376. WCAP-10271 has already been implemented in previous amendments at WCGS, and the licensee now proposes to implement WCAP-14333 and WCAP-15376.

Because the Δ CDF for 2/4 logic for a change from pre-TOP to WCAP-15333 is less than the acceptance criterion, the licensee concludes that the proposed amendment for 2/4 logic meets the Δ CDF acceptance criterion in RG 1.174. This means that although the Δ CDF for 2/4 logic for the proposed amendment (i.e., applying the changes from WCAP-10271 to WCAP-15376) does not meet the RG 1.174 Δ CDF acceptance criterion, starting from an earlier point (i.e., pre-TOP) in the development CTs and STIs in the WCGS TSs, the change to the proposed amendment does meet the acceptance criterion. The NRC staff has considered this application of calculating Δ CDF to meet the RG 1.174 acceptance criterion and concludes that this is an acceptable approach to using the guidance in RG 1.174.

The licensee, however, also stated that the cumulative Δ CDF in Table 8.3.3 of WCAP-15376 for the 2/3 logic is still slightly greater than the RG 1.174 Δ CDF acceptance criterion. The licensee explained that the 1.1E-06 probability is for the case of pre-WCAP-10271 to WCAP-15376 and the proposed amendment for WCGS is only for the case of WCAP-10271 to WCAP-15376. Therefore, the Δ CDF for changing from WCAP-10271 to WCAP-15376 (the proposed amendment) should have a Δ CDF of less than 1.0E-06. Also, the licensee pointed out that there is the supplemental consideration of the shutdown risk avoided with extended CTs, which is discussed in Section 8.4 of WCAP-15376. Based on this, the licensee concluded that the Δ CDF for the proposed amendment met the acceptance criterion of RG 1.174. After its review of the licensee's justification, the NRC staff concluded that it agreed with the licensee although, in the discussion of shutdown and transition risk in Section 3.1.4 of WCAP-15376, the staff stated that the evaluation of transition risk would only occur when unscheduled corrective maintenance cannot be completed within the allotted time specified in the TSs and, in the case of the proposed amendment, the maintenance would be scheduled.

Based on the above discussion, the NRC staff concludes that it is acceptable for the licensee to apply both WCAP-14333 and WCAP-15376 to WCGS and that the licensee has acceptably addressed the acceptance criteria in RGs 1.174 and 1.177.

4.4 Plant-Specific Evaluations of RTS/ESFAS Instrumentation Functions

Not all of the RTS/ESFAS instrumentation functions listed in Tables 3.3.1-1 and 3.3.2-1 have been generically approved for the extended test bypass times, CTs, and STIs justified by WCAP-14333, and WCAP-15376. Based on its review and approval of WCAP-10271, WCAP-14333, and WCAP-15376, the NRC staff concludes that the functions listed in TS Tables 3.3.1-1 and 3.3.2-1 of the Westinghouse STS in NUREG-1431, Revision 2, dated April 2001, have been approved for changes to test bypass times, CTs, and STIs through the approval of the WCAPs except for the following functions in ESFAS TS Table 3.3.2-1, which are also listed as exceptions in TSTF-411R1 and TSTF-418R2:

- ESFAS Function 7.b: Refueling water storage tank (RWST) level - low low (coincident with safety injection).

- ESFAS Function 7.c: RWST level - low low (coincident with safety injection and containment sump level - high).

In order to apply the TS time relaxations justified in the WCAPs to RTS/ESFAS functions not covered by the WCAPs, licensees must submit plant-specific evaluations for NRC review and approval. On page 13 of Attachment I to its application, the licensee stated that the changes to the bypass test times, CTs, and STIs were approved by NRC for the functions in TS Tables 3.3.1-1 and 3.3.2-1, except for ESFAS Function 7.b given above. ESFAS Functions 7.c is not listed by the licensee because this function is not in TS Table 3.3.2-1.

In identifying that ESFAS Function 7.b was not covered by the NRC-approved WCAPs, the licensee stated further that this function had been approved by NRC in Amendment No. 43 issued March 29, 1991, in item 11 (pages 6 and 7) of the NRC staff's SE. The NRC staff reviewed its SE dated March 29, 1991, for Amendment No. 43, and concluded that the amendment approved the application of WCAP-10271 to the above ESFAS function. Based on this, the NRC staff further concludes that the licensee has met the requirement that it submit acceptable plant-specific evaluations for the RTS/ESFAS functions included in its amendment application, but not included in WCAP-14333 and WCAP-15376.

Therefore, based on the above discussion, the NRC staff concludes that the RTS/ESFAS functions, which are associated to the changes in test bypass times, CTs, and STIs in the licensee's proposed amendment, are covered by WCAP-10271, WCAP-14333, or WCAP-15376.

Conclusions

Based on the evaluation given above, the NRC staff concludes that the licensee in its application has demonstrated the following:

- WCAP-14333 and WCAP-15376 apply to WCGS.
- The conditions in the SEs whereby the NRC staff approved the WCAPs have been met at WCGS.
- The RTS/ESFAS instrumentation associated with the proposed changes (see Table 1 attached to this SE) have been approved by the NRC staff to have the relaxations in test bypass times, CTs, and STIs given in the WCAPs.

4.5 Proposed Changes to the TSs

The proposed TS changes described in Section 4.1 of this SE are the 21 changes listed in Table 1 attached to this SE. They are listed in the order of the licensee's marked-up TS pages in Attachment III to the application. The proposed TS changes are evaluated below as changes that (1) are based directly on WCAP-14333 and WCAP-15376, and (2) deviate from the WCAPs:

4.5.1 Changes Based Directly on WCAP-14333 and WCAP-15376

The NRC staff approved TSTF-411R1 and TSTF-418R2 to provide acceptable TSs to implement the changes given in WCAP-15376 and WCAP-14333, respectively, for RTS/ESFAS functions listed in TS Tables 3.3.1-1 and 3.3.2-1.

The licensee's proposed changes to TSs 3.3.1 and 3.3.2 that are the same as the TSs in TSTF-411R1 and TSTF-418R2 are change numbers 1 and 3 through 21 in Table 1 attached to this SE. Change numbers 8, 9, and 19, which are listed in Table 3 attached to this SE for deviations to the TSTFs, are included in this section based on the discussion in Section 4.5.2.

Based on the following:

- The licensee has demonstrated that WCAP-14333 and WCAP-15376 applies to WCGS.
- The licensee has demonstrated for WCGS that it has met the conditions in the NRC staff's SEs that approved WCAP-14333 and WCAP-15376.
- The licensee has made acceptable regulatory commitments on Tier 2 restrictions in its application, which are discussed in Section 4.3 of this SE.
- The RTS/ESFAS functions associated with the proposed TS changes have been approved for the extended test bypass times, CTs, and STIs in the WCAPs, as discussed in Section 4.4.
- The proposed TS changes are the same as the TS wording in TSTF-411R1 and TSTF-418R2 which NRC approved for implementing WCAP-14333 and WCAP-15376.
- The licensee has acceptably implemented the maintenance rule (10 CFR 50.65) at WCGS and the last inspection by the NRC to determine if the licensee's maintenance efforts met the regulation identified no findings of significance as documented in Inspection Report 50-482/2004002 dated May 11, 2004.
- The licensee's conclusion on page 19 of Attachment I to its application that there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, which is operation with the proposed test bypass times, CTs, and STIs.

The NRC staff concludes that the proposed changes identified as change numbers 1 and 3 through 21 in Table 1 attached to this SE meet 10 CFR 50.36 because the proposed test bypass times, CTs, and STIs are based on reasonable protection of the public health and safety in that there is reasonable assurance that the RTS/ESFAS functions affected by these proposed TS changes will perform their required safety functions in accordance with the design basis accidents in Chapter 15 of the UFSAR, based on the proposed test bypass times, CTs, and STIs.

4.5.2 Changes that Deviate from WCAP-14333 and WCAP-15376

The licensee stated in its application that there are proposed changes to the TSs that are deviations from the two TSTFs in that the changes are either (1) simply different from those in TSTF-411R1 and TSTF-418R2 for plant-specific reasons, or (2) required because of another change which is based on the TSTFs (i.e., a change based on either of the two TSTFs requires another change not given in either of the TSTFs). The changes identified by the licensee as deviations from the TSTFs are listed in Table 3 attached to this SE.

For the first item in Table 3 attached to this SE, in its application and the supplemental letter dated October 7, 2004, the licensee has proposed different required actions for TS 3.3.1 Condition D. The licensee stated that Condition D was restructured to avoid confusion as to when a neutron flux map for quadrant power tilt ratio (QPTR) is required. Condition D in TSTF-418R2 could "incorrectly lead an operator to believe that he could pursue just the option of Required Actions D.1.1 and D.1.2, potentially overlooking the requirement to do a flux map for QPTR within 12 hours per the Note above SR 3.2.4.2." The licensee also stated that the format of the STS is such that the required actions with shorter CTs are supposed to appear before those with longer CTs and the proposed Condition D follows this format. The licensee concluded with the statement that the proposed TS 3.3.1 Condition D captures the test bypass time of 12 hours and the maintenance time before tripping of 72 hours, while eliminating the QPTR and formatting confusions.

In reviewing this deviation from TSTF-418R2, the NRC staff has decided that by adopting the 72-hour CT allowance in TSTF-418R2 for placing a power range neutron flux (PRNF) channel in trip, Condition D can be restructured as proposed by the licensee to adopt the STS formatting convention for listing increasing CTs. This is accomplished by combining the required action requirement to reduce power to less than or equal to 75 percent rated thermal power (RTP) (Required Action D.1.2 of TSTF-418R2) with the note that specifies performing SR 3.2.4.2 (Required Action D.2.2 of TSTF-418R2). Because of this and because the PRNF input to QPTR is not credited at thermal power less than 75 percent RTP, the NRC staff concludes that this deviation from TSTF-418R2 is acceptable.

For the second item, the licensee has stated that the notes for test bypass times for plants with installed bypass test capability (i.e., Inserts 1, 2, 6, 7, 9, 17, and 18 for required action notes on channels being bypassed for surveillance testing in TSTF-418R2) are not used for the WCGS TSs because the plant does not have this capability for analog channels, except for ESFAS Function 2.c, containment spray, containment pressure high-3. The licensee has decided not to propose the bypass test capability note for ESFAS Function 2.c for TS 3.3.2 Condition E, even though the licensee has proposed to extend the test bypass time in the note for this condition in change number 15. Because it is not a requirement for licensees' with installed bypass test capability to propose these inserts and it is only one function at WCGS that has this capability, the NRC staff does not have a disagreement with this decision.

For the third item, the licensee stated that it did not propose the changes in TSTF-418R2 regarding the reactor coolant pump (RCP) breaker position RTS trip function because this function is not used at WCGS. Based on this, the NRC staff concludes that the deviation from the TSTF is acceptable.

For the fourth item, the licensee stated that it proposed the change in TSTF-411R1 regarding the TS 3.3.1 condition for RTBs which superceded the change in TSTF-418R2. The licensee explained that it proposed Option 3 of Insert 6 in TSTF-411R1. This refers to Insert 6, reviewer's note, for the TS 3.3.1 Bases for TSTF Condition O (this is Condition R for the WCGS TSs) in which there are three options listed for the implementation of WCAP-14333 with respect to WCAP-15376 and vice versa. The licensee stated that it has chosen Option 3 which is for the implementation of both WCAPs together in which TSTF-411R1 states that TSTF Condition O will contain only one note with 4 hours as the bypass test time for an RTB train. The deviation is that the licensee's proposed changes to TS 3.1.1 Condition R follow TSTF-411R1 instead of TSTF-418R2 and, therefore, the proposed changes are only a deviation to TSTF-418R2 because the licensee has followed the reviewer's note in TSTF-411R1. Because the licensee is following the guidance in TSTF-411R1 for implementing both WCAPs together, the NRC staff concludes that the proposed changes to TS 3.3.1 Condition R are not a deviation from both TSTFs. It is acceptable that TSTF-411R1 was followed instead of TSTF-418R2, and that the changes to TS 3.3.1 Condition R can be addressed as part of Section 4.5.1.

For the fifth item, the licensee has proposed extended test bypass times and CTs for TS 3.3.2 Condition K for ESFAS Function 7.b in change number 19, and this function was not included in either WCAP-14333 or WCAP-15376. This is addressed in Section 4.4 of this SE where the NRC staff concluded that this ESFAS function, based on the previous WCGS Amendment No. 43, was accepted by the NRC to be covered by WCAP-10271, and thus is now covered by WCAP-14333 and WCAP-15376. Based on this conclusion in Section 4.4, the NRC staff further concludes that the proposed changes to TS 3.3.2 Condition K for this ESFAS function can also be addressed as part of Section 4.5.1 because the proposed test bypass times and CTs do not deviate from the values in TSTF-418R2.

For the sixth and seventh items, the licensee stated that the STIs were relaxed in WCAP-15376 for the actuation logic and master relays associated with TSs 3.3.6, "Containment Purge and Exhaust Isolation Instrumentation," and 3.3.7, "Control Room Emergency Ventilation System Actuation Instrumentation." The licensee explained that these actuation logic and master relays are processed through the SSPS and the only SSPS-related entries contained in TS Tables 3.3.6-1 and 3.3.7-1 are for Containment Isolation - Phase A, which is ESFAS Function 3.a in TS Table 3.3.2-1. Therefore, the licensee concluded that the TSTF-411R1 changes for TSs 3.3.6 and 3.3.7 are not required for the WCGS TSs. Based on this evaluation, the NRC staff concludes that not including the TSTF-411R1 changes for TSs 3.3.6 and 3.3.7 in the proposed amendment is acceptable.

Of change numbers 2, 8, 9, and 19 listed in Table 3 attached to this SE, change numbers 8, 9, and 19 are shown above, in the discussions of the fourth and fifth items, to have the same TS wording that is in TSTF-411R1 or TSTF-418R2. Therefore, these changes are included in the previous Section 4.5.1.

For change number 2, the proposed change is addressed in the first item above. Based on the evaluation of the deviations to TSTF-411R1 and TSTF-418R2, the NRC staff concludes that either (1) the strict adoption of these TSTFs would either not be supported by the design of the RTS/ESFAS instrumentation at CPSES or be an unnecessary burden on the licensee without a compensating increase in quality or safety, or (2) the proposed change accounts for existing TS

requirements for RTS/ESFAS functions which are not included in the WCAPs or plant-specific evaluations. Based on this, the NRC staff concludes that the proposed deviations to the TSTFs provide reasonable protection of the public health and safety in that there is reasonable assurance that the RTS/ESFAS functions affected by these proposed TS changes will perform their required safety functions in accordance with the design basis accidents in Chapter 15 of the FSAR. Based on this conclusion, the NRC staff further concludes that the proposed deviations to the TSTFs in the attached Table 3 meet 10 CFR 50.36.

4.5.3 Conclusions as to the Proposed Amendment

In Sections 4.5.1 and 4.5.2 of this SE, the staff has concluded that the proposed amendment, which is change numbers 1 through 21 in Table 1 attached to this SE, meet 10 CFR 50.36. Based on these conclusions, the NRC staff further concludes that the proposed amendment is acceptable.

In Attachment IV to the application, the licensee showed the changes to the TS Bases that reflected the proposed amendment. Changes to the TS bases are controlled by TS 5.5.14, "Technical Specifications (TS) Bases Control Program." The NRC staff reviewed these changes to the TS Bases, and does not disagree with the changes.

In Attachment V to the application, the licensee identified regulatory commitments that address those administrative controls the licensee will put in place to meet the conditions in the SEs that approved WCAP-14333 and WCAP-15376. The licensee stated in its application that these commitments are put in place during the implementation of the amendment after it is approved. These regulatory commitments were discussed in Section 4.3 of this SE.

The NRC staff finds that reasonable controls for the licensee's implementation and subsequent evaluation of any changes to the above regulatory commitments are provided by the licensee's administrative processes, including its commitment management program. Should the licensee choose to incorporate a regulatory commitment into the emergency plan, FSAR, or other document with established regulatory controls, the associated regulations would define the appropriate change-control and reporting requirements. The NRC staff has determined that the commitments do not warrant the creation of regulatory requirements which would require prior NRC approval of subsequent changes. The NRC staff has agreed that Nuclear Energy Institute 99-04, Revision 0, "Guidelines for Managing NRC Commitment Changes," provides reasonable guidance for the control of regulatory commitments made to the NRC staff. (See Regulatory Issue Summary 2000-17, "Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC Staff," dated September 21, 2000.) The commitments should be controlled in accordance with the industry guidance or comparable criteria employed by a specific licensee. The NRC staff may choose to verify the implementation and maintenance of these commitments in a future inspection or audit.

4.5.4 Implementation of Amendment

In its application, the licensee requested to implement the amendment within 90 days from the date of issuance of the amendment. Because this would result in the amendment being implemented during the Spring 2005 refueling outage, scheduled for April through May 2005, the licensee has requested to implement the amendment within 180 days from the date of

issuance. The NRC staff concludes that this is acceptable.

5.0 STATE CONSULTATION

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

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (69 FR 5212). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

7.0 CONCLUSION

The Commission 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 the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Attachments: Table 1 – Specific Proposed Changes to the Technical Specifications
Table 2 – Proposed Changes in License Amendment Request
Table 3 – Licensee Identified Deviations from TSTFs

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Date: January 31, 2005

TABLE 1

SPECIFIC PROPOSED CHANGES TO THE TECHNICAL SPECIFICATIONS
AND RELATED RTS/ESFAS FUNCTIONS IN TS TABLES 3.3.1-1 AND 3.3.2-1

Specific Change to WCGS TSs	WCGS RTS/ESFAS Functions
1. Extend bypass testing time in note and extend CTs for TS 3.3.1 Condition D.	RTS Function 2.a
2. Rewrite required actions in TS 3.3.1 Condition D.	RTS Function 2.a
3. Extend bypass testing time in note and CTs for TS 3.3.1 Required Actions E.1 and E.2.	RTS Functions 2.b, 3.a, 3.b, 6, 7, 8.b, and 14
4. Extend bypass testing time in note and CTs for TS 3.3.1 Required Actions M.1 and M.2.	RTS Functions 8.a, 9, 10, 12, and 13
5. Extend bypass testing time in note and CTs for TS 3.3.1 Required Actions O.1 and O.2.	RTS Function 16.a
6. Extend CTs for TS 3.3.1 Required Actions P.1 and P.2.	RTS Function 16.b
7. Extend CTs for TS 3.3.1 Required Actions Q.1 and Q.2.	RTS Functions 17 and 21
8. Extend bypass testing time in note and CTs for TS 3.3.1 Required Actions R.1 and R.2.	RTS Function 19
9. Delete Note 2 for TS 3.3.1 Required Actions R.1 and R.2, state Note instead of Notes, and delete number 1.	RTS Function 19
10. Extend STI for SR 3.3.1.4 to 62 days.	RTS Functions 19 and 20
11. Extend STI for SR 3.3.1.5 to 92 days.	RTS Functions 18.b and 21
12. Extend STI for SRs 3.3.1.7 and 3.3.1.8 to 184 days.	RTS Functions 2.a, 2.b, 3.a, 3.b, 4, 5, 6, 7, 8.a, 8.b, 9, 10, and 14
13. Extend CTs for TS 3.3.2 Required Actions C.1, C.2.1, and C.2.2.	ESFAS Functions 1.b, 2.b, 3.a(2), 3.b(2), and 7.a
14. Extend bypass testing time in note and CTs for TS 3.3.2 Required Actions D.1, D.2.1, and D.2.2.	ESFAS Functions 1.c, 1.d, 1.e, 4.c, 4.d(1), 4.d(2), and 6.d
15. Extend bypass testing time in note and CTs for TS 3.3.2 Required Actions E.1, E.2.1, and E.2.2.	ESFAS Functions 2.c and 3.b(3)
16. Extend CTs for TS 3.3.2 Required Actions G.1, G.2.1, and G.2.2.	ESFAS Functions 4.b and 6.b

Specific Change to WCGS TSs	WCGS RTS/ESFAS Functions
17. Extend CTs for TS 3.3.2 Required Actions H.1 and H.2.	ESFAS Function 5.a
18. Extend bypass testing time in note and CTs for TS 3.3.2 Required Actions I.1 and I.2.	ESFAS Function 5.b
19. Extend bypass testing time in note and CTs for TS 3.3.2 Required Actions K.1, K.2.1, and K.2.2.	ESFAS Function 7.b
20. Extend STI for SRs 3.3.2.2 (actuation logic test) and 3.3.2.4 (master relay test) to 92 days.	ESFAS Functions 1.b, 2.b, 3.a(2), 3.b(2), 4.b, 5.a, 6.b, and 7.a
21. Extend STI for SR 3.3.2.5 COT to 184 days.	ESFAS Functions 1.c, 1.d, 1.e, 2.c, 3.b(3), 4.c, 4.d(1), 4.d(2), 5.b, 6.d, 7.b, and 8.b

TABLE 2

PROPOSED CHANGES IN WCGS LICENSE AMENDMENT REQUEST

The proposed changes in the licensee's application dated December 15, 2003, are grouped as follows:

1. Changes based on WCAP-14333 (i.e., TSTF-418, Revision 2).
2. Changes based on WCAP-15376 (i.e., TSTF-411, Revision 1).
3. Changes based on the RTS/ESFAS functions addressed in WCGS Amendment No. 43, issued March 29, 1991.
4. Deviations from the TSTF-411, Revision 1, and/or TSTF-418, Revision 2.

TS	Part of TS	Table 1 Change Number and Description of Change	Group
3.3.1	Condition D	1 – Extend CTs and bypass time	1
	Condition D	2 – Rewrite required actions	4
	Condition E	3 – Extend CTs and bypass time	1
	Condition M	4 – Extend CTs and bypass time	1
	Condition O	5 – Extend CTs and bypass time	2
	Condition P	6 – Extend CTs	1
	Condition Q	7 – Extend CTs	1
	Condition R	8 – Extend CTs and bypass time	1, 2
	Condition R	9 – Delete required action Note 2, and the number 1 for Note 1	1, 2
	SR 3.3.1.4	10 – Extend STI	2
	SR 3.3.1.5	11 – Extend STI	2
	SR 3.3.1.7	12 – Extend STI	2
	SR 3.3.1.8	12 – Extend STIs	2
3.3.2	Condition C	13 – Extend CTs	1
	Condition D	14 – Extend CTs and bypass time	1
	Condition E	15 – Extend CTs and bypass time	1
	Condition G	16 – Extend CTs	1

TS	Part of TS	Table 1 Change Number and Description of Change	Group
	Condition H	17 – Extend CTs	1
3.3.2	Condition I	18 – Extend CTs and bypass time	1
	Condition K	19 – Extend CTs and bypass time	1, 3
	SR 3.3.2.2	20 – Extend STI	2
	SR 3.3.2.4	20 – Extend STI	2
	SR 3.3.2.5	21 – Extend STI	2

TABLE 3

LICENSEE IDENTIFIED DEVIATIONS FROM TSTFs FOR WCGS TSs

In its application dated December 15, 2003, the licensee identified that (1) the following proposed technical specification changes in the application (and listed in attached Table 1) are deviations from the technical specification changes in TSTF-411, Revision 1, and TSTF-418, Revision 2:

Proposed TS Change, or Change to TS Bases	Table 1 Change No.	Description of Deviation from TSTFs
1. Required actions and CTs in TS 3.3.1 Condition D.	2	The required actions are different from those in TSTF-418R2; however, the extended test bypass time and CTs are the same as in TSTF-418R2.
2. Bypass test notes for installed bypass capability.	NA (not applicable)	The notes for bypass test capability for analog channels in TSTF-418R2 were not proposed because WCGS does not have this capability, except for ESFAS Function 2.c, and the licensee decided not to propose the note for this function.
3. RCP breaker position RTS trip function.	NA	No changes were proposed because this function is not used at WCGS.
4. TS 3.3.1 Condition R for RTBs.	8, 9	The changes follow TSTF-411R1 instead of TSTF-418R2.
5. The changes to TS 3.3.2 Condition K.	19	The proposed changes extend the test bypass time and CTs to the values in TSTF-418R2. The changes are for ESFAS Function 7.b based on the plant-specific evaluation in WCGS Amendment No. 43.
6. STS 3.3.6, "Containment Purge and Exhaust Isolation Instrumentation".	NA	No change proposed by licensee. The licensee stated that the TSTF-411R1 changes to STS 3.3.6 are not required for WCGS.
7. STS 3.3.7, "Control Room Emergency Filtration System Actuation Instrumentation".	NA	No change proposed by licensee. The licensee stated that the TSTF-411R1 changes to STS 3.3.7 are not required for WCGS.