Nuclear Operating Company

South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

July 4, 2005
NOC-AE-05001891
10 CFR 50.90

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
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Rockville, MD 20852

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
License Amendment Request
Proposed Change to Technical Specification 3.7.4, "Essential Cooling Water System,"
and Associated Supported Systems Limiting Condition for Operation Action Statements

STP Nuclear Operating Company (STPNOC) hereby submits the attached proposed amendment to South Texas Project Operating Licenses NPF-76 and NPF-80. The proposed changes would extend the Allowed Outage Time for Technical Specification (TS) 3.7.4, "Essential Cooling Water System," and the associated TS for those systems supported by Essential Cooling Water, from 7 days to 14 days.

Attachment 1 to this letter provides the No Significant Hazards Determination and Attachment 3 provides the TS pages marked up with the proposed changes. Necessary changes to the TS Bases will be made in accordance with the requirements of 10 CFR 50.59 as part of the implementation of the proposed license amendment. Regulatory Guide 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," and Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to Licensing Basis," have been followed in preparing the proposed TS changes.

The STPNOC Plant Operations Review Committee has reviewed and concurred with the proposed change to the Technical Specifications.

In accordance with 10 CFR 50.91(b), STPNOC is notifying the State of Texas of this request for license amendment by providing a copy of this letter and its attachments.

A001

STI: 31887022

The only commitments made in this submittal are listed in Attachment 2.

If there are any questions regarding this license amendment request, please contact Mr. J. R. Morris at (361) 972-8652 or me at (361) 972-7849.

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

Executed on July 4th 2005

E. D. Halpin
Vice President, Oversight

jrm/

Attachments:

1. Description of Changes and Safety Evaluation
2. Commitments
3. Annotated Technical Specification Pages

cc:
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Attachment 1

Description of Changes and Safety Evaluation

1.0 Description

STP Nuclear Operating Company (STPNOC) hereby submits the attached proposed amendment to South Texas Project Operating Licenses NPF-76 and NPF-80. The proposed changes would extend the Allowed Outage Time for Technical Specification (TS) 3.7.4, "Essential Cooling Water System," and the associated TS for those systems supported by Essential Cooling Water, from 7 days to 14 days.

STPNOC is employing the STP Probabilistic Risk Assessment (PRA) to support a risk-informed extension of the AOT for an inoperable ECW train, or for an inoperable train of a TS system supported by ECW. The proposed changes will reduce unnecessary burden by providing operational flexibility, i.e., increase the allocation of maintenance time to more safety-significant equipment.

STPNOC requests approval of this license amendment request by December 15, 2005, and requests 90 days for implementation of the amendment after it is approved.

2.0 Proposed Change

STPNOC proposes to change TS 3.7.4 and the associated TS for those systems supported by ECW by extending the corresponding AOTs from 7 days to 14 days. Additionally, a corresponding administrative change is proposed to remove a one-time note from TS 3.7.4, which was added under Amendment 169 (Unit 1).

The TS markup is provided in Attachment 3. Changes to the Bases will be made as necessary in accordance with the requirements of 10 CFR 50.59 and TS 6.8.3.m, "TS Bases Control Program," as part of the implementation of the approved amendment.

The TS affected by the proposed change are:

TS 3.7.4, "Essential Cooling Water System"

> "With only two essential cooling water loops OPERABLE, restore at least three loops to OPERABLE status within 7 days* or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

TS 3.5.2, "ECCS Subsystems - T_{avg} Greater Than Or Equal To 350°F," ACTION a

> "With less than the above subsystems OPERABLE, but with at least two High Head Safety Injection pumps in an OPERABLE status, two Low Head Safety Injection pumps and associated RHR heat exchangers in an OPERABLE status, and sufficient flow paths to accommodate these OPERABLE Safety Injection pumps and RHR heat exchangers, ** restore the inoperable subsystem(s) to

OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours."

TS 3.5.6, "Residual Heat Removal (RHR) System," ACTION a

"With one RHR loop inoperable, restore the required loop to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours."

TS 3.6.2.1, "Containment Spray System"

"With one Containment Spray System inoperable, restore the inoperable Spray System to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours; restore the inoperable Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours."

TS 3.6.2.3, "Containment Cooling System"

"With one group of the above required Reactor Containment Fan Coolers inoperable, restore the inoperable group of RCFC to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

TS 3.7.3, "Component Cooling Water System"

"With only two component cooling water loops OPERABLE, restore at least three loops to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

TS 3.7.7, "Control Room Makeup and Cleanup Filtration System"

"With one Control Room Makeup and Cleanup Filtration System inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

TS 3.7.14, "Essential Chilled Water System"

"With only two Essential Chilled Water System loops OPERABLE, restore three loops to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

3.0 Background

System Description - ECW

The ECW system consists of three 50-percent capacity trains and provides cooling required for safety-related components during and after any design basis accident such as a loss of coolant accident, loss of offsite power, or a safe shutdown earthquake. Additionally, the ECW system functions during normal operation and other non-emergency operating modes to transfer heat loads from service equipment to the essential cooling pond. The ECW system provides cooling water to the following components during all emergency and non-emergency modes of operation:

- Standby Diesel Generator Inter-cooler
- Standby Diesel Generator Auxiliary Equipment Skid Coolers
  (Note that the Standby Diesel Generator Technical Specification AOT is 14 days. Consequently, there is no need to include the Standby Diesel Generator TS in the proposed AOT extension.)
- Essential HVAC Chiller (TS 3.7.14), which supports the following:
  - Emergency Core Cooling System (TS 3.5.2)
  - Containment Spray System (TS 3.6.2.1)
  - Control Room Makeup and Cleanup Filtration System (TS 3.7.7)
- Component Cooling Water Pump Supplementary Cooler
- Component Cooling Water Heat Exchanger (TS 3.7.3), which supports the following:
  - Emergency Core Cooling System (TS 3.5.2)
  - Residual Heat Removal System (TS 3.5.6)
  - Reactor Containment Fan Coolers (TS 3.6.2.3)

System Description - Supported Systems

Emergency Core Cooling System (TS 3.5.2)

The Emergency Core Cooling System (ECCS) consists of the high head safety injection (HHSI) and low head safety injection (LHSI) pumps, Safety Injection System (SIS) accumulators, residual heat removal (RHR) heat exchangers (HXs), the refueling water storage tank (RWST) along with the associated piping, valves, instrumentation, and other related equipment.

The ECCS components are designed such that a minimum of two accumulators delivering to two unaffected loops, and one HHSI and one LHSI pump delivering to an unaffected loop, will assure adequate core cooling in the event of a design basis loss of coolant accident (LOCA). The redundant onsite Standby Diesel

Generators (SDGs) assure adequate emergency power to all electrically-operated components in the event a loss-of-offsite power (LOOP) occurs simultaneously with a LOCA, even assuming a single failure in the emergency power system such as the failure of one SDG to start.

Residual Heat Removal System (TS 3.5.6)

The Residual Heat Removal (RHR) System transfers heat from the Reactor Coolant System (RCS) to the Component Cooling Water (CCW) System to reduce the temperature of the reactor coolant to the cold shutdown temperature at a controlled rate during the second part of normal plant cooldown and maintains this temperature until the plant is started up again.

Parts of the RHR system also serve as parts of the Safety Injection System (SIS) during the injection and recirculation phases of a LOCA.

The RHR system also is used to transfer refueling water from the refueling cavity to the RWST after the refueling operations are completed.

The RHR system consists of three RHR heat exchangers (HXs), three RHR pumps, and the associated piping, valves, and instrumentation necessary for operational control. The inlet lines to the RHR system are connected to the hot legs of three Reactor Coolant Loops (RCLs), while the return lines are connected to the cold legs of three RCLs. These return lines are also the SIS cold leg injection lines. The RHR suction lines are isolated from the RCS by two Motor Operated Valves (MOVs) in series and each discharge line is isolated from the RCS by two check valves and by a normally open MOV. All of these are located inside the Containment.

During RHR operation, reactor coolant flows from the RCS to the RHR pumps, through the tube side of the RHR HXs, and back to the RCS. The heat is transferred to the CCW circulating through the shell side of the RHR HXs.

Containment Spray System (TS 3.6.2.1)

The Containment Spray (CS) System provides water spray to the Containment during the unlikely event of a design basis accident (DBA) to depressurize the Containment and minimize the release of radioactive iodine to the environment.

The CS system consists of three independent, identical trains, each consisting of a spray pump, valves, piping and instrumentation. Following a LOCA, the CS system:

1. Maintains Reactor Containment Building (RCB) pressure within design limits.
2. Reduces the quantity of airborne iodine.

3. Establishes the sump pH for retention of elemental iodine.

Trisodium phosphate is located at strategic points in the post-LOCA flooded regions of the Containment and dissolves during initial spray and recirculation, which consistent with the design basis, assures iodine retention in the sump solution. Before the RWST is emptied, the Containment spray pump suctions are switched automatically to the Containment emergency sumps.

Reactor Containment Fan Coolers (TS 3.6.2.3)

The Reactor Containment Fan Cooler (RCFC) units are designed to remove heat from the Containment during both normal operation and accident conditions. The RCFC system consists of three independent trains, each of which includes two fan cooler units. Each fan cooler unit contains a fan and motor assembly, cooling coil, and backdraft damper.

Component Cooling Water (TS 3.7.3)

The CCW System is designed to provide cooling water to various nuclear plant components during all modes of plant operation. This includes plant equipment required for safe shutdown and Engineered Safety Features (ESF) equipment required after a postulated DBA. Additionally, the CCW system provides an intermediate fluid barrier between potentially radioactive systems and the ECW system to reduce the possibility of leakage of radioactive contamination to the outside environment. The CCW system can perform its cooling function following a DBA with offsite or standby power sources, automatically and without operator action, assuming a single active or passive failure.

The CCW system consists of three separate redundant trains, each with a pump, HX, associated piping, and valves, that service two RCFCs, a RHR heat exchanger, and RHR pump. For heat removal following a DBA, all three CCW trains will operate if available, but two trains are capable of performing the heat removal function

Control Room Makeup and Cleanup Filtration (TS 3.7.7)

The control room envelope HVAC system is designed to maintain the control room envelope area at room design temperature and relative humidity conditions.

The HVAC system is also designed to maintain the control room envelope at a minimum of 0.125-inch water gauge (wg) positive pressure relative to the surrounding area, following postulated accidents other than hazardous chemical/smoke releases and/or LOOP, by introducing makeup air equivalent to the expected exfiltration air during plant emergency conditions (ESF signal and/or high radiation in outside air). Additionally, during postulated accident conditions,

on detection of high radiation in the outside air or safety injection (SI) signal, outside makeup air for the control room envelope is automatically routed through makeup air units and cleanup units containing charcoal filters. The control room air is also automatically recirculated partially through control room air cleanup units containing charcoal filters. This arrangement provides cleanup of the control room air. A LOOP event by itself does not start the makeup air units, but it does isolate the control room envelope and start cleanup units.

Essential Chilled Water System (TS 3.7.14)

The Essential Chilled Water (ECH) system provides a suitable environment to personnel and Class 1E equipment in the Electrical Auxiliary Building (EAB), Mechanical Auxiliary Building (MAB), and Fuel Handling Building (FHB) during all operating conditions. The ECH system provides chilled water to safety related Air Handling Units (AHUs) during faulted conditions, and provides the cooling medium for the control room envelope during all operating conditions.

The ECH system is a three-train closed-loop system, with each safety-related 50% capacity train consisting of a Chilled Water Pump, an Expansion Tank, and a 300-ton Chiller unit. The system is designed to remain functional during all design basis accidents and to maintain the plant at safe shutdown conditions. Two of the three trains are required to perform this function, without any operator action required.

The ECH system is designed to accomplish its function with onsite emergency power during loss of offsite power. The condenser water to the Chillers is supplied by Essential Cooling Water, which serves as the ultimate heat sink.

4.0 Technical Evaluation

The ECW system is designed to supply cooling water to various safety-related systems for normal plant operation as well as normal shutdown and during and after postulated DBAs. The ECW system is designed to perform its cooling function following a DBA with either offsite or onsite power available, automatically and without operator action, assuming a single failure. A minimum of two ECW trains is required to operate following a DBA. A separate and independent ECW system is provided for each unit of the South Texas Project.

Heat rejection to the ECW system during either normal operation, normal shutdown, or DBA conditions is accomplished by three redundant cooling water loops, each having its own pump, motor, self-cleaning strainer, piping, valves, and instrumentation. Each loop contains one set of SDG Heat Exchangers, one CCW Heat Exchanger, one essential chiller condenser, and one CCW pump supplementary cooler. Cooling water is supplied to each of these components during all modes of operation, whether or not the particular

equipment is operating. An ECW loop is required to operate whenever its corresponding CCW loop is in operation.

In the event of LOOP, power to the ECW pumps is supplied by the ESF buses, which are supplied by the SDGs. Each Class 1E ESF bus provides electrical power to its respective ECW system cooling loop. As stated in UFSAR Section 9.2.1.2.2.3, a minimum of two ECW trains is required to operate following a DBA.

4.1 Description of Proposed Change and Reasons for the Change

This amendment request proposes to extend the AOT for a single inoperable ECW train or ECW-supported system from 7 days to 14 days. Additionally, a corresponding administrative change is proposed to remove a one-time note from TS 3.7.4, which was added under Amendment 169 (Unit 1).

This change meets the objectives of the NRC PRA Policy Statement by making more efficient use of resources and reducing unnecessary burden. Extending the AOT for one inoperable ECW train or for a train supported by ECW will reduce an unnecessary burden by providing operational flexibility, i.e., increase the allocation of maintenance time to more safety-significant equipment.

4.2 Process Used to Arrive at Proposed Change

The STPNOC PRA Analysis / Assessment procedure and the reference at-power PRA model were used to evaluate the maintenance states reflecting the extended AOT for any one inoperable ECW train, and/or its supported systems, and to determine the impact on Core Damage frequency (CDF) and Large Early Release Frequency (LERF).

4.3 Traditional Engineering Evaluations Performed

This change to TS 3.7.4 and its related TS does not involve any physical changes to the plant or to the ECW system design that would affect the intent of the General Design Criteria, national standards, or engineering principles.

Consistency with the defense-in-depth philosophy is maintained. Reasonable balance among prevention of core damage, prevention of containment failure, and consequence mitigation is preserved. Anticipated operational changes would not introduce new accidents or transients and would not increase the likelihood of an accident or transient.

The independence of physical barriers has not been degraded by the TS change. The change in AOT does not affect physical barriers in any manner. Defenses against human errors are maintained.

Sufficient safety margins are maintained in that the proposed AOT change is not in conflict with approved Codes and standards relevant to ECW and its supported systems.

The assessment performed in accordance with the STPNOC Analysis / Assessment procedure demonstrates that the proposed AOT change does not adversely affect any assumptions or inputs to the safety analysis.

This proposed Technical Specification change applies to single train AOT, thus two redundant ECW safety trains remain operable during the extended AOT. In addition, Attachment 2 provides a set of compensatory measures designed to maintain safety function defense-in-depth.

There is no adverse effect on the UFSAR acceptance criteria assuming the plant is in the AOT and there are no additional failures.

4.4 Changes Made to PRA for Change Evaluation

In this analysis, the STP average Maintenance Model STP_RV42 was modified to account for a 14-day Extended AOT (EAOT) on all systems evaluated in this analysis. The systems impacted by this analysis are Essential Cooling Water (ECW), Essential Chilled Water (ECH), Component Cooling Water (CCW), Residual Heat Removal (RHR), Reactor Containment Fan Coolers (RCFC), Containment Spray (CS), Safety Injection (SI), Electrical Auxiliary Building (EAB HVAC), and Control Room Envelope (CR HVAC). An aggregate model was developed to show in case 1 the effect of a 14-day EAOT using a generic unplanned maintenance duration distribution. The aggregate model was also used as a sensitivity model in case 2 showing the effect of both a 14-day EAOT and a doubling of the planned unavailability modeled in the PRA for the affected systems. This planned and unplanned unavailability sensitivity model was created because it was assumed that the planned unavailability could increase by a limited amount following implementation of the proposed license amendment. However, it should be noted that STPNOC plans and performs maintenance and testing activities using a train-specific 7-day work week (i.e., Train A equipment maintenance and testing is performed during Week 1, Train B equipment maintenance and testing is performed during Week 2, etc.). Therefore, it is expected that in most cases the inoperability times for these systems will be less than 7 days and that use of the entire 14-day AOT would be infrequent.

Technical Specification operability dependencies on ECW for the EAB and CR HVAC systems and the SI pump room air handling units have been modified in the reference PRA based on additional best estimate engineering calculations. In the STP PRA, there is no direct dependency between the ECH and the HVAC systems due to Smoke Purge capability. The loss of an ECH train will not prevent the associated EAB or CR fans from removing heat/smoke from the associated areas. The STP PRA models an indirect dependency between the ECH and SI based on room heat load calculations. Therefore, in the Average Maintenance PRA and the Zero Maintenance Models, a direct dependency between the ECH and the SI and HVAC systems is not modeled.

Additional sensitivity models were developed using the PRA Model. A sensitivity case was developed to represent a direct dependency between the ECH and the SI and EAB HVAC systems. This established a new reference (Base) model. Sensitivity case 1 models all aspects described in aggregate case 1 with the direct dependency modeling described in the sensitivity reference (Base) model. Sensitivity case 2 models all aspects described in aggregate case 2 with the direct dependency modeling described in the sensitivity reference (Base) model. These sensitivity cases were used to bound the direct dependency assumption of the ECH and the SI and HVAC systems in an average maintenance model.

These results are presented in Section 4.8 below.

Incremental Conditional Core Damage Probability (ICCDP) and Incremental Conditional Large Early Release Probability (ICLERP) evaluations were also performed using the Effective Zero Maintenance Model MAS_RV42. These evaluations show that the ECW system results bound all other PRA-supported systems for the proposed change. A summary of these results is presented in Section 4.8 below. Additional sensitivity studies were performed assuming direct dependency between the ECH and the SI and EAB HVAC systems by failing the associated systems at the same time. These results are not included in Section 4.8.

4.5 Applicability and Quality of PRA Models for Evaluation

STPNOC has a Level 1/Level 2 PRA and Individual Plant Evaluation (IPE) that includes external events. The external events portion contains a high wind, fire, flood, and seismic PRA analysis. The STP PRA has been structured to have a comprehensive treatment of common cause failures and plant configurations. A detailed human reliability analysis is also included.

The STP PRA has undergone several extensive NRC reviews in support of license amendments:

- "A Review of the South Texas Probabilistic Safety Analysis for Accident Frequency Estimates and Containment Binning," Sandia National Laboratories, NUREG/CR 5606, dated August 1991
- "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to the Probabilistic Safety Analysis Evaluation," sent to Houston Lighting & Power Company under cover letter dated January 21, 1992 (ST-AE-HL-92962)
- "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to the Probabilistic Safety Assessment - External Events," sent to Houston Lighting & Power Company under cover letter dated August 31, 1993 (ST-AE-HL-93526)
- "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment Nos. 59 and 47 to Facility Operating License Nos. NPF-76 and NPF-80," sent to Houston Lighting & Power Company under cover letter dated February 17, 1994

- "Staff Evaluation of South Texas Project Individual Plant Examination (IPE) (Internal Events Only)," sent to Houston Lighting & Power Company under cover letter dated August 9, 1995 (ST-AE-HL-94279) (included equipment survivability analysis)
- "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment Nos. 85 and 72 to Facility Operating License Nos. NPF-76 and NPF-80," sent to Houston Lighting & Power Company under cover letter dated October 31, 1996 (ST-AE-HL-94678). This amendment allows extension of the standby diesel generator AOT to fourteen days, and extension of the essential cooling water and essential chilled water AOTs to seven days.
- "Safety Evaluation by the Office of Nuclear Reactor Regulation, Houston Lighting & Power Company South Texas Project, Units 1 and 2, Graded Quality Assurance Program," sent to Houston Lighting & Power Company under cover letter dated November 6, 1997 (ST-AE-HL-94983)
- "Safety Evaluation by the Office of Nuclear Reactor Regulation, Risk-Informed Exemptions from Special Treatment Requirements," sent to STP Nuclear Operating Company under cover letter dated August 3, 2001 (AE-NOC-01000845)

4.6 Risk Measures Used in Evaluations

According to Regulatory Guide 1.174, a change in CDF of less than 1.0E-6 per reactor year and a change in LERF of less than 1.0E-7 per reactor year are considered very small for a change to the plant. Regulatory Guide 1.174 also considers changes in CDF less than 1.0E-5 and greater than 1.0E-6 to be small changes that require tracking of cumulative impact. Tracking of cumulative impact is accomplished via the Configuration Risk Management Program (CRMP) and station goals.

According to Regulatory Guide 1.177, for a proposed permanent AOT extension, the licensee has to demonstrate that the extension of the TS AOT has only a small quantitative impact on plant risk. Regulatory Guide 1.177 states that an Incremental Conditional Core Damage Probability (ICCDP) of less than 5.0E-7 and an Incremental Conditional Large Early Release Probability (ICLERP) of less than 5.0E-8 are considered small for a single AOT TS change. Section 4.8 tabulates the ΔCDF, ΔLERF, ICCDP and ICLERP calculated in the first part of the risk analysis performed for the extension of the AOT to 14 days for one inoperable ECW or support system train.

The second part of the analysis uses the requirements of 10 CFR 50.65(a)(4) in the bounding cases to assess and manage the risk that may result from maintenance activities. The effective zero maintenance model is used to determine the number of days it will take to reach the non-risk significant threshold (as defined in the STPNOC CRMP procedure) for one ECW or support system train being out of service for maintenance.

4.7 Data in Addition to PRA Database

There was no data required in addition to the PRA database.

4.8 Summary of Risk Measures Calculated and Intermediate Results

The ΔCDF and ΔLERF results of the average maintenance model evaluations described in Section 4.4 above are as follows:

Model	CDF	LERF	ΔCDF	ΔLERF
STP_RV42	9.3E-6	5.1E-7		
Aggregate Case 1	1.1E-5	5.6E-07	**1.5E-6**	**4.7E-8**
Aggregate Case 2	1.3E-5	7.0E-07	3.7E-6	1.8E-7
Sensitivity Reference (Base)	1.4E-5	7.4E-7		
Sensitivity Case 1	1.9E-5	9.0E-7	4.8E-6	1.5E-7
Sensitivity Case 2	2.5E-5	1.2E-6	1.0E-5	4.4E-7

Where:

- STP_RV42 is the Reference STP PRA Average Maintenance Model.
- Aggregate Case 1 is the STP Average Maintenance Model evaluated for the effect of a 14-day EAOT increase in unplanned maintenance for ECW and ECW-supported systems.
- Aggregate Case 2 is the STP Average Maintenance Model evaluated for the effect of a 14-day EAOT increase in unplanned maintenance for ECW and ECW-supported systems and the doubling of the planned unavailability for all affected systems.
- Sensitivity Reference (Base) is a clone of STP_RV42 with direct dependency modeling between the ECH, SI, and EAB HVAC systems.
- Sensitivity Case 1 is the STP Average Maintenance Model evaluated for the effect of a 14-day EAOT increase in unplanned maintenance for ECW and ECW-supported systems with the direct dependency modeling between the ECH, SI, and EAB HVAC systems.
- Sensitivity Case 2 is the STP Average Maintenance Model evaluated for the effect of a 14-day EAOT increase in unplanned maintenance for ECW and ECW-supported systems with the doubling of the planned unavailability for all affected systems, and the direct dependency modeling between the ECH, SI, and EAB HVAC systems.

As tabulated above, the analysis demonstrates that ΔCDF and ΔLERF for each of the evaluated cases meet either the Regulatory Guide (RG) 1.174 Region III definition of acceptable small changes or the Region II definition of acceptable small changes that require tracking of cumulative impact via the CRMP. Additionally, The calculated increase in CDF is in the range of 10^{-6} per reactor year to 10^{-5} per reactor year, and it can be reasonably shown that the total CDF is less than 10^{-4} per reactor year (Region II). The best-estimate ΔCDF is 1.5E-06, which slightly exceeds the 1.0E-06 limit, whereas the corresponding best-estimate ΔLERF of 4.7E-08 is within the 1.0E-07 limit. The other analyzed cases, although still considered acceptable small changes per RG 1.174, represent conservative bounding results.

Using the STP PRA reference zero maintenance model, MAS_RV42, each single-train maintenance configuration for ECW and ECW-supported systems was evaluated for both Level 1 and Level 2 results in order to quantify the ICCDP and ICLERP for a 7-day AOT extension. The results for the most limiting TS equipment maintenance configurations (a single ECW train inoperable) are presented below:

ICCDP Calculation for 7-day AOT extension			
Idle Train	**CCDF**	**CDF**	**ICCDP 7 Days**
ECW A	3.6E-05	7.5E-06	5.5E-07
ECW B	3.6E-05	7.4E-06	5.4E-07
ECW C	4.4E-05	7.4E-06	6.9E-07

ICLERP Calculation for 7-day AOT extension			
Idle Train	**CLERF**	**LERF**	**ICLERP 7 Days**
ECW A	2.6E-06	4.1E-07	4.2E-08
ECW B	2.4E-06	4.0E-07	3.8E-08
ECW C	2.9E-06	4.0E-07	4.8E-08

As indicated above, the Regulatory Guide 1.177 ICCDP limit of 5.0E-07 was slightly exceeded for a single inoperable ECW train, whereas the ICLERP values were within the limit of 5.0E-08. The 1E-6 administrative ICCDP threshold for the ECW system is crossed in approximately 10 to 12.9 days depending on the train assumed to be out of service, and no other cross train maintenance.

Accordingly, as part of implementation of the proposed Technical Specification change, the Risk Management compensatory measures described in Section 4.10 below will be established if the planned cumulative risk profile exceeds the administrative threshold value of 1.0E-6.

It is expected that most planned equipment outages will be relatively short in duration, and that the full 14-day AOT would only be used infrequently. Additionally, due to other risk informed applications that control total system unavailability (such as the Maintenance Rule), the typical risk impact due to an inoperable ECW or ECW-supported equipment train would be less than bounding values calculated for the proposed AOT change.

4.9 Uncertainty Analyses

All case studies evaluated for the proposed TS change are sensitivity studies on the base model. The results of this analysis introduce no new uncertainties into the STP PRA. The uncertainty of the STP PRA spans one order of magnitude.

4.10 Summary of Risk Impacts and Proposed Compensating Actions

Once the new CDF and LERF values were determined, a three-tiered approach was implemented in accordance with Regulatory Guide 1.177 to evaluate the risk associated with the proposed TS AOT extension as follows.

The Tier 1 evaluation quantifies the impact on plant risk of the proposed TS change as expressed by the change in CDF, ICCDP, change in LERF, and ICLERP.

The Tier 2 evaluation identifies potentially high risk configurations that could exist if equipment in addition to that associated with the change were to be taken out of service simultaneously, or other risk-significant operational factors such as concurrent system or equipment testing were also involved. For this evaluation, the Average Plant Model was used, which accounts for average maintenance, both planned and unplanned, occurring concurrent with the proposed change.

A Tier 3 evaluation was not necessary because STP has a configuration risk management program in place.

Assumptions:

The following assumptions were made in accordance with Regulatory Guide 1.177:

- CDF and LERF were estimated using the mean outage times for the current and proposed AOT duration distributions.
- Using a value of two times the planned unavailability is assumed to be a bounding assumption. It is expected that most planned equipment outages will be relatively short in duration and that the full 14-day AOT would only be used infrequently. Additionally, due to other risk-informed applications that control total system unavailability (such as the Maintenance Rule), two times the planned maintenance unavailability value sufficiently bounds this evaluation.
- Creating a direct dependency in the sensitivity studies between the ECH system and SI and HVAC systems is considered a bounding assumption, as the PRA

assumes there is not a direct dependency between these systems based on best estimate heat-up calculations.
- Scheduled preventative maintenance downtime is representative of current plant practices.
- All other assumptions in the reference PRA models STP_RV42 and MAS_RV42 were unchanged, except as described in the sensitivity studies, and remain valid.

The case studies presented are bounding cases and do not represent current or expected plant practices. It is expected that plant maintenance will continue at the current frequency and duration, and that very infrequently a single train will be taken out of service for an extended time. The case studies are required to assume that a train of ECW or one of the ECW-supported systems will be taken out of service at the current maintenance frequency for the expected AOT and therefore are conservative in determining a realistic ΔCDF.

Proposed Compensating Measures:

Compensatory measures will be used to offset the increased risk of allowing a 14-day AOT and will be implemented when it is recognized that the cumulative risk profile for a planned or unplanned entry into the AOT for ECW, ECH, CCW, RHR, RCFC, CS, SI, EAB HVAC, or CR HVAC is expected to exceed the 1.0E-06 administrative risk threshold. The measures will be implemented through a licensee-controlled document. These measures are:

1. If the cumulative risk profile is expected to exceed the 1.0E-06 threshold for:

   - An ECW train, Operations crews will review and be prepared to implement the ECW cross-tie capability described in station procedures in the event of a plant transient in order to recover functional SDG and ECH trains rendered inoperable due to maintenance.
   - An ECW train, STPNOC will ensure the Work Schedule contains no planned maintenance that would result in the AFW or Steam Generator PORVs being declared non-functional.
   - The ECH, EAB HVAC or CR HVAC systems, STPNOC will ensure the Work Schedule contains no planned maintenance that would result in the Smoke Purge Capability being non-functional.
   - The SI system, STPNOC will ensure the Work Schedule contains no planned maintenance that would result in the Centrifugal Charging pumps, the AFW system, Pressurizer Power Operated Relief Valves (PORVs), or Steam Generator PORVs being non-functional.

2. The Risk Management compensatory actions already described in the station's Configuration Risk Management procedure for Standby Diesel Generators, ECW, ECH, and Auxiliary Feedwater, will be similarly applied to an AOT for CCW, RHR, RCFC, CS, SI, EAB HVAC, or CR HVAC if the cumulative risk profile is expected to exceed the 1.0E-06 threshold. These include:

   - Reduce duration of risk sensitive activities.
   - Remove risk sensitive activities from the planned work scope.
   - Reschedule high-risk significant activities to avoid high-risk significant outages or maintenance states.
   - Accelerate the restoration of out-of-service equipment.
   - Determine and establish the safest plant configuration.
   - Establish contingency plan to reduce the effects of the degradation of the effected systems, structures, and components (SSCs) by utilizing the following:
     - Operator actions
     - Increased awareness of plant configuration concerns and the effects of certain activities and transients on plant stability
     - Administrative controls
     - Ensure availability of functionally redundant equipment
   - Consider augmenting current site resources to assist in restoring equipment to functional status.

3. The Risk Management compensatory actions already described in the station's Extended Allowed Outage Time procedure will be similarly applied to an AOT for CCW, RHR, RCFC, CS, SI, EAB HVAC, or CR HVAC if the cumulative risk profile is expected to exceed the 1.0E-06 threshold. These include:

   - Planned maintenance on required systems, subsystems, trains, components, and devices that depend on the other trains of equipment during the EAOT shall not be performed.
   - If entering an EAOT for a Standby Diesel Generator (SDG), ECW, or ECW-supported systems, then planned maintenance or other planned testing of the TSC DG shall not be allowed throughout the EAOT.
   - If entering an EAOT for a SDG, ECW, or ECW-supported systems, then planned maintenance or other planned testing of the Positive Displacement Charging Pump shall not be allowed throughout the EAOT.
   - Maintenance activities in the switchyard, which could directly cause a LOOP event, shall be prohibited unless required to ensure the continued reliability and availability of the offsite power sources during the EAOT.

- Ensure the work schedule contains no planned maintenance on required systems, subsystems, trains, components, and devices that depend on or that affect the remaining system trains throughout the EAOT.
- If entering an EAOT for a Motor Driven Auxiliary Feedwater (MDAFW) pump, then ensure the Work Schedule contains no planned maintenance, which would result in the ECW system and the systems it supports being declared non-functional.
- Ensure the Work Schedule contains no planned maintenance that would result in an inoperable open containment penetration.

4.11 Contemporaneous Assessment of the Impact on Safety

STP currently has in place a risk-informed, on-line maintenance tracking and control process. The CRMP was incorporated into the TS via Amendments 85 and 72, issued on October 31, 1996. In the Safety Evaluation, the NRC Staff concluded that STP had "provided the necessary assurances that appropriate assessments of the overall impacts on safety functions will be performed prior to any maintenance or other operational activities, including removal of equipment from service."

The CRMP is used to assess the risk impact of equipment out-of-service, to maintain station risk at desired levels, and to assess risk impacts for planned and unplanned equipment outages that are modeled in the STP PRA. The CRMP is applicable to SSCs within the scope of the station's PRA as reflected in the RAsCal for Mode 1 and 2 operations and Shutdown Risk Assessment for Modes 5, 6, and Defueled.

The CRMP satisfies the requirements of the Maintenance Rule to assess the cumulative effects of maintenance and testing on SSC. The CRMP governing procedure satisfies the Maintenance Rule requirements for the applicable modes, as specified in 10 CFR 50.65(a)(4).

RAsCal is the computer software used to assess the changes in CDF due to varying plant configurations resulting from planned or unplanned maintenance activities on risk significant equipment in Modes 1 and 2.

The Risk and Reliability Analysis Section assesses the yearly cumulative risk for each unit and communicates the results to affected personnel. Work schedules are adjusted to desired levels of risk for Modes 1 and 2. Unplanned Event Risk Assessments are made for Modes 1 and 2 and outage schedules and risk assessments are performed for Modes 5, 6, and Defueled. Risk assessments consider any significant performance issues associated with the standby trains of the SSC.

On-Line Maintenance - As equipment becomes functional or non-functional, the designated on-shift Senior Reactor Operator is responsible for ensuring the weekly risk

profile is updated with actual back in service times and actual out of service times for SSC modeled in RAsCal.

Unplanned Events - During an Unplanned Event, the Shift Supervisor determines whether the SSC is within the scope of RAsCal. If the SSC is not within the scope of RAsCal, then the CRMP does not apply. The designated on-shift Senior Reactor Operator calculates a projected weekly cumulative risk for the expected duration of the Unplanned Event. If the projected weekly cumulative risk will not exceed the Non Risk-Significant Threshold (1.0E-6 events/year), then no further action is required. The Shift Supervisor may heighten station awareness of work that is risk significant to ensure completion of the work as scheduled.

Risk Reduction - If the Non Risk-Significant Threshold is projected to be exceeded within the current work week and the exceedance has not been previously approved by the Plant Manager, the Shift Supervisor notifies the Duty Operations Manager and Duty Plant Manager, and identifies and implements compensatory measures approved by the Duty Plant Manager.

If the Potentially Risk Significant Threshold (1.0E-05 events/year) is projected to be exceeded within the current work week, the Shift Supervisor notifies the Duty Operations Manager and the Duty Plant Manager, and reviews the Technical Specifications, Technical Requirements Manual, and the Offsite Dose Calculation Manual requirements for affected equipment to ensure associated actions are being performed. The Shift Supervisor also evaluates changing current plant conditions to place the Unit in a mode or a power level that may reduce the relative risk.

5.0 Regulatory Evaluation

5.1 Determination of No Significant Hazards:

STPNOC has reviewed the proposed amendment request in accordance with 10 CFR 50.92(c) and determined that its adoption involves no significant hazards consideration, as discussed below.

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

   Response: No.

   Since only one train of components is affected by the condition and single failure is not considered while a plant is in an LCO ACTION, the operable ESF trains are adequate to maintain the plant's design basis. Thus, this condition will not alter assumptions relative to the mitigation of an accident or transient event.

Considering compensatory action and risks involved in a plant shutdown, STPNOC has determined that there is no significant risk associated with extending the Allowed Outage Time for the Essential Cooling Water System and the systems it supports for an additional 7 days. Additionally, the proposed change to remove the one-time note from TS 3.7.4 is considered an administrative change and does not impact the probability or consequences of any accident previously evaluated.

Based on this evaluation, there is no significant increase in the probability or consequence of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different accident from any accident previously evaluated?

   Response: No.

   This proposed change only extends an Allowed Outage Time and will not physically alter the plant. No new or different type of equipment will be installed by this action. The changes in methods governing normal plant operation are consistent with current safety analysis assumptions. No change to the system as evaluated in the South Texas Project safety analysis is proposed. The proposed change to remove the one-time note from TS 3.7.4 is considered an administrative change and does not create the possibility of a new or different kind of accident previously evaluated.

   Therefore, this proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   Response: No.

   Considering compensatory action and risks involved in a plant shutdown, STPNOC has determined that there is no significant risk associated with extending the Allowed Outage Time for the Essential Cooling Water System and the systems it supports for an additional 7 days.

   Based on the availability of redundant systems, the compensatory actions that will be taken, and the extremely low probability of an accident that could not be mitigated by the available systems, STPNOC concludes that there is no significant reduction in the margin of safety. The proposed change to remove the one-time note from TS 3.7.4 is considered an administrative change and does not impact any margin of safety.

Based upon the analysis provided herein, the proposed amendments do not involve a significant hazards consideration.

5.2 Applicable Regulatory Requirements/Criteria:

With the implementation of the proposed change, STP Units 1 and 2 continue to meet applicable design criteria. The proposed change does not affect the design basis of the plant. In addition, STP Units 1 and 2 will remain within the scope of the TS Limiting Conditions for Operation and are still subject to the requirements of the action statements.

Since the mid-1980s, the NRC has been reviewing and granting improvements to TS that are based, at least in part, on PRA insights. In its final policy statement on TS improvements of July 22, 1993, the NRC stated that it expects that licensees, in preparing their Technical Specification related submittals, will utilize any plant-specific PSA (probabilistic safety assessment) or risk survey and any available literature on risk insights and PSAs. Similarly, the NRC staff will also employ risk insights and PSAs in evaluating Technical Specification related submittals. Further, as a part of the Commission's ongoing program of improving Technical Specifications, it will continue to consider methods to make better use of risk and reliability information for defining future generic Technical Specification requirements. The NRC reiterated this point when it issued the revision to 10 CFR 50.36, "Technical Specifications," in July 1995.

In August 1995, the NRC adopted a final policy statement on the use of PRA methods in nuclear regulatory activities that improve safety decision making and regulatory efficiency. The PRA policy statement included the following points:

1. The use of PRA technology should be increased in all regulatory matters to the extent supported by state-of-the-art in PRA methods and data and in a manner that compliments the NRC's deterministic approach and supports the NRC's traditional defense-in-depth philosophy.

2. PRA and associated analyses (e.g., sensitivity studies, uncertainty analyses, and importance measures) should be used in regulatory matters, where practical within the bounds of the state-of-the-art, to reduce unnecessary conservatism associated with current regulatory requirements.

3. PRA evaluations in support of regulatory decisions should be as realistic as practicable and appropriate supporting data should be publicly available for review.

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

6.0 Environmental Evaluation

STPNOC has evaluated the proposed changes and determined that (1) the proposed amendment involves no significant hazards consideration, (2) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite, and (3) there is no significant increase in the individual or cumulative occupational exposure. Accordingly, the proposed changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), and an environmental assessment of the proposed changes is not required.

Attachment 2

Commitments

As part of this submittal, STPNOC makes the following commitments:

The following compensatory measures are already implemented in station procedures or will be established as part of the implementation of the proposed amendment:

Compensatory measures will be used to offset the increased risk of allowing a 14-day AOT and will be implemented when it is recognized that the cumulative risk profile for a planned or unplanned entry into the AOT for ECW, ECH, CCW, RHR, RCFC, CS, SI, EAB HVAC, or CR HVAC is expected to exceed the 1.0E-06 administrative risk threshold. The measures will be implemented through a licensee-controlled document. These measures are:

1. If the cumulative risk profile is expected to exceed the 1.0E-06 threshold for:

   - An ECW train, Operations crews will review and be prepared to implement the ECW cross-tie capability described in station procedures in the event of a plant transient in order to recover functional SDG and ECH trains rendered inoperable due to maintenance.
   - An ECW train, STPNOC will ensure the Work Schedule contains no planned maintenance that would result in the AFW or Steam Generator PORVs being declared non-functional.
   - The ECH, EAB HVAC or CR HVAC systems, STPNOC will ensure the Work Schedule contains no planned maintenance that would result in the Smoke Purge Capability being non-functional.
   - The SI system, STPNOC will ensure the Work Schedule contains no planned maintenance that would result in the Centrifugal Charging pumps, the AFW system, Pressurizer Power Operated Relief Valves (PORVs), or Steam Generator PORVs being non-functional.

2. The Risk Management compensatory actions already described in the station's Configuration Risk Management procedure for Standby Diesel Generators, ECW, ECH, and Auxiliary Feedwater, will be similarly applied to an AOT for CCW, RHR, RCFC, CS, SI, EAB HVAC, or CR HVAC if the cumulative risk profile is expected to exceed the 1.0E-06 threshold. These include:

   - Reduce duration of risk sensitive activities.
   - Remove risk sensitive activities from the planned work scope.
   - Reschedule high-risk significant activities to avoid high-risk significant outages or maintenance states.
   - Accelerate the restoration of out-of-service equipment.

- Determine and establish the safest plant configuration.
- Establish contingency plan to reduce the effects of the degradation of the effected systems, structures, and components (SSCs) by utilizing the following:
  - Operator actions
  - Increased awareness of plant configuration concerns and the effects of certain activities and transients on plant stability
  - Administrative controls
  - Ensure availability of functionally redundant equipment
- Consider augmenting current site resources to assist in restoring equipment to functional status.

3. The Risk Management compensatory actions already described in the station's Extended Allowed Outage Time procedure will be similarly applied to an AOT for CCW, RHR, RCFC, CS, SI, EAB HVAC, or CR HVAC if the cumulative risk profile is expected to exceed the 1.0E-06 threshold. These include:
   - Planned maintenance on required systems, subsystems, trains, components, and devices that depend on the other trains of equipment during the EAOT shall not be performed.
   - If entering an EAOT for a Standby Diesel Generator (SDG), ECW, or ECW-supported systems, then planned maintenance or other planned testing of the TSC DG shall not be allowed throughout the EAOT.
   - If entering an EAOT for a SDG, ECW, or ECW-supported systems, then planned maintenance or other planned testing of the Positive Displacement Charging Pump shall not be allowed throughout the EAOT.
   - Maintenance activities in the switchyard, which could directly cause a LOOP event, shall be prohibited unless required to ensure the continued reliability and availability of the offsite power sources during the EAOT.
   - Ensure the work schedule contains no planned maintenance on required systems, subsystems, trains, components, and devices that depend on or that affect the remaining system trains throughout the EAOT.
   - If entering an EAOT for a Motor Driven Auxiliary Feedwater (MDAFW) pump, then ensure the Work Schedule contains no planned maintenance, which would result in the ECW system and the systems it supports being declared non-functional.
   - Ensure the Work Schedule contains no planned maintenance that would result in an inoperable open containment penetration.

Attachment 3

Annotated Technical Specification Pages

EMERGENCY CORE COOLING SYSTEMS

3/4.5.2 ECCS SUBSYSTEMS - T_{AVG} GREATER THAN OR EQUAL TO 350°F

LIMITING CONDITION FOR OPERATION

3.5.2 Three independent Emergency Core Cooling System (ECCS) subsystems shall be OPERABLE with each subsystem comprised of:

a. One OPERABLE High Head Safety Injection pump,

b. One OPERABLE Low Head Safety Injection pump,

c. One OPERABLE RHR heat exchanger, and

d. An OPERABLE flow path capable of taking suction from the refueling water storage tank on a Safety Injection signal and automatically transferring suction to the containment sump during the recirculation phase of operation through a High Head Safety Injection pump and into the Reactor Coolant System and through a Low Head Safety Injection pump and its respective RHR heat exchanger into the Reactor Coolant System.

APPLICABILITY: MODES 1, 2, and 3. *

ACTION:

a. With less than the above subsystems OPERABLE, but with at least two High Head Safety Injection pumps in an OPERABLE status, two Low Head Safety Injection pumps and associated RHR heat exchangers in an OPERABLE status, and sufficient flow paths to accommodate these OPERABLE Safety Injection pumps and RHR heat exchangers,** restore the inoperable subsystem(s) to OPERABLE status within ~~7~~ 14 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be submitted within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date. The current value of the usage factor for each affected Safety Injection nozzle shall be provided in this Special Report whenever its value exceeds 0.70.

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* Entry into MODE 3 is permitted for the Safety Injection pumps declared inoperable pursuant to Specification 4.5.3.1.2 provided that the Safety Injection pumps are restored to OPERABLE status within 4 hours or prior to the temperature of one or more of the RCS cold legs exceeding 375°F, whichever comes first.

** Verify required pumps, heat exchangers and flow paths OPERABLE every 48 hours.

EMERGENCY CORE COOLING SYSTEMS

3/4.5.6 RESIDUAL HEAT REMOVAL (RHR) SYSTEM

LIMITING CONDITION FOR OPERATION

3.5.6 Three independent Residual Heat Removal (RHR) loops shall be OPERABLE with each loop comprised of:

a. One OPERABLE RHR pump,

b. One OPERABLE RHR heat exchanger, and

c. One OPERABLE flowpath capable of taking suction from its associated RCS hot leg and discharging to its associated RCS cold leg.*

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one RHR loop inoperable, restore the required loop to OPERABLE status within ~~7~~ 14 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With two RHR loops inoperable, restore at least two RHR loops to OPERABLE status within 24 hours or be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With three RHR loops inoperable, immediately initiate corrective action to restore at least one RHR loop to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.5.6.1 Each RHR loop shall be demonstrated OPERABLE on a STAGGERED TEST BASIS pursuant to the requirements of Specification 4.0.5.

4.5.6.2 At least once per 18 months by verifying automatic interlock action of the RHR system from the Reactor Coolant System to ensure that:

a. With a simulated or actual Reactor Coolant System pressure signal greater than or equal to 350 psig, the interlocks prevent the valves from being opened.

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*Valves MOV-0060 A, B, and C and MOV-0061 A, B, and C may have power removed to support the FHAR (Fire Hazard Analysis Report) assumptions.

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Three independent Containment Spray Systems shall be OPERABLE with each Spray system capable of taking suction from the RWST and transferring suction to the containment sump.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one Containment Spray System inoperable, restore the inoperable Spray System to OPERABLE status within ~~7~~ 14 days or be in at least HOT STANDBY within the next 6 hours; restore the inoperable Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each Containment Spray System shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position;

b. By verifying on a STAGGERED TEST BASIS, that on recirculation flow, each pump develops a differential pressure of greater than or equal to 283 psid when tested pursuant to Specification 4.0.5;

c. At least once per 18 months during shutdown, by:

1) Verifying that each automatic valve in the flow path actuates to its correct position on a Containment Pressure High 3 test signal, and

2) Verifying that each spray pump starts automatically on a Containment Pressure High 3 test signal coincident with a sequencer start signal.

d. By verifying each spray nozzle is unobstructed following maintenance activities that could result in spray nozzle blockage.

CONTAINMENT SYSTEMS

CONTAINMENT COOLING SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.3 Three independent groups of Reactor Containment Fan Coolers (RCFC) shall be OPERABLE with a minimum of two units in two groups and one unit in the third group.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one group of the above required Reactor Containment Fan Coolers inoperable, restore the inoperable group of RCFC to OPERABLE status within ~~7~~ 14 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.3 Each group of Reactor Containment Fan Coolers shall be demonstrated OPERABLE:

a. At least once per 92 days by:

1) Starting each non-operating fan group from the control room, and verifying that each fan group operates for at least 15 minutes, and

2) Verifying a component cooling water flow rate of greater than or equal to 1800 gpm to each cooler.

b. At least once per 18 months by verifying that each fan group starts automatically on a Safety Injection test signal.

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3 At least three independent component cooling water loops shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With only two component cooling water loops OPERABLE, restore at least three loops to OPERABLE status within ~~7~~ 14 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.3 At least three component cooling water loops shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve outside containment (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position; and

b. At least once per 18 months by verifying that:

1) Each automatic valve servicing safety-related equipment or isolating the non-nuclear safety portion of the system actuates to its correct position on a Safety Injection, Loss of Offsite Power, Containment Phase "B" Isolation, or Low Surge Tank test signal, as applicable (performed during shutdown);

2) Each Component Cooling Water System pump starts automatically on a Safety Injection or Loss of Offsite Power test signal (performed during shutdown); and

3) The surge tank level instrumentation which provides automatic isolation of portions of the system is demonstrated OPERABLE by performance of a CHANNEL CALIBRATION test.

c. By verifying that each valve inside containment (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position prior to entering MODE 4 following each COLD SHUTDOWN of greater than 72 hours if not performed within the previous 31 days.

PLANT SYSTEMS

3/4.7.4 ESSENTIAL COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.4 At least three independent essential cooling water loops shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With only two essential cooling water loops OPERABLE, restore at least three loops to OPERABLE status within ~~7~~ 14 days~~*~~ or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.4 At least three essential cooling water loops shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position;

b. At least once per 18 months during shutdown, by verifying that:

1) Each Essential Cooling Water automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal, and

2) Each Essential Cooling Water pump starts automatically on an actual or simulated signal.

~~* On a one-time basis, the Allowed Outage Time for Unit 1 Train B Essential Cooling Water, and for those Technical Specification systems supported by Train B Essential Cooling Water (Technical Specifications 3.5.2, 3.5.6, 3.6.2.1, 3.6.2.3, 3.7.3, 3.7.7, and 3.7.14) is extended to 14 days. This one-time extension expires January 18, 2005 at 0400 hours.~~

PLANT SYSTEMS

3/4.7.7 CONTROL ROOM MAKEUP AND CLEANUP FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7 Three independent Control Room Makeup and Cleanup Filtration Systems shall be OPERABLE.

APPLICABILITY: All MODES.

ACTION:

MODES 1, 2, 3, and 4:

a. With one Control Room Makeup and Cleanup Filtration System inoperable, restore the inoperable system to OPERABLE status within ~~7~~ 14 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With two Control Room Makeup and Cleanup Filtration Systems inoperable, restore at least two systems to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With three Control Room Makeup and Cleanup Filtration Systems inoperable, suspend all operations involving movement of spent fuel, and crane operation with loads over the spent fuel pool, and restore at least one system to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

MODES 5 and 6:

a. With one Control Room Makeup and Cleanup Filtration System inoperable, restore the inoperable system to OPERABLE status within 7 days or initiate and maintain operation of the remaining OPERABLE Control Room Makeup and Cleanup Filtration Systems in the recirculation and makeup air filtration mode, or suspend all operations involving CORE ALTERATIONS, operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN or required boron concentration, movement of spent fuel, and crane operation with loads over the spent fuel pool.

b. With more than one Control Room Makeup and Cleanup Filtration System inoperable, or with the OPERABLE Control Room Makeup and Cleanup Filtration Systems required to be in the recirculation and makeup air filtration mode by ACTION a. not capable of being powered by an OPERABLE emergency power source, suspend all operations involving CORE ALTERATIONS, operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN or required boron concentration, movement of spent fuel, and crane operations with loads over the spent fuel pool.

SURVEILLANCE REQUIREMENTS

4.7.7 Each Control Room Makeup and Cleanup Filtration System shall be demonstrated OPERABLE:

a. At least once per 12 hours by verifying that the control room air temperature is less than or equal to 78°F;

b. At least once per 92 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers of the makeup and cleanup air filter units and verifying that the system operates for at least 10 continuous hours with the makeup filter unit heaters operating;

PLANT SYSTEMS

3/4.7.14 ESSENTIAL CHILLED WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.14 At least three independent Essential Chilled Water System loops shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With only two Essential Chilled Water System loops OPERABLE, restore three loops to OPERABLE status within ~~7~~ 14 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.14 The Essential Chilled Water System shall be demonstrated OPERABLE by:

a. Performance of surveillances as required by Specification 4.0.5, and

b. At least once per 18 months by demonstrating that the system starts automatically on a Safety Injection test signal.