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SOUTHERN NUCLEAR
A SOUTHERN COMPANY

May 9, 2016

Docket Nos.: 50-424
50-425

NL-16-0686

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Vogtle Electric Generating Plant, Units 1 and 2
Response to Request for Additional Information
Regarding Adoption of TSTF-432, Rev. 1
Change in Technical Specifications End States (WCAP-16294)

Ladies and Gentlemen:

By letter dated May 6, 2015, Southern Nuclear Operating Company (SNC) submitted a request to revise the Vogtle Electronic Generating Plant (VEGP), Units 1 and 2 Technical Specifications (TS), consistent with U.S. Nuclear Regulatory Commission (NRC) approved Technical Specification Task Force Traveler 432-A, Revision 1, "Change in Technical Specifications End States, WCAP-16294." These requests were supplemented by letter dated October 8, 2015.

By letter dated April 7, 2016, the NRC issued a request for additional information (RAI) regarding the SNC TS amendment request. The NRC RAI included questions related to a corresponding TS change for the Joseph M. Farley Nuclear Plant (FNP) Units 1 and 2. SNC responded to the FNP-related questions by letter dated April 13, 2016. Enclosure 1 provides the SNC response to the NRC RAIs pertaining to the VEGP amendment request. Enclosure 2 of this letter provides revised VEGP TS Bases mark-up pages that were submitted for information as part of the amendment request.

This letter contains no NRC commitments.

If you have any questions, please contact Ken McElroy at (205) 992-7369.

Mr. C.R. Pierce states he is Regulatory Affairs Director of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and, to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

C R Pierce

C. R. Pierce
Regulatory Affairs Director

CRP/RMJ

Sworn to and subscribed before me this 9 *day of* May, *2016.*

Laura L. Crapps
Notary Public

My commission expires: 10-8-2017

Enclosures: 1) Responses to Request for Additional Information
2) Marked up Bases Pages

cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer
Mr. D. R. Madison, Vice President – Fleet Operations
Mr. M. D. Meier, Vice President – Regulatory Affairs
Mr. B. K. Taber, Vice President – Vogtle 1 & 2
Mr. B. J. Adams, Vice President – Engineering
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U. S. Nuclear Regulatory Commission
Ms. C. Haney, Regional Administrator
Mr. R. E. Martin, NRR Senior Project Manager – Vogtle 1 & 2
Mr. W. D. Deschaine, Senior Resident Inspector – Vogtle 1 & 2

State of Georgia
Mr. J. H. Turner, Director- Environmental Protection Division

Vogtle Electric Generating Plant, Units 1 and 2
Response to Request for Additional Information
Regarding Adoption of TSTF-432, Rev. 1
Change in Technical Specifications End States (WCAP-16294)

Enclosure 1

Responses to Request for Additional Information

Basis for Request for Additional Information – 1

The LAR submitted by the licensee proposed to change the end state requirement for Condition K, specifically Required Action K.2.2, of VEGP TS 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," Function 7.a, "Semi-automatic Switchover to Containment Sump – Automatic Actuation Logic and Actuation Relays," is associated with this Condition, and requires two trains to be operable in Modes 1 through 3 and only one train to be operable in Mode 4. This differs from TSTF-432 and the STS which specify two trains being operable for Function 7.a (Full Automatic Switchover) in Modes 1 through 4.

Part of the justification in the TSTF-432 model safety evaluation (SE) for changing the Condition K end state for Function 7.a from Mode 5 to Mode 4 states that if one train is inoperable, the other train is available to initiate switchover to the containment sump. Since Function 7.a from the VEGP TSs only requires one train to be operable in Mode 4, this brings into question whether the model SE justification covers Function 7.a.

Request for Additional Information – 1

In the VEGP LAR, the licensee stated that the model SE for TSTF-432 was applicable to VEGP, Units 1 and 2, and it supports the incorporation of the LAR into the VEGP TSs. Please explain how the observation described above concerning TS 3.3.2 Condition K and Function 7.a meets the justification in the model SE for an inoperable train of Function 7.a in Mode 4.

SNC Response to Request for Additional Information – 1

Improved Standard Technical Specification (ISTS) 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," Function 7.a, "Automatic Switchover to Containment Sump – Automatic Actuation Logic and Actuation Relays," requires two trains of automatic actuation logic and actuation relays to be Operable in MODES 1 through 4. VEGP TS 3.3.2, " ESFAS Instrumentation," Function 7.a, "Semi-Automatic Switchover to Containment Sump – Automatic Actuation Logic and Actuation Relays," also requires two trains of automatic actuation logic and actuation relays to be Operable in MODES 1 through 4, but the Applicability is modified by a Note stating that "In MODE 4, only 1 train is required to be OPERABLE to support semi-automatic switchover for the RHR pump that is required to be OPERABLE in accordance with Specification 3.5.3, "ECCS-Shutdown.""

This difference in Applicability between VEGP TS 3.3.2, Function 7a, and ISTS 3.3.2, Function 7a, is explained in the Applicable Safety Analysis and Applicability portion of the VEGP TS 3.3.3.2 Bases for Function 7b, where it is stated, ". . . In MODE 4, only one train of Automatic Actuation Logic and Actuation Relays is required to be OPERABLE to support the single RHR train required OPERABLE in this MODE. . . ." The Limiting Condition for Operation for ISTS and VEGP TS 3.5.3, "Emergency Core Cooling Systems (ECCS) – Shutdown" are the same in that they both require only one ECCS train to be OPERABLE in MODE 4.

The evaluation of end state change for ISTS 3.3.2, Function 7a, in WCAP-16294, Rev. 1 states an initial premise that two trains of automatic actuation logic and actuation relays are operable in MODE 4. The assessment of the end state change states that:

> "If one train is inoperable, the other train is available to initiate switchover to the containment sump. In addition, the operator can perform the switchover manually. Placing the unit in Mode 5 does not increase the instrumentation available for event mitigation. Therefore, sufficient defense-in-depth is maintained when the endstate is changed from Mode 5 to Mode 4."

The basis for the end state change in TS 3.3.2, Function 7a, described in WCAP-16294, Rev. 0 is that a cooldown to Mode 4 leaves the unit in a state in which transients progress slower than at power, backup core cooling is available via RHR, there is increased time for operator actions, and there is a lower overall risk than proceeding to Mode 5. Large Early Release probability (LERP) in the shutdown modes would also be reduced due to lower levels of radionuclide inventory in the RCS, the slower nature of severe accident event progression, and increased time for operator actions and mitigation strategies if an event were to occur. In MODE 4, with one RHR train Operable, the operators would be prepared to address a unit transient requiring safety injection and recirculation knowing that manual initiation of the switchover from the RWST to the containment sump may be required.

For VEGP TS 3.3.2, Function 7a, the defense in depth assumption described in WCAP-16294, Rev. 0, that the operator can perform the switchover manually in the event that the automatic actuation logic and actuation relays are inoperable remains valid, as does the conclusion that placing the unit in MODE 5 does not increase the instrumentation available for event mitigation. As such, the risk and release reduction conclusions of WCAP-16294, Rev. 1, remain valid for VEGP TS 3.3.2, Function 7a, and establishing an end state of MODE 4 is therefore appropriate for VEGP TS 3.3.2, Function 7a.

Basis for Request for Additional Information – 2

The LAR submitted by the licensee proposed to change the end state requirement for Condition B, specifically Required Action B.2, of VEGP TS 3.7.14, "Engineered Safety Features (ESF) Room Cooler and Safety Related Chiller System." This change is described in the variations or deviations section of the LAR. Specifically, the licensee stated that TS 3.7.12, "ECCS Pump Room Exhaust Air Cleanup System," from the STS included the Conditions for VEGP TS 3.7.14. In contrast, TS 3.7.12 does not have Conditions related to ESF room coolers or chillers.

Request for Additional Information – 2

Based on the above, please explain how VEGP TS 3.7.14 is equivalent to TS 3.7.12 from the STS and consistent with TSTF-432.

SNC Response to Request for Additional Information – 2

Requirements for the ECCS Pump Room Exhaust Air Cleanup System (PREACS) are described in ISTS 3.7.12. The ECCS PREACS filters air from the area of the active ECCS components during the recirculation phase of a loss of coolant accident. Additionally, the ECCS PREACS, in conjunction with other normally operating systems, provides environmental control of temperature and humidity in the ECCS pump room area and the lower reaches of the Auxiliary Building. VEGP TS 3.7.14, "Engineered Safety Features (ESF) Room Cooler and Safety Related Chiller System," provides requirements for the ESF Room Coolers. Operability requirements for the ESF room coolers are not included within the scope of end state conditions evaluated in WCAP-16294, Rev. 1 for ISTS 3.7.12. The requested end state change for VEGP TS 3.7.14 is therefore withdrawn.

Basis for Request for Additional Information – 3

In the LAR submitted by the licensee, a section was provided that discussed justifications for variations or deviations from TSTF-432. In this section, the licensee stated that the corresponding requirements for VEGP TS 3.7.13, "Piping Penetration Area Filtration and Exhaust System (PPAFES)," are included in TS 3.7.14, "Penetration Room Exhaust Air Cleanup System (PREACS)," from the STS.

The TS Bases for TS 3.7.14 from the STS describe the PREACS system function as filtering air from the penetration area between containment and the Auxiliary Building. This appears to be different from (1) the PPAFES function described in sections 6.5.1.1 and 15.6.5.4.4 from the VEGP Updated Final Safety Analysis Report (UFSAR), Revision 19, and (2) the description for PPAFES in the VEGP TS Bases, Revision 33, which respectively state,

> The piping penetration filter exhaust system is designed to maintain the filtration unit rooms at -1/4 in. WG with respect to atmosphere. This condition ensures that the piping penetration areas which contain post-LOCA recirculation components are maintained at a negative pressure with respect to adjacent areas to prevent uncontrolled exfiltration of potentially contaminated air and to minimize release of airborne radioactivity to the outside atmosphere resulting from containment and penetration area leakage under accident conditions. It also ensures that the emergency core cooling system and containment spray pump rooms can be purged to allow access for repair and maintenance of the equipment. [VEGP UFSAR 6.5.1.1];
>
> The [ECCS] recirculation flowpaths outside the containment are entirely within building areas served by the ESF ventilation system (subsection 6.5.1), which recirculates the air through charcoal filters to remove airborne iodine and maintains the areas at subatmospheric pressure to prevent the release of unfiltered air. [VEGP UFSAR 15.6.5.4.4]; and
>
> The PPAFES maintains a negative pressure in the piping penetration area and Engineered Safety Feature (ESF) pump rooms and filters the exhaust from the negative pressure boundary. The PPAFES minimizes the release of airborne radioactivity to the outside atmosphere resulting from recirculation line and component leakage into the piping penetration area Emergency Core cooling System (ECCS) and ESF pump rooms during an accident condition. [VEGP TS Bases].

In summary, the VEGP UFSAR and TS Bases describe PPAFES as a filtration system that encompasses more than the PREACS system from the STS (i.e., TS 3.7.14), which appears to only provide filtration from the penetration area between containment and the Auxiliary Building. In contrast, PPAFES is described as including other filtration areas such as the ESF pump rooms.

The licensee also indicated that the VEGP design does not include ECCS pump room exhaust cleanup equipment or depend on maintaining the ECCS pump rooms as a ventilation boundary; therefore, the licensee concluded that the

ventilation requirements for TS 3.7.12, "ECCS Pump Room Exhaust Air Cleanup System," from the STS were not applicable to the VEGP TSs. This appears to contradict the aforementioned descriptions of PPAFES from the VEGP UFSAR and TS Bases.

Request for Additional Information – 3

Based on the above, please clarify the relationship between (1) VEGP TS 3.7.13 and (2) TS 3.7.12 and TS 3.7.14 from the STS. Include in the discussion, how VEGP TS 3.7.13 is consistent with TSTF-432.

SNC Response to Request for Additional Information – 3

TSTF-432-A provides revised end states for ISTS 3.7.12, "ECCS Pump Room Exhaust Air Cleanup System (PREACS)," and ISTS 3.7.14, "Penetration Room Exhaust Air Cleanup System (PREACS)."

As stated in the ISTS 3.7.12 Bases, the ECCS PREACS filters air from the area of the active ECCS components during the recirculation phase of a loss of coolant accident (LOCA). The ECCS PREACS, in conjunction with other normally operating systems, also provides environmental control of temperature and humidity in the ECCS pump room area and the lower reaches of the Auxiliary Building. The ECCS PREACS is required to maintain the ECCS pump rooms at negative pressure (Surveillance Requirement [SR] 3.7.14.4).

As stated in the ISTS 3.7.14 Bases, the Penetration Room PREACS filters air from the penetration area between containment and the Auxiliary Building. The Penetration Room PREACS is required to maintain the penetration area at negative pressure (SR 3.7.14.4).

VEGP TS 3.7.13, Piping Penetration Area Filtration and Exhaust System (PPAFES), combines the design functions of the ECCS PREACS (ISTS 3.7.12) and Penetration Room PREACS (ISTS 3.7.14). The PPAFES provides filtered ventilation of the ESF pump rooms and penetration areas, and is required to maintain the ESF pump rooms and penetration areas at negative pressure (SR 3.7.13.4).

A comparison of the design functions and areas served by the ECCS PREACS, Penetration Room PREACS, and PPAFES is provided in the following table:

		VEGP TS 3.7.13, PPAFES
ISTS 3.7.12, ECCS PREACS	The ECCS PREACS maintains the ECCS pump rooms at negative pressure (SR 3.7.12.4) and filters air from the area of the active ECCS components (i.e., Engineered Safety Feature [ESF] pump rooms) during the recirculation phase of a loss of coolant accident (LOCA). The ECCS PREACS, in conjunction with other normally operating systems, also provides environmental control of temperature and humidity in the ECCS pump room area and the lower reaches of the Auxiliary Building (through circulation of unconditioned air).	The PPAFES maintains the ESF pump rooms at negative pressure and filters the exhaust from the negative pressure boundary during the recirculation phase of a LOCA. Temperature in the area of active ECCS equipment is maintained by the ESF room coolers, which are covered separately under Vogtle TS 3.7.14, "ESF Room Cooler and Safety-Related Chiller System."
ISTS 3.7.14, Penetration Room PREACS	The Penetration Room PREACS maintains the penetration room enclosure at negative pressure (SR 3.7.14.4) and filters air from the penetration area.	The PPAFES maintains the piping penetration area at negative pressure and filters the exhaust from the negative pressure boundary.

The ECCS PREACS, the Penetration Room PREACS, and the PPAFES each consist of two independent and redundant trains. Each train consists of a heater, a prefilter or demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation, as well as demisters, functioning to reduce the relative humidity of the air stream, also form part of the system. A second bank of HEPA filters, which follows the adsorber section, collects carbon fines and provides backup in case of failure of the main HEPA filter bank. The downstream HEPA filter is not credited in the accident analysis. The system initiates filtered ventilation following receipt of a containment ventilation isolation signal.

Additionally, just as with the ECCS PREACS and Penetration Room PREACS, the design basis of the PPAFES is established by the large break loss of coolant accident (LOCA). The system evaluation assumes a passive failure of the ECCS outside containment during the recirculation mode during a Design Basis Accident (DBA). The system is designed to restrict the radioactive release to within the 10 CFR 100 limits, or the NRC staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits).

TSTF-432-A provides a MODE 4 end state for ISTS 3.7.12, Condition C, for the situation where one ECCS PREACS train is inoperable, or both ECCS PREACS trains are inoperable due to an inoperable ECCS pump room boundary, and the Required Action and Associated Completion Time are not met. Similarly, TSTF-432-A provides a MODE 4 end state for ISTS 3.7.14, Condition C, for the situation where one Penetration Room PREACS train is inoperable, or both Penetration Room PREACS trains are inoperable due to an inoperable penetration room boundary, and the Required Action and Associated Completion Time are not met. In both cases, the Required Action and Completion Time for Condition C is to be in MODE 3 in 6 hours, and MODE 5 in 36 hours.

VEGP TS 3.7.13, Condition C, addresses the situation where one ECCS PPAFES train is inoperable, or both PPAFES trains are inoperable due to an inoperable PPAFES boundary, and the Required Action and Associated Completion Time are not met. The Required Action and Completion Time for Condition C is to be in MODE 3 in 6 hours, and MODE 5 in 36 hours.

Given that the PPAFES described in VEGP TS 3.7.13 is essentially a combination of the ECCS PREACS described in ISTS 3.7.12 and the Penetration Room PREACS described in ISTS 3.7.14, and that the design functions, plant areas served, safety design basis, and equipment configuration are virtually the same, it is appropriate to extend the end state evaluation in WCAP-16294, Rev. 1 and revised end states for ISTS 3.7.12 and 3.7.14 from TSTF-432-A to VEGP TS 3.7.13.

Basis for Request for Additional Information – 4

The NRC staff identified the following discrepancies in the VEGP that were submitted with the LARs.

1. The insert for the TS 3.4.13 Bases, Condition B references Required Action K.2.2 versus B.2.
2. The insert for the TS 3.5.4 Bases, Condition E, references Required Action C.2 versus E.2.
3. The Bases discussion for Required Actions D.1 and D.2 from TS 3.8.4 still includes a Mode 5 end state reference.

In the supplement to the VEGP LAR dated October 8, 2015, the Bases discussion for Required Actions F.1, F.2, and F.3 from TS 3.7.10 states Completion Times of 6 hours and 12 hours versus the TS required times of 7 hours and 13 hours. A similar discrepancy can be found in the TS 3.7.10 Bases insert for Condition G, which states Completion Times of 6 hours and 36 hours versus the TS required times of 7 and 37 hours.

Request for Additional Information – 4

As required by section 50.36 of Title 10 of the Code of Federal Regulations (10 CFR 50.36), "Technical Specifications," the licensee must provide a summary statement of the bases or reasons for such specifications as part of the LAR submittal. This information may be reviewed for consistency with the associated TS changes. Based on the above, please explain the discrepancies between the TS changes and TS Bases that were submitted.

SNC Response to Request for Additional Information – 4

The identified items are addressed as follows:

1. The Insert for VEGP TS 3.4.13 Bases, Condition B, is revised to reference Action B.2. A corrected markup for TS 3.4.13 Bases, Condition B is provided in Enclosure 2.
2. The Insert for VEGP TS 3.5.4 Bases, Condition E, is revised to reference Required Action E.2. A corrected markup for TS 3.5.4 Bases, Condition E is provided in Enclosure 2.
3. The sentence in question should have been deleted when VEGP submitted to adopt this TSTF Traveler. A correct markup is provided in Enclosure 2.
4. The Completion Times for TS 3.7.10, Required Actions F.2, F.3, G.2, and G.3 are described in the Bases as "within the following X hours," and are described relative to the Completion Time for Required Actions F.1 and G.1, which in both instances is 1 hour. The VEGP TS 3.7.10 Bases for Required Actions F.2, and F.3 are revised to reflect Completion Times of 7 hours and 13 hours, respectively, which is consistent with the Completion Times stated in TS 3.7.10 for these Required Actions, and the text "within the following X hours" is removed. The VEGP TS 3.7.10 Bases for Required Actions G.2 and G.3 are revised to reflect Completion Times of 7 hours and 13 hours, which is consistent with the Completion Times stated

in TS 3.7.10, for this Required Action, and the text "within the following X hours" is removed. Corrected markups for the VEGP TS 3.7.10 Bases, Required Actions F.1, F.2, F.3, and G.1, G.2, and G.3, are provided in Enclosure 2.

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Enclosure 2

Marked up Bases Pages

RAI 4, Item 1

BASES (continued)

ACTIONS

A.1

Unidentified LEAKAGE or identified LEAKAGE in excess of the LCO limits must be reduced to within limits within 4 hours. This Completion Time allows time to verify leakage rates and either identify unidentified LEAKAGE or reduce LEAKAGE to within limits before the reactor must be shut down. This action is necessary to prevent further deterioration of the RCPB.

B.1 and B.2

If any pressure boundary LEAKAGE exists, or primary to secondary LEAKAGE is not within limit, or if unidentified or identified LEAKAGE cannot be reduced to within limits within 4 hours, the reactor must be brought to lower pressure conditions to reduce the severity of the LEAKAGE and its potential consequences. It should be noted that LEAKAGE past seals and gaskets is not pressure boundary LEAKAGE. The reactor must be ~~brought~~ to MODE 3 within 6 hours and MODE 5 within 36 hours. This action reduces the LEAKAGE and also reduces the factors that tend to degrade the pressure boundary.

placed in a MODE in which overall plant risk is reduced. This is done by placing the unit in at least

4

the next 6

INSERT - BASES 3.4.13 Condition B

The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. ~~In MODE 5, the pressure stresses acting on the RCPB are much lower, and further deterioration is much less likely.~~

SURVEILLANCE REQUIREMENTS

SR 3.4.13.1

Verifying RCS LEAKAGE to be within the LCO limits ensures the integrity of the RCPB is maintained. Pressure boundary LEAKAGE would at first appear as unidentified LEAKAGE and can only be positively identified by inspection. It should be noted that LEAKAGE past seals and gaskets is not pressure boundary LEAKAGE. Unidentified LEAKAGE and identified LEAKAGE are determined by performance of an RCS water inventory balance.

(continued)

RAI 4, Item 1

INSERT – BASES 3.4.13 Condition B

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 6). In MODE 4 the Steam Generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 6, the steam turbine driven Auxiliary Feedwater Pump must be available to remain in MODE 4. Should Steam Generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

Required Action B.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

BASES

ACTIONS
(continued)

B.1 and C.1

The sludge mixing system isolation valves serve to isolate the non-safety grade mixing system from the RWST when the RWST level reaches the low level alarm. With this isolation capability inoperable, the potential exists for the inadvertent draining of the RWST below the required level via a failure (breach) in the sludge mixing system. Therefore, action must be taken to restore the isolation valve(s) to OPERABLE status within 24 hours. If the isolation valve(s) cannot be restored to OPERABLE status within the required time, action must be taken within the following 6 hours to isolate the sludge mixing system from the RWST. This may be accomplished by closing the manual isolation valve(s) or deenergizing the OPERABLE solenoid pilot valve. The times allowed for restoration or remedial action are reasonable considering the low probability of an event occurring during the specified time that would require the RWST, coincident with a sludge mixing system failure that would drain the RWST.

D.1

With the RWST inoperable for reasons other than Condition A or B (e.g., water volume), it must be restored to OPERABLE status within 1 hour.

In this Condition, neither the ECCS nor the Containment Spray System can perform its design function. Therefore, prompt action must be taken to restore the tank to OPERABLE status or to place the plant in a MODE in which the RWST is not required. The short time limit of 1 hour to restore the RWST to OPERABLE status is based on this condition simultaneously affecting redundant trains.

E.1 and E.2

overall plant risk is reduced.

Condition E is applicable to Conditions A and D. If the RWST cannot be returned to OPERABLE status within the associated Completion Time, the plant must be brought to a MODE in which ~~the LCO does not apply.~~ To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE ~~5~~ 4 within ~~36~~ 12 hours. The allowed

INSERT - BASES 3.5.4
Condition E

(continued)

RAI 4, Item 2

INSERT – BASES 3.5.4 Condition E

. . .

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 2). In MODE 4 the Steam Generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 2, the steam turbine driven Auxiliary Feedwater Pump must be available to remain in MODE 4. Should Steam Generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

Required Action E.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

. . .

RAI 4, Item 3

BASES

ACTIONS (continued)

C.1

Condition C represents one train with a loss of ability to completely respond to an event, and/or a potential loss of ability to remain energized during normal operation. The 2 hour limit is consistent with the allowed time for an inoperable DC distribution system train.

If one of the required DC electrical power sources is inoperable for reasons other than Condition A or B (e.g., inoperable battery charger or inoperable battery charger and associated inoperable battery), the remaining DC electrical power sources have the capacity to support a safe shutdown and to mitigate an accident condition. Since a subsequent worst case single failure could, however, result in the loss of the minimum necessary DC electrical sources to mitigate a worst case accident, continued power operation should not exceed 2 hours. The 2 hour Completion Time is based on Regulatory Guide 1.93 (Ref. 8) and reflects a reasonable time to assess unit status as a function of the inoperable DC electrical power source and, if the DC electrical power source is not restored to OPERABLE status, to prepare to effect an orderly and safe unit shutdown.

D.1 and D.2

overall plant risk is reduced.

If the inoperable DC electrical power source cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which ~~the LCO does not apply.~~ To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE ~~5~~ within ~~36~~ hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems. ~~The Completion Time to bring the unit to MODE 5 is consistent with the time required in Regulatory Guide 1.93 (Ref. 8).~~

4

12

INSERT - BASES 3.8.4 Condition D

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1

Verifying battery terminal voltage while on float charge for the batteries helps to ensure the effectiveness of the battery chargers, which support the ability of the batteries to perform their intended function. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery and maintain the battery in a fully charged state while supplying the continuous steady state loads of the associated

(continued)

RAI 4, Item 3

INSERT – BASES 3.8.4 Condition D

. . .

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 9). In MODE 4 the Steam Generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 9, the steam turbine driven Auxiliary Feedwater Pump must be available to remain in MODE 4. Should Steam Generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

Required Action D.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

. . .

RAI 4, Item 4

BASES

ACTIONS

D.1 (continued)

that CRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions.

The 90 day Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90 day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the CRE boundary.

E.1

With the CRE air temperature outside its limit, action must be taken to restore the air temperature to within the limit within 7 days. If the CRE air temperature exceeds its limit, the ability of a single train of CREFS to maintain CRE temperature after a CRI may be affected. The completion time of 7 days is reasonable considering the number of CREFS trains available to perform the required temperature control function and the low probability of an event occurring that would require the CREFS operation during that time.

F.1, F.2, and F.3

in which overall plant risk is reduced

or D

If the Required Actions and associated Completion Times of Conditions A, B, ~~C, D, or E~~ are not met, action must be taken to place the unit in a condition ~~where the inoperable CREFS train(s) are no longer required~~. Locking closed the outside air (OSA) dampers in the affected unit and locking open the OSA dampers in the unaffected unit within 1 hour, ensure that all CRE air intake is monitored by redundant radiogas monitors that actuate OPERABLE CREFS trains. The affected unit(s) must also be placed in MODE 3 within ~~the following 6~~ 7 hours and MODE 5 4 within

(continued)

RAI 4, Item 4

BASES

ACTIONS

F.1, F.2, and F.3 (continued)

13

~~the following 36~~ hours ~~which removes the requirement for CRE occupant protection in the event of an SI in the affected unit(s)~~. These actions ensure that if the CRE occupants cannot be protected from all postulated accident and single failure conditions, the unit or units are placed in a MODE where the ~~protection is no longer required~~. The allowed Completion Times are reasonable, based on operating experience, to perform the Required Actions and to reach the required unit conditions from full power conditions in an orderly manner without challenging unit systems.

overall plant risk is reduced

INSERT BASES 3.7.10 Condition F, Change 1

B and D

B and D

Required Action F.1 is modified by a Note that excepts Conditions ~~B, D, and E~~. Conditions ~~B, D, and E~~ affect both units, and Required Action F.1 is based on a single affected unit. Therefore, upon entry into Condition F from Condition ~~B, D, or E~~, only Required Actions F.2 and F.3 apply.

B or D

INSERT BASES 3.7.10 Condition F, Change 2

INSERT BASES Condition G

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

The CREFS is required to maintain the CRE temperature ≤ 85°F in the event of a CRI. The maintenance of the CRE below this temperature ensures the operational requirements of equipment located in the CRE will not be exceeded. To accomplish this function, the CREFS air flow is directed through cooling coils which are supplied by the Essential Chilled Water System. The design cooling capacity of the CREFS and the limitation of the normal CRE ambient temperature (before CRI) ensure the capability of the CREFS to maintain the CRE temperature within limit after a CRI. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.7.10.2

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe, testing each train once every month provides an adequate check of this system. Monthly operations with the heater control circuit energized allows the heaters to operate as necessary to reduce the humidity in the

(continued)

RAI 4, Item 4

INSERT – Bases 3.7.10 Condition F, Change 1

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 8). In MODE 4 the Steam Generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 8, the steam turbine driven Auxiliary Feedwater Pump must be available to remain in MODE 4. Should Steam Generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

INSERT – Bases 3.7.10 Condition F, Change 2

Required Action F.3 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

RAI 4, Item 4

INSERT – Bases 3.7.10 Condition G

G.1, G.2, and G.3

If the Required Actions and associated Completion Times of Conditions C or E are not met, action must be taken to place the unit in a condition where the inoperable CREFS train(s) are no longer required. Locking closed the outside air (OSA) dampers in the affected unit, and locking open the OSA dampers in the unaffected unit, within 1 hour ensures that all CRE air intake is monitored by redundant radiogas monitors that actuate OPERABLE CREFS trains. The affected unit(s) must also be placed in MODE 3 within 7 hours and MODE 5 within 37 hours, which removes the requirement for CRE occupant protection in the event of an SI in the affected unit(s). These actions ensure that if the CRE occupants cannot be protected from all postulated accident and single failure conditions, the unit or units are placed in a MODE where the protection is no longer required. The allowed Completion Times are reasonable, based on operating experience, to perform the Required Actions and to reach the required unit conditions from full power conditions in an orderly manner without challenging unit systems.

Required Action G.1 is modified by a Note that excepts Condition E. Condition E affects both units, and Required Action G.1 is based on a single affected unit. Therefore, upon entry into Condition G from Condition E, only Required Actions G.2 and G.3 apply.