

Thomas D. Gatlin
Vice President, Nuclear Operations
803.345.4342



June 29, 2012
RC-12-0075

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

Attn: R.E. Martin

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS) UNIT 1
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12
LICENSE AMENDMENT REQUEST – LAR 10-03912
Technical Specification Change Request for TS 3.5.4, Refueling Water
Storage Tank (RWST)

Dear Sir or Madam:

In accordance with the provisions of Section 50.90 of Title 10 of the *Code of Federal Regulations* (10CFR), South Carolina Electric & Gas Company (SCE&G), acting for itself and as agent for South Carolina Public Service Authority, requests an amendment to Operating License NFP-12 for the Virgil C. Summer Nuclear Station (VCSNS) Unit 1. The proposed Technical Specification (TS) change revises 3.5.4, "Refueling Water Storage Tank," such that the non-seismically qualified piping of the Spent Fuel Pool (SFP) purification system may be connected to the RWST's seismic piping by manual operation of a RWST seismically qualified boundary valve under administrative controls for performance of RWST surveillance requirements and filtration. This change will only be applicable through the next two fuel cycles. The change will expire after Refueling Outage RF-22 (Fall 2015).

Attachment 1 provides SCE&G's evaluation of the proposed change, including a description of the proposed change and the regulatory basis for the change. Attachment 2 provides a mark-up of the TS pages showing the proposed change. Attachment 3 provides the retyped TS pages. Attachment 4 provides a markup of TS Bases pages showing the proposed changes. Attachment 5 provides the retyped TS Bases pages. Attachment 6 provides VCSNS responses to anticipated NRC questions that were asked of Southern Nuclear Company. Attachment 7 provides the draft procedures which implement the operator actions required for this License Amendment Request. Attachment 8 provides the course description for valve operator qualification. Attachment 9 provides a summary of the regulatory commitments made in this submittal.

SCE&G has determined that the proposed change meets the requirements of 10CFR50.92(c) and does not involve a significant hazards consideration. This request should be processed as expeditiously as possible because VCSNS has no alternate method of recirculating and filtering the contents of the RWST. Recirculating the RWST prior to sampling provides for a more representative tank sample. Filtration prior to the outage is desired to remove impurities and improve water clarity to enhance safety during fuel movement. SCE&G requests approval of the proposed license amendment by September 1, 2012 with the amendment being implemented within 14 days of receipt of approved amendment. This expeditious date is requested to support the refueling outage which will begin on October 12, 2012.

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This proposed change has been reviewed and approved by both the VCSNS Plant Safety Review Committee (PSRC) and the VCSNS Nuclear Safety Review Committee (NSRC).

In accordance with 10CFR50.91(b)(1), "State Consultation," a copy of this application, with attachments, is being provided to the designated South Carolina Official.

The NRC has allowed the connection of non-seismically qualified piping of the SFP purification system to the seismic piping of the RWST crediting manual operation of a RWST seismically qualified boundary valve under administrative controls for limited periods of time with the issuance of a Safety Evaluation Report to Farley Units 1 and 2 (ML120730610) on March 24, 2012.

If you have any questions about this submittal, please contact Bruce L. Thompson at (803) 931-5042.

I certify under penalty of perjury that the foregoing is true and correct.

6-29-12
Executed on

Thomas D. Gatlin
Thomas D. Gatlin

JMW/TDG/gr

Attachments:

1. Evaluation of Proposed Changes
2. Proposed Changes - Marked-up TS Pages
3. Proposed TS Pages (Retyped)
4. Proposed Changes - Marked-up TS Bases Pages
5. Proposed TS Bases Pages (Retyped)
6. VCSNS Response to Anticipated NRC Questions
7. Operator Actions Procedures
8. Valve Operator Qualification Course Description
9. List of Regulatory Commitments

c: K. B. Marsh
S. A. Byrne
J. B. Archie
N. S. Carns
J. H. Hamilton
R. J. White
W. M. Cherry
V. M. McCree
R. E. Martin
K. M. Sutton
S. E. Jenkins
Paulette Ledbetter
NRC Resident Inspector
RTS (LAR 10-03912)
File (813.20)
PRSF (RC-12-0075)

**VIRGIL C. SUMMER NUCLEAR STATION (VCSNS) Unit 1
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12**

ATTACHMENT 1

Evaluation of Proposed Changes

1.0 INTRODUCTION

SCE&G requests approval to amend Operating License No. NPF-12 for Virgil C. Summer Nuclear Station Unit 1.

The proposed change involves:

The following Notes being added to Technical Specification (TS) 3.5.4 "Refueling Water Storage Tank."

"RWST piping may be unisolated from non-safety related piping for ≤ 4 hours under administrative controls to perform SR 4.5.4.a.2.

RWST piping may be unisolated from non-safety related piping for 30 days (cumulative) per fuel cycle under administrative controls for filtration.

These alignments cannot be used after Refueling Outage RF-22 (Fall 2015)."

In addition, the Technical Specification Bases will be revised to clarify administrative controls.

2.0 DESCRIPTION OF PROPOSED CHANGE

VCSNS desires to take suction from the Refueling Water Storage Tank (RWST) through valve XVT06701-SF, RWST Spent Fuel Purification Header Supply Isolation Valve, to facilitate RWST recirculation through the Spent Fuel Pool (SFP) Purification Loop for the purposes of boron sampling and refueling water filtration. To accommodate recirculation of the RWST water while the RWST is required to be operable, this License Amendment Request (LAR) proposes to credit operator action to close a seismically qualified manual ASME code boundary valve (XVT06701-SF) connected to the subject RWST piping should a reactor trip occur, or the Shift Supervisor (SS) directs the valve to be closed.

Closure of this valve isolates the RWST from non-seismically qualified piping and maintains its seismic qualification and operability.

During plant operation in Modes 1 through 4, the RWST is required to be operable to maintain a borated water supply for accident mitigation purposes. The RWST is the source of suction for the Residual Heat Removal pumps and the Containment Spray pumps during normal operation (Modes 1 through 4). The suction of the charging pumps is automatically aligned to the RWST on a Safety Injection signal. During refueling operation (Modes 5 and 6), the RWST is required to be operable as a borated water supply should the boric acid storage system not be operable. The contents of the RWST are also used to fill the refueling cavity during refueling operation. The water in the RWST is borated to a concentration sufficient to ensure that shutdown margin is maintained when the reactor is at cold shutdown conditions should RWST water be added to the reactor.

The SFP Purification Loop is a subsystem of the spent fuel pool cooling system that is connected to portions of the RWST piping. The SFP Purification Loop piping is non-safety grade and not seismically qualified. The failure of the non-seismic SFP Purification Loop piping must be considered in seismic evaluations. Such a failure could potentially result in a loss of RWST inventory should the ASME code boundary valve between the RWST and the SFP Purification Loop be open with the SFP Purification Loop aligned to the RWST. The primary function of the SFP Purification Loop is to maintain the optical clarity of the spent fuel pool water and, therefore, provide for safer handling of the fuel. This system is also used to purify the refueling water in the refueling canal and the RWST. Prior to refueling outages, the SFP Purification Loop is used to filter the RWST prior to filling the refueling cavity. Further, the SFP Purification Loop is also used to recirculate the RWST water to ensure a representative sample for the required boron concentration surveillance.

The surveillance testing of the RWST boron concentration requires the sampling of tank contents every seven days. In order to optimize sample accuracy, the tank contents should be recirculated to ensure mixing. The alignment for recirculation requires unisolating the RWST piping from the SFP Purification Loop, which is non-safety related and not seismically qualified. In order to perform this alignment, it is operationally desirable to credit operator action to close the RWST's seismically qualified manual code boundary valve in the event of a seismic event, thereby maintaining the RWST's seismic qualification.

In addition to the administrative controls, the TS will limit the amount of time the RWST can be aligned to non-safety related piping. The safety-related RWST piping may be unisolated for up to 4 hours to perform SR 4.5.4.a.2. In addition, for each fuel cycle the RWST-associated piping may be unisolated for up to 30 days (cumulative) to allow RWST water filtration and demineralization. The time required for performance of SR 4.5.4.a.2 is not counted towards the cumulative 30 day total allowed for pre-outage RWST water filtration and demineralization. These allowances are only applicable during the current and next two fuel cycles, which will allow physical modifications to be made to the subject systems eliminating the need for manual operator action. These

alignments cannot be used after Refueling outage RF-22 (Fall 2015). The Notes in TS 3.5.4 will be annotated to reflect the limitations for usage.

Refueling Water Purification System

The TS required RWST volume of water must be maintained to mitigate the consequences of a Loss Of Coolant Accident (LOCA) or Main Steam Line Break (MSLB) when the plant is in Modes 1 through 4. This requirement applies regardless of the RWST's possible alignment to the SFP Purification Loop. As part of the surveillance requirements to verify RWST operability, weekly boron samples are required to be taken and analyzed. In order to optimize sample accuracy, the tank contents must be recirculated to provide mixing. The SFP Purification Loop has been used in the past at VCSNS Unit 1 to perform this mixing. Recirculation of the RWST was discontinued in October 2011 as a result of a vortexing issue at another facility that was captured in INPO operating experience report, OE 33653.

For future plant operations under the proposed revision to the TS, by crediting operator action, VCSNS Unit 1 may use the SFP Purification Loop in plant Modes 1 through 4 up to 4 hours to facilitate mixing for the required boron concentration surveillance. This allowance does not count towards the cumulative 30 day allowance for pre-outage RWST filtration and demineralization per fuel cycle. This determination of boron concentration provides assurance that the RWST water is capable of fulfilling its function of accident mitigation.

RWST Cleanup

Pre-refueling outage cleanup of the RWST contents is necessary to ensure that refueling water clarity requirements are maintained for reactor vessel disassembly and fuel transfer and inspection purposes. The water clarity is both a personnel and equipment safety consideration.

For future plant operations under the proposed revision to the TS, by crediting the operator action to close the manual code boundary valve should a Reactor Trip occur or the SS directs the closure, VCSNS Unit 1 may continue to use the SFP Purification Loop in plant Modes 1 through 4 continuously for up to 30 days (cumulative) per fuel cycle to filter the RWST contents through the spent fuel pool demineralizer and SFP filter. Processing of the RWST contents through the SFP Purification Loop enhances water quality and enables the removal of radiological impurities to facilitate maintenance activities and promote radiation exposure rates which are within 10CFR20 limits and As Low As Reasonably Achievable (ALARA).

3.0 BACKGROUND

Historically, VCSNS Unit 1 has periodically used the SPF Purification Loop to filter the RWST water while in modes for which the RWST was required to be operable. This alignment was utilized for RWST water mixing prior to weekly surveillance sampling of the boron concentration as required by TS surveillance requirements (SR) 4.5.4.a.2 and

for filtration of the RWST water prior to refueling outages. This configuration was deemed acceptable on the premise that the station was within its design and licensing bases by periodically opening a normally closed valve for weekly tank recirculation and sampling. The station's position was articulated in an operability determination when INPO operating experience report OE 31996 concerning the RWST alignment to non-safety and non-seismic purification system at another facility was entered in the station's corrective action program in 2010. In April 2011, specific administrative controls were established in Station Order 11-06 to control this configuration when the RWST was on longer term recirculation for filtration of the RWST water prior to the refueling outage. These controls were developed based on an engineering information request and included ensuring sufficient RWST level margin existed above the design bases tank level, monitoring the RWST level in the control room, using the recirculation return top connection via valve XVT06694 to prevent another leak path, and assigning an operator to isolate the recirculation path if plant conditions required. In October 2011, recirculation of the RWST was discontinued as a result of OE 33653 concerning a vortex issue associated with using the recirculation return top connection at another facility. Information Notice (IN) 2012-01 Seismic Considerations—Principally Issues Involving Tanks, emphasized that a license amendment was required for this condition.

4.0 TECHNICAL ANALYSIS

This qualitative assessment addresses the proposed change to TS 3.5.4, "Refueling Water Storage Tank." Currently, under the interpretation of seismic qualification of systems provided by IN 2012-01, TS 3.5.4, "Refueling Water Storage Tank," has no allowance for recirculating the contents of the RWST for the purposes of facilitating sampling during Modes 1 through 4 when the RWST is required to be operable. The following analysis justifies the acceptability of the proposed TS which provides for operator action to close the seismically qualified manual code boundary valve (should a LOCA, MSLB, seismic event, or direction from the Control Room occur) as a means to assure RWST operability when recirculating the tank through non-safety related piping of the SFP Purification Loop.

Surveillance Requirement (SR) 4.5.4.a.2 requires sampling of the RWST water every seven days to verify boron concentration. In order to obtain the desired sample accuracy, it is operationally desirable to recirculate the tank contents. However, the RWST was not designed to be recirculated through seismically qualified piping for this purpose of sampling.

The only method for the RWST to be recirculated is by using the SFP Purification Loop. However, this system alignment circulates the RWST water through non-safety related piping. In order to maintain operability of the RWST, timely operator action would be utilized to close a single seismically qualified code manual boundary valve.

SCE&G has confidence in the successful completion of manual operator actions. The designated operator must be valve operator qualified. Detailed procedures have been developed to ensure successful performance of this task. The procedures require the

individual designated to perform the manual actions to be briefed. This brief covers the method of communication the operator will have with the control room, the limitations on location of the assigned operator (remain within the Auxiliary Building (AB) 412' and Control Building (CB) 412' elevation), the location of the valve to be manipulated, ingress and egress path, and the initiating conditions which require securing the valve. In addition, the control room will monitor the RWST level during RWST recirculation.

If a postulated break were to occur in the Auxiliary Building, leak detection instrumentation is provided to inform the operators to the condition. The current design basis for leak detection and isolation is 30 minutes.

The drain flow rate through a guillotine break in the three inch line just below the RWST slab at elevation 409 ft is 468 gpm. By maintaining an initial RWST level of 94%, the available time for operator action is 32.2 minutes to maintain RWST volume used in the FSAR accident analyses. The Main Control Board (MCB) is provided with an RWST Lo Level Alarm at 93%. The Lo Level Alarm provides 21.5 minutes for operator action. These time calculations take into account instrumentation uncertainty.

The failure of the boundary valve to close would be considered a credible single failure. Per 10CFR50 Appendix A, a single failure is defined as an occurrence which results in the loss of capability of a component to perform its intended safety function. Fluid and electric systems are considered to be designed against an assumed single failure if neither (1) a single failure of any active component nor (2) a single failure of a passive component results in a loss of capability of the system to perform its safety function. The active failure in a fluid system means (1) the failure of a component which relies on mechanical movement for its operation to complete its intended function on demands, or (2) an unintended movement of the component.

By testing the valve before aligning the RWST the SFP Purification System (via opening and then closing the valve and verifying proper operation), it can be determined that the credible failure mechanisms are not present. Therefore, it would be unlikely that another unforeseen failure of the valve to close would occur. Consequently, the valve should be counted on to reliably perform its function when needed. Guidance to perform this pre-operational test is included in the procedure to be performed each time the RWST is aligned to the SFP purification system. To address any unintended movement, plant procedures require the valve to be locked closed when it is not in use.

A concern of potential changes to the critical submergence in the RWST to preclude air ingestion due to vortex formation was identified in INPO OE 33653. With flow to the top of the RWST, testing at other facilities indicated approximately 1 ft non-conservative change to critical submergence. Securing the SF purification pump within 20 minutes of Reactor Trip will stop return flow to the top of the RWST before reaching the RWST Lo-Lo Level setpoint of 18%. This provides substantial margin to critical submergence so the vortex concern has no impact.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

The proposed change adds Notes to the VCSNS Unit 1 Technical Specifications 3.5.4, "Refueling Water Storage Tank," to allow administrative control of the seismic RWST/non-seismic SFP Purification Loop interface.

1. Does the proposed change involve a significant increase in the probability or consequences of an accident that has previously been evaluated?

Response: No. The SFP Purification Loop is not credited for safe shutdown of the plant or accident mitigation. A combination of design and administrative controls ensure that the SFP Purification Loop maintains RWST boron concentration and water volume requirements whenever the contents of the RWST are processed through the system.

Since the RWST will continue to perform its safety function and meet all surveillance requirements, overall system performance is not affected, assumptions previously made in evaluating the consequences of the accident are not altered, and the consequences of the accident are not increased. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident or malfunction that has not previously been evaluated?

Response: No. Contingent upon manual operator action as described above, a SFP Purification Loop line break will not result in a loss of the RWST safety function. As noted in Section 4 of the LAR, operator action can be taken within sufficient time to isolate the RWST from the SFP Purification Loop during postulated accidents.

The 3" SFP Purification Loop is not currently included in the Auxiliary Building flood calculation. The issue was previously evaluated and the bounding flood rates (generally in the 600 gpm to 725 gpm range) were evaluated for the Auxiliary Building. The calculated leak rate of 468 gpm remains within these limits.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No. The SFP Purification Loop is not credited for safe shutdown of the plant or accident mitigation. Contingent upon manual operator action as described above, a SFP Purification Loop line break will not result in a loss of the RWST safety function. As

noted in Section 4 of the LAR, operator action can be taken within sufficient time to isolate the RWST from the SFP Purification Loop during postulated accidents.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, SCE&G concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10CFR50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

6.0 ENVIRONMENTAL CONSIDERATION

SCE&G has evaluated the proposed amendment change and determined the changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10CFR51.22(c)(9). Therefore, pursuant to 10CFR51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

7.0 PRECEDENT

VCSNS Unit 1 is a three loop Westinghouse design. Farley Units 1 and 2 are domestic plants which have a similar Safety Injection System configuration. The NRC accepted Southern Nuclear Company's request for an exigent TS change and issued the amendment (ML120730610) on March 24, 2012.

8.0 REFERENCES

1. VCSNS Station Orders SO 11-06, SO 11-22
2. NRC Information Notice (IN) 2012-01: Seismic Considerations – Principally Issues Involving Tanks
3. VCSNS Condition Reports: CR-11-03659
4. Accident Analysis (AA)-01, Revision 3
5. (ML120730610) Joseph M. Farley Nuclear Plant, Units 1 and 2, Issuance of Amendments Regarding Refueling Water Storage Tank

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ATTACHMENT 2

Proposed Technical Specification Changes (Mark-Up)

EMERGENCY CORE COOLING SYSTEMS

3/4.5.4 REFUELING WATER STORAGE TANK

LIMITING CONDITION FOR OPERATION

3.5.4 The refueling water storage tank (RWST) shall be OPERABLE with:

- a. A minimum contained borated water volume of 453,800 gallons,
- b. A boron concentration of between 2300 and 2500 ppm of boron, and
- c. A minimum water temperature of 40°F.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the refueling water storage tank inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.4 The RWST shall be demonstrated OPERABLE:

- a. At least once per 7 days by:
 1. Verifying the contained borated water volume in the tank, and
 2. Verifying the boron concentration of the water.
- b. At least once per 24 hours by verifying the RWST temperature when the outside air temperature is less than 40°F.

* RWST piping may be unisolated from non-safety related piping for ≤ 4 hours under administrative controls to perform SR 4.5.4.a.2.
RWST piping may be unisolated from non-safety related piping for ≤ 30 days (cumulative) per fuel cycle under administrative controls for filtration.
These alignments cannot be used after RF-22 (Fall 2015).

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ATTACHMENT 3

Proposed Technical Specification Pages (Retyped)

EMERGENCY CORE COOLING SYSTEMS

3/4.5.4 REFUELING WATER STORAGE TANK

LIMITING CONDITION FOR OPERATION

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ACTION:

With the refueling water storage tank inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

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- a. At least once per 7 days by:
 1. Verifying the contained borated water volume in the tank, and
 2. Verifying the boron concentration of the water.
- b. At least once per 24 hours by verifying the RWST temperature when the outside air temperature is less than 40°F.

* RWST piping may be unisolated from non-safety related piping for ≤ 4 hours under administrative controls to perform SR 4.5.4.a.2.

RWST piping may be unisolated from non-safety related piping for ≤ 30 days (cumulative) per fuel cycle under administrative controls for filtration.

These alignments cannot be used after RF-22 (Fall 2015).

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ATTACHMENT 4

Proposed Technical Specification Bases Changes (Mark-Up)

Page provided for section continuity only; no changes.

EMERGENCY CORE COOLING SYSTEMS

BASES

ECCS SUBSYSTEMS (Continued)

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps except the required OPERABLE charging pump to be inoperable below 300°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single RHR suction relief valve.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. Surveillance requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

3/4.5.4 REFUELING WATER STORAGE TANK

The OPERABILITY of the Refueling Water Storage Tank (RWST) as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of either a LOCA, a steamline break or inadvertent RCS depressurization. The limits of RWST minimum volume and boron concentration ensure 1) that sufficient water is available within containment to permit recirculation cooling flow to the core; 2) that the reactor will remain subcritical in the cold condition (68 to 212 degrees-F) following a small break LOCA assuming complete mixing of the RWST, RCS, Spray Additive Tank (SAT), containment spray system piping and ECCS water volumes with all control rods inserted except the most reactive control rod assembly (ARI-1), 3) that the reactor will remain subcritical in the cold condition following a large break LOCA (break flow area ≥ 3.0 sq. ft.) assuming complete mixing of the RWST, RCS, ECCS water and other sources of water that may eventually reside in the sump post-LOCA with all control rods assumed to be out (ARO), 4) long term subcriticality following a steamline break assuming ARI-1 and preclude fuel failure.

The maximum allowable value for the RWST boron concentration forms the basis for determining the time (Post-LOCA) at which operator action is required to switch over the ECCS to hot leg recirculation in order to avoid precipitation of the soluble boron.

The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics

EMERGENCY CORE COOLING SYSTEMS

INSERT: REFUELING WATER
STORAGE TANK

BASES

~~ECOS SUBSYSTEMS~~ (Continued)

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 7.5 and 11.0 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

The LIMITING CONDITION FOR OPERATION is modified by Notes that allow RWST piping flow paths to be unisolated from non-safety related piping under administrative controls for limited periods of time. The piping may be unisolated from non-safety related piping for ≤ 4 hours under administrative controls to perform SR 4.5.4.a.2, and for ≤ 30 days (cumulative) per fuel cycle under administrative controls for filtration. The time required for performance of SR 4.5.4.a.2 is not counted towards the cumulative 30 day total allowed for pre-outage RWST water filtration and demineralization. These administrative controls consist of ensuring sufficient RWST level margin exists above the design bases tank level, conducting a pre-job brief, monitoring the RWST level in the Control Room, using the recirculation return top connection to prevent another leak path, and assigning a dedicated operator to isolate the recirculation path if plant conditions require. These Notes are to allow recirculation and sampling of the RWST through the Spent Fuel Pool Purification System for filtering. These alignments cannot be used after RF-22 (Fall 2015).

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ATTACHMENT 5

Proposed Technical Specification Bases Pages (Retyped)

EMERGENCY CORE COOLING SYSTEMS

BASES

REFUELING WATER STORAGE TANK (Continued)

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 7.5 and 11.0 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

The LIMITING CONDITION FOR OPERATION is modified by Notes that allow RWST piping flow paths to be unisolated from non-safety related piping under administrative controls for limited periods of time. The piping may be unisolated from non-safety related piping for ≤ 4 hours under administrative controls to perform SR 4.5.4.a.2, and for ≤ 30 days (cumulative) per fuel cycle under administrative controls for filtration. The time required for performance of SR 4.5.4.a.2 is not counted towards the cumulative 30 day total allowed for pre-outage RWST water filtration and demineralization. These administrative controls consist of ensuring sufficient RWST level margin exists above the design bases tank level, conducting a pre-job brief, monitoring the RWST level in the Control Room, using the recirculation return top connection to prevent another leak path, and assigning a dedicated operator to isolate the recirculation path if plant conditions require. These Notes are to allow recirculation and sampling of the RWST through the Spent Fuel Pool Purification System for filtering. These alignments cannot be used after RF-22 (Fall 2015).

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ATTACHMENT 6

VCSNS Response to Anticipated NRC Questions

1. The specific operator actions required, both in the Control Room and the Auxiliary Building;

The designated operator can be a licensed operator or a valve operator qualified auxiliary operator. Per procedure, the operator will not be allowed to be a member of the fire brigade and will be required to stay within the seismically qualified Auxiliary Building (AB) 412' and Control Building (CB) 412' elevation.

Prior to aligning the RWST for recirculation, the control room operator is required to participate in a brief with the designated operator. The Control Room will be required to monitor the RWST level on one of the IPCS monitors and include it in the operator's routine instrument scans. The Control Room operator will be responsible for contacting the designated operator and directing performance of the action. The method of communication will be discussed in the required brief.

The specific operator actions required in the Auxiliary Building by the designated operator are to secure the SFP purification pump by a hand switch, walk to the RWST valve location and manually close the RWST SF Purification Header Supply Isolation valve XVT06701-SF.

2. Any potential harsh or inhospitable environmental conditions expected in the Aux Bldg or the ingress/egress paths;

The Auxiliary and Control Buildings are seismically qualified. All doors and stair towers will remain passable. There is no storage or hazardous material in the walk path. In the Control Building, there is a potential the Small Article Monitor (SAM) units or other equipment near the Radiologically Controlled Area (RCA) entry point may intrude on the walk way. These items are small and will not block the entire path. The operator will be able to traverse the area.

The RWST pit area will remain habitable to manually close XVT06701 given the following;

1. Valve XVD01929 Reactor Makeup Water Storage Tank (RMWST) on the RMWST is maintained closed during purification loop operation.
 2. The operator stops the Spent Fuel Pool purification pump before proceeding to the RWST pit to manually close XVT06701. Stopping the pump will stop inflow to the RWST pit if the return line is the break location.
3. A general discussion of the ingress/egress paths taken by the operator(s) to accomplish functions, including timing;

The designated operator is briefed to be readily available and able to secure the SFP Purification Pump and close XVT06701-SF within 10 minutes. The designated operator is required to stay within the seismically qualified AB 412' and CB 412' while awaiting direction to perform procedural tasks. The SFP purification pump control is located on the AB-412 elevation. The valve XVT06701-SF is located at the base of the RWST.

To access this location, the operator must walk down a corridor, exit the AB into the Control Building (CB), climb a stairtower and descend a ladder.

4. The procedural guidance for required actions;

SEE ATTACHMENT 7.

5. The specific operator training necessary to carry out actions, including any operator qualifications required to carry out actions;

The operator must be a qualified valve operator and be briefed on performing the required task. The operator is not required to be a licensed operator.

6. Any additional support personnel and/or equipment required by the operator(s) to carry out the required actions;

In addition to required Personal Protective Equipment (PPE), the operator will be equipped with a radio and a flashlight.

7. A description of the information required by the control room staff to determine whether the proposed action is required, including qualified instrumentation used to diagnose the situation, and, later, to verify that the required action has successfully been taken;

The Control Room staff will use two RWST indicators (ILT00990 and ILT00992) to determine RWST level. These safety related RG 1.97 instruments feed the Main Control Board (MCB) indicators and associated computer points. These computer points are averaged to obtain computer point UL1004. This computer point is specified in the draft procedure and is required to be maintained above 94% throughout the recirculation evolution.

8. The ability to recover from credible errors in performance of proposed manual actions, and the expected time required to make such a recovery;

Procedure SOP-123 is the applicable procedure when the RWST piping is unisolated from non-safety related piping. This procedure provides guidance for manipulating XVT06701-SF.

The most significant required action is the pre-job brief which will cover the method of communication between the Control Room and the designated operator, the limitations on movement of the designated operator, the location of the SFP purification pump and the valve to be operated, the ingress/egress path and the initiating conditions which require action to be taken. This brief is an effective method to verify understanding of the task and the set of pre-event conditions which will initiate the manual operator action.

It is to be noted that communication is specifically addressed in the brief, and it is this function between the control room and the valve operator that will direct the valve closure based on the following initiating events:

1. a Reactor Trip,
2. any unexplained Aux Bldg sump or tank level increase,
3. any unexplained RWST level decrease,
4. seismic event, or
5. direction of the Shift Supervisor.

The Control Room operators have various indicators as stated in the response to Question 7 to diagnose the previously mentioned four events.

In addition, the Control Room operators are required per SOP-123 to monitor RWST level while unisolated from non-safety related piping.

If the designated operator had physical problems, the remaining operating crew complement would be available to respond. The Shift Supervisor directive enhances the chance of recovery because of his overall plant outlook. If the operator assigned in the control room to work with the *XVT06701-SF* designated operator did not communicate in a timely fashion, the Shift Supervisor will have the oversight to acknowledge this and direct such communication.

9. Consideration of the risk significance of the proposed operator actions.

An evaluation has been performed and provides a quantitative risk assessment for closing *XVT06701-SF*, as part of the supporting documentation for VCSNS LAR 10-03912. The only action required for PRA success is the closure of *XVT06701-SF*, which can occur independently of securing the SFP Purification Pump.

The overall impact on CDF from a random failure of the RWST (XTK-25) was used as a surrogate for the Human Error Probability (HEP) event of an operator failing to close *XVT06701-SF*. The current model impact of a random failure of XTK-25 is $6.67\text{E-}11$. The estimated overall impact of the HEP to CDF is approximately $1.5\text{E-}11$. This impact is insignificant, as compared to the baseline CDF of $1.2486\text{E-}05$, since the change falls below the level of significant figures.

10. The method(s) used to validate the feasibility of completing required actions within the time available.

The feasibility of the valve operator completing required actions within the time available were validated using Operations Administrative Procedure (OAP) 101.3, Timeline Validation of Required Operator Actions. A physical walkdown of the route taken by the dedicated valve operator was conducted, beginning at the furthest point from the valve within the operator's restricted area and ending with the purification pump being secured

and XVT06701-SF being closed. The time obtained to complete these actions was 5 minutes and 48 seconds with an additional 2 minutes conservatively added to operate the valve.

11. In addition, discuss whether the NNS piping could fail in such a way as to prevent the operator from completing the isolation task, e.g. bending or fragmenting within the valve body in such a way as to prevent full closure. If the NNS piping should fail in this way, does the operator have another feasible success path?

When the Spent Fuel Pool purification loop is being used to circulate the RWST, it takes suction through XVT06701-SF and returns to the top of the tank. The piping downstream of XVT06701-SF is seismically designed through the bottom of the RWST pit. Supports SIH-1468 and SIH-1469 are designed to Code Class 2. With the piping immediately downstream of the valve seismically supported, there is no piping failure mechanisms expected to adversely impact valve operation.

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ATTACHMENT 7

Draft Operator Actions Procedures

J. REFUELING WATER STORAGE TANK PURIFICATION**1.0 INITIAL CONDITIONS**

- ☐ 1.1 RWST temperature is less than 140°F.
- ☐ 1.2 If this procedure is being performed during an outage, XVG06700-SF, REFUELING WATER STORAGE TANK OUTLET VLV is open.
- ☐ 1.3 RWST Level is greater than 94% as indicated on UL1004 (IPCS).
- ☐ 1.4 Pre-Job brief has been performed.
- ☐ 1.5 Attachment V read and signed by dedicated operator.

2.0 INSTRUCTIONS**NOTE 2.0**

Maintain the RWST level above 94%, as indicated on UL1004 (IPCS), during the entire evolution. Control room will direct the dedicated operator to secure and isolate purification on any of the following:

1. Reactor Trip.
2. Unexplained leakage into Aux Bldg as indicated by the leakage detection system or tank level increase.
3. Unexplained RWST level decrease.
4. Any seismic event as indicated by MCB indications.
5. At the direction of the Shift Supervisor.

- ☐ 2.1 Ensure Spent Fuel Purification is secured per Section III.

2.2 Verify the following valves are closed:

- ☐ a. XVD06669-SF, SPENT FUEL POOL PUR HDR ISOL VALVE (FB-436).
- ☐ b. XVD06674-SF, SPENT FUEL POOL PUR HDR SUPPLY VALVE (FB-436).
- ☐ c. XVD06692-SF, SF PUR HDR SF HEADER B SUP ISOL VALVE (AB-388).

- ☐ d. XVT06691-SF, SF PURIFICATION HEADER THROTTLE VALVE.
(YD-170'W).
- ☐ ~~2.3 Open XVT06701-SF, REFUEL WTR STG TK SF PUR HDR SUP ISOL
(YD-170'W).~~
- 2.3 Cycle XVT06701-SF, REFUEL WTR STG TK SF PUR HDR SUP ISOL
(YD-170'W) to ensure valve operability as follow:
 - ☐ a. Open XVT06701-SF, REFUEL WTR STG TK SF PUR HDR SUP ISOL
 - ☐ b. Close XVT06701-SF, REFUEL WTR STG TK SF PUR HDR SUP ISOL
 - ☐ c. Open XVT06701-SF, REFUEL WTR STG TK SF PUR HDR SUP ISOL

CAUTION 2.4

Use upper recirculation valve XVD06694-SF, SF PUR HDR HYDRO TEST HEADER ISOL VALVE back to the RWST.

DO NOT use lower recirculation valve XVT06691-SF, SF PURIFICATION HEADER THROTTLE VALVE

- ☐ ~~2.4 Open one of the following valves (YD-170'W):~~
 - ~~a. XVT06691-SF, SF PURIFICATION HEADER THROTTLE VALVE.~~
 - ~~b. XVD06694-SF, SF PUR HDR HYDRO TEST HEADER ISOL VALVE.~~
- ☐ 2.4 Open XVD06694-SF, SF PUR HDR HYDRO TEST HEADER ISOL VALVE
(YD-170'W).
- ☐ 2.5 Open XVD06675-SF, REFUEL WTR STG TK SF PUR HDR SUP VALVE
(AB-412).
- 2.6 If it is desired to bypass the Spent Fuel Cooling Demineralizer, perform the
following (AB-436):
 - ☐ a. Close XVD06684-SF, SPENT FUEL COOLING DEMIN INLET VALVE.
 - ☐ b. Open XVD06695-SF, SF PUR DEMIN BYPASS VALVE.

- ☐ ~~2.7 Start XPP0014, SPENT FUEL PURIFICATION PUMP (AB-412).~~
- ☐ 2.7 Place switch in start at XPN5107 LOC CNTR STAT FOR XPP0014 (AB-412)
- ☐ 2.8 Perform one of the following (AB-436):
- a. If the Spent Fuel Cooling Demineralizer is aligned for normal operation, to prevent channeling of the demin bed, throttle XVD06690-SF, SPENT FUEL PURIFICATION HDR ISOL VALVE, to establish a flow of less than 180 gpm as indicated by IFI07425, SPENT FUEL PUR FILT OUTLET FLOW IND.
 - b. If the Spent Fuel Cooling Demineralizer is bypassed, throttle XVD06690-SF, SPENT FUEL PURIFICATION HDR ISOL VALVE, to establish the desired flow rate as indicated by IFI07425, SPENT FUEL PUR FILT OUTLET FLOW IND.

NOTE 2.9

If throttling of XVD06745-SF is required, the flow rate on IFI07425, SPENT FUEL PUR FILT OUTLET FLOW IND, should be noted as a reduced flow rate will result in stratification, longer time required for recirculation, and inaccurate sample results.

- ☐ 2.9 If required, due to low RWST level, throttle XVD06745-SF, SF PURIFICATION PUMP DISCHARGE VALVE (AB-412), to maintain suction pressure greater than or equal to 6 psig, as indicated on PI-7411, PURIFICATION PUMP SUCTION PRESS (AB-412).
- ☐ ~~2.10 When purification/filtering is complete, stop XPP0014, SPENT FUEL PURIFICATION PUMP (AB-412).~~
- ☐ 2.10 When purification/filtering is complete, Place switch in stop at XPN5107 LOC CNTR STAT FOR XPP0014 (AB-412).
- 2.11 If bypassed, align the Spent Fuel Cooling Demineralizer for normal operation, by performing the following (AB-436):
- ☐ a. Open XVD06684-SF, SPENT FUEL COOLING DEMIN INLET VALVE.
 - ☐ b. Close XVD06695-SF, SF PUR DEMIN BYPASS VALVE.
- ☐ 2.12 Ensure XVD06745-SF, SF PURIFICATION PUMP DISCHARGE VALVE, is fully open (AB-412).

2.13 Close the following valves:

- ☐ a. XVT06701-SF, REFUEL WTR STG TK SF PUR HDR SUP ISOL (YD-170'W).
- ☐ ~~b. XVT06691-SF, SF PURIFICATION HEADER THROTTLE VALVE (YD-170'W).~~
- ☐ b. XVD06694-SF, SF PUR HDR HYDRO TEST HEADER ISOL VALVE (YD-170'W).
- ☐ c. XVD06675-SF, REFUEL WTR STG TK SF PUR HDR SUP VALVE (AB-412).

END OF SECTION

**DEDICATED OPERATOR DUTIES FOR
REFUELING WATER STORAGE TANK PURIFICATION**

1. Responsibilities of the Dedicated Operator:
- a. The Operator must be in contact with the Control Room at all times
 - b. The Operator must stay in the AB412 or CB412 while RWST is on purification.
 - c. The Operator must not have any other duties during the time RWST purification is in operation.
 - d. In the event of a REACTOR TRIP or as directed by the CONTROL ROOM, IMMEDIATELY Stop XPP0014, SPENT FUEL PURIFICATION PUMP (AB-412) and Close XVT06701-SF, REFUEL WTR STG TK SF PUR HDR SUP ISOL (YD-170'W).
 - e. If the Operator must leave area of responsibility then be relieved by another individual who has been briefed per this procedure, sign below and inform CONTROL ROOM, OR Perform step 1.d above.
2. Person responsible for REFUELING WATER STORAGE TANK PURIFICATION
- a. I have read and understand my responsibilities as listed in Step 1 above.
 - b.

<div>_____</div> <div>Name</div>	<div>_____</div> <div>Signature</div>	<div>_____</div> <div>Date</div>	<div>_____</div> <div>Time</div>
<div>_____</div> <div>Name</div>	<div>_____</div> <div>Signature</div>	<div>_____</div> <div>Date</div>	<div>_____</div> <div>Time</div>
<div>_____</div> <div>Name</div>	<div>_____</div> <div>Signature</div>	<div>_____</div> <div>Date</div>	<div>_____</div> <div>Time</div>
<div>_____</div> <div>Name</div>	<div>_____</div> <div>Signature</div>	<div>_____</div> <div>Date</div>	<div>_____</div> <div>Time</div>

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ATTACHMENT 8

VALVE OPERATOR QUALIFICATION

COURSE DESCRIPTION FOR O-AO-VALVEOP-OJT
(VALVE OPERATOR ON THE JOB TRAINING)

COURSE OBJECTIVES:

17619	O-E541	LIST INDICATIONS ASSOCIATED WITH FLOW THROUGH A VALVE	<input type="checkbox"/>
18437	O-E539	DESCRIBE THE CHARACTERISTICS OF PROPERLY OPERATING VALVES	<input type="checkbox"/>
18438	O-E540	DESCRIBE THE PROPER METHODS OF MANUALLY OPERATING VALVES	<input type="checkbox"/>
18562	O-E4617	DESCRIBE THE DEVICES USED TO LOCK COMPONENTS.	<input type="checkbox"/>
19222	O-E7003	DISCUSS OVER-TORQUING ISSUES RELATED TO HERMASEAL VALVES.	<input type="checkbox"/>
19390	O-EAO-OJT- VLVOP-8	EXPLAIN HOW TO DETERMINE THE POSITION OF AN EFW STOP-CHECK VALVE	<input type="checkbox"/>
19805	O-E4618	OUTLINE THE STEPS TO CHANGE THE POSITION OF A LOCKED COMPONENT.	<input type="checkbox"/>
20682	O-E4199	RELATE ANY PRECAUTIONS IN SAP-153 TO THEIR BASES AND TO SPECIFIC SITUATIONS.	<input type="checkbox"/>
21213	O-E4614	STATE THE PURPOSE OF THE LOCKED VALVE PROGRAM.	<input type="checkbox"/>
21766	O-E4196	STATE THE PURPOSE OF SAP-153	<input type="checkbox"/>
22746	O-EAO-OJT- VLVOP-5	EXPLAIN HOW TO DETERMINE THE POSITION OF A VALVE WITH A REACH-ROD OPERATOR	<input type="checkbox"/>
22871	O-E6809	STUDENT SHALL BE ABLE TO DEMONSTRATE ABILITY TO OPERATE THE TDEFW PUMP DISCHARGE VALVE.	<input type="checkbox"/>
22872	O-E6810	THE STUDENT WILL DEMONSTRATE THE ABILITY TO OPERATE THE SEAL INJECTION FILTER ISOLATION VALVES.	<input type="checkbox"/>
22879	O-E543	DESCRIBE THE BASIC OPERATION OF LIMITORQUE MOTOR OPERATOR, INCLUDING PRECAUTIONS ASSOCIATED WITH LOCAL MANIPULATIONS	<input type="checkbox"/>
22975	O-EAO-OJT- VLVOP-2	EXPLAIN HOW TO DETERMINE THE POSITION OF A LIMITORQUE VALVE	<input type="checkbox"/>
24059	O-E4615	DESCRIBE THE SCOPE OF THE LOCKED VALVE PROGRAM.	<input type="checkbox"/>
24738	O-E4198	OUTLINE THE RESPONSIBILITIES OF VARIOUS INDIVIDUALS AS DESCRIBED IN THE SAP-153.	<input type="checkbox"/>
25039	O-E4619	OUTLINE THE STEPS TO LOCK A COMPONENT IN THE REQUIRED POSITION.	<input type="checkbox"/>
25040	O-E4620	DESCRIBE THE RELATIONSHIP OF THE LOCKED VALVE TRACKING SHEET AND LOCKED COMPONENT OPERATING SHEET TO THE SYSTEM STATUS CONTROL PROGRAM (SAP-205).	<input type="checkbox"/>
25479	O-E4616	OUTLINE THE RESPONSIBILITIES RELATING TO THE LOCKED VALVE PROGRAM.	<input type="checkbox"/>
26405	O-EAO-OJT- VLVOP-3	EXPLAIN HOW TO DETERMINE THE POSITION OF A RISING-STEM VALVE	<input type="checkbox"/>
26573	O-E7002	DISCUSS INDUSTRY OPERATING EXPERIENCES RELATING TO REACH-ROD-OPERATED VALVES.	<input type="checkbox"/>
26593	O-EOAP-100.5- 4	DESCRIBE THE SPECIFIC GUIDELINES REGARDING VALVES, ACCORDING TO OAP-100.5	<input type="checkbox"/>
27042	O-EAO-OJT- VLVOP-6	EXPLAIN HOW TO DETERMINE THE POSITION OF VALVE WITH A "90x" OPERATOR HANDLE	<input type="checkbox"/>
27059	O-EAO-OJT- VLVOP-9	EXPLAIN HOW TO DETERMINE THE POSITION OF THE HIGH AND LOW PRESSURE STOP VALVES TO A MFP TURBINE	<input type="checkbox"/>
27595	O-E537	DESCRIBE THE CONSTRUCTION OF EACH TYPE OF VALVE USED AT SUMMER STATION, INCLUDING MAJOR DIFFERENCES	<input type="checkbox"/>
27899	O-EAO-OJT- MGMT-OBS	OBTAIN A MANAGEMENT OBSERVATION OF OJT/TPE. ACTIVITY OBSERVED:	<input type="checkbox"/>

28210	O-EAO-OJT- VLVOP-7	EXPLAIN HOW TO DETERMINE THE POSITION OF A NON-RETURN CHECK VALVE	<input type="checkbox"/>
29052	O-EAO-OJT- VLVOP-4	EXPLAIN HOW TO DETERMINE THE POSITION OF NON-RISING-STEM VALVE	<input type="checkbox"/>
30075	O-EAO-OJT- VLVOP-1	EXPLAIN HOW TO DETERMINE THE POSITION OF A DIAPHRAGM VALVE	<input type="checkbox"/>
34384	O-T3677	STUDENT SHALL BE ABLE DEMONSTRATE PROPER VALVE OPERATION TECHNIQUES ASSOCIATED WITH SYSTEM OPERATIONS	<input type="checkbox"/>
37600	O-AO-OJT-IFV- 3120-1	Describe how to use the gag lock nut on valves, such as IFV03120 (RE: CER-04-3837).	<input type="checkbox"/>
37647	O-AO-OJT- HERMA-1	Discuss the construction and proper operation of a Rockwell Edwards Hemavalve (Refer to CER-03-2494, Root Cause ES-508, and ONO 950018)	<input type="checkbox"/>
39267	O-AO-OJT- VALVEOP- CHAINOP	DISCUSS PROPER POSITIONING WHEN OPERATING A CHAIN-OPERATED VALVE (RE: CER-03-4258)	<input type="checkbox"/>

COURSE TASKS:

O-043-006-01-04	RESET EXTRACTION STEAM DRAIN VALVES	<input type="checkbox"/>
O-043-041-04-04	MANUALLY OPERATE GLAND SEAL PRESSURE CONTROL VALVE	<input type="checkbox"/>
O-056-025-04-04	MANUALLY OPERATE IFV-3192-CO AND IFV-3193-CO (CONDENSATE FLOW CONTROL VALVES) PER SOP-208	<input type="checkbox"/>
O-075-026-01-04	Operate XVA03775C-AT; Or Similar type valve.	<input type="checkbox"/>
O-079-006-04-04	LOCALLY OPERATE XVA02659-IA, IA TO RB IA BACKUP ISOL VALVE	<input type="checkbox"/>
O-079-007-04-04	LOCALLY OPERATE XVT02660-IA, RB IA SUPPLY ISOL VLV	<input type="checkbox"/>
O-086-041-01-04	PERFORM LINEUPS OF THE FIRE PROTECTION SYSTEM (CO2 - VALVE XVG-14072-FS)	<input type="checkbox"/>
O-086-043-01-04	GAG CLOSED XVG03105A(B), FIRE SERVICE TO D/G SERVICE WATER CROSS CONNECT VALVE	<input type="checkbox"/>
O-086-044-01-04	OPERATE XVM14096-FS (FS CO2 STG UNIT 3-Way Transfer valve)	<input type="checkbox"/>
O-086-045-01-04	Operate a Fire Service System Post Indicating Valve	<input type="checkbox"/>
O-086-046-01-04	OPERATE XVG-14072-FS (FS LP CO2 STORAGE TANK SHUTOFF VALVE)	<input type="checkbox"/>
O-099-007-01-04	OPERATE XVT16459A-VU, A CHILLER FREON FILTER OUTLET	<input type="checkbox"/>
O-115-001-04-04	OPERATE AIR-OPERATED VALVES LOCALLY	<input type="checkbox"/>

COURSE DOCUMENTS:

SAP*153	COMPONENT/CONDITION VERIFICATION	<input checked="" type="checkbox"/>	<input type="checkbox"/>
O&MR*433	INADEQUATE OPERATION AND MAINTENANCE OF REACH-ROD OPERATED VALVES	<input checked="" type="checkbox"/>	<input type="checkbox"/>
OAP*106.3	LOCKED VALVE PROGRAM	<input checked="" type="checkbox"/>	<input type="checkbox"/>
OE*11407	LOSS OF VCT LEVEL WHILE DRAINING A MIXED BED DEMINERALIZER	<input checked="" type="checkbox"/>	<input type="checkbox"/>
OS*007	OPERATION OF PLANT EQUIPMENT	<input checked="" type="checkbox"/>	<input type="checkbox"/>
OE*12007	VALVE REACH-ROD DEFICIENCY CONTRIBUTES TO RCS BORATION	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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ATTACHMENT 9

LIST OF REGULATORY COMMITMENTS

The following table identifies those actions committed to by SCE&G, Virgil C. Summer Nuclear Station in this document. Any other statements in this submittal are provided for information purposes and are not considered to be commitments. Please direct questions regarding these commitments to Bruce L. Thompson, Manager, Nuclear Licensing, (803) 931-5042.

COMMITMENT	Due Date/Event
The approved amendment will be implemented within 14 days.	Within 14 days upon receipt of amendment.