UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 16, 2009

Mr. Edward D. Halpin
Chief Nuclear Officer
STP Nuclear Operating Company
South Texas Project
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT, UNIT 2 - ISSUANCE OF EXIGENT AMENDMENT RE: ONE-TIME CHANGE TO TECHNICAL SPECIFICATION 3.7.1.7, "MAIN FEEDWATER SYSTEM" (TAC NO. ME0271)

Dear Mr. Halpin:

The Commission has issued the enclosed Amendment No. 176 to Facility Operating License No. NPF-80, for the South Texas Project, Unit 2. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated December 19, 2008, as supplemented by letter dated January 7, 2009.

The amendment extends the allowed outage time (AOT) for TS 3.7.1.7, "Main Feedwater System." This AOT is extended from the current 4 hours to 24 hours to facilitate repairs to the Unit 2 Train D Main Feedwater Isolation Valve, which is degraded due to a leak in its pneumatic actuator.

This amendment is being issued under exigent circumstances in accordance with Section 50.91(a)(6) of Title 10 of the *Code of Federal Regulations*. The exigent circumstances and final no significant hazards considerations are addressed in Sections 4.0 and 5.0 of the enclosed Safety Evaluation.

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

Sincerely,

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-499

Enclosures:
1. Amendment No. 176 to NPF-80
2. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-499

SOUTH TEXAS PROJECT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 176
License No. NPF-80

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by STP Nuclear Operating Company (STPNOC)* acting on behalf of itself and for NRG South Texas LP, the City Public Service Board of San Antonio (CPS), and the City of Austin, Texas (COA) (the licensees), dated December 19, 2008, as supplemented by letter dated January 7, 2009, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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*STPNOC is authorized to act for NRG South Texas LP, the City Public Service Board of San Antonio, and the City of Austin, Texas, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-80 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 176, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. STPNOC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of the date of its issuance and shall be implemented prior to the start of the Unit 2 Train D Main Feedwater Isolation Valve repairs.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Facility Operating License No. NPF-80 and the Technical Specifications

Date of Issuance: January 16, 2009

ATTACHMENT TO LICENSE AMENDMENT NO. 176

FACILITY OPERATING LICENSE NO. NPF-80

DOCKET NO. 50-499

Replace the following pages of the Facility Operating License No. NPF-80, and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Facility Operating License No. NPF-80

REMOVE	INSERT
-4-	-4-

Technical Specifications

REMOVE	INSERT
3/4 7-10a	3/4 7-10a

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 176 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. STPNOC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Not Used

(4) Initial Startup Test Program (Section 14, SR)*

Any changes to the Initial Test Program described in Section 14 of the Final Safety Analysis Report made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

(5) License Transfer

Texas Genco, LP shall provide decommissioning funding assurance, to be held in decommissioning trusts for South Texas Project, Unit 2 (Unit 2) upon the direct transfer of the Unit 2 license to Texas Genco, LP, in an amount equal to or greater than the balance in the Unit 2 decommissioning trust immediately prior to the transfer. In addition, Texas Genco, LP shall ensure that all contractual arrangements referred to in the application for approval of the transfer of the Unit 2 license to Texas Genco, LP to obtain necessary decommissioning funds for Unit 2 through a non-bypassable charge are executed and will be maintained until the decommissioning trusts are fully funded, or shall ensure that other mechanisms that provide equivalent assurance of decommissioning funding in accordance with the Commission's regulations are maintained.

(6) License Transfer

The master decommissioning trust agreement for Unit 2, at the time the direct transfer of Unit 2 to Texas Genco, LP is effected and thereafter, is subject to the following:

* The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

MAIN FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.7 Each main feedwater isolation valve (MFIV) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

MODES 1 and 2: With one MFIV inoperable but open, operation may continue provided the inoperable valve is restored to OPERABLE status within 4 hours; otherwise be in HOT STANDBY within the next 6 hours.

NOTE:
On a one-time basis, with the Unit 2 Train D MFIV inoperable but open, operation may continue provided the inoperable valve is restored to OPERABLE status within 24 hours; otherwise be in HOT STANDBY within the next 6 hours. This note expires 30 days after approval of the license amendment that approved this change.

MODE 3: With one MFIV inoperable, subsequent operation in MODE 3 may proceed provided the isolation valve is maintained closed. Otherwise, be in HOT SHUTDOWN within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.7 Each MFIV shall be demonstrated OPERABLE by verifying full closure within 10 seconds when tested pursuant to Specification 4.0.5. The provisions of specification 4.0.4 are not applicable for entry into MODE 3.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 176 TO

FACILITY OPERATING LICENSE NO. NPF-80

STP NUCLEAR OPERATING COMPANY, ET AL.

SOUTH TEXAS PROJECT, UNIT 2

DOCKET NO. 50-499

1.0 INTRODUCTION

By letter dated December 19, 2008, as supplemented by letter dated January 7, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML083650346 and ML090130093, respectively), STP Nuclear Operating Company (STPNOC, the licensee), submitted a request for a one-time exigent amendment to Technical Specification (TS) 3.7.1.7, "Main Feedwater System." The requested change would authorize a temporary revision to TS 3.7.1.7 to add a note that extend the allowed outage time (AOT) for the South Texas Project (STP), Unit 2 Train D main feedwater isolation valve (MFIV) from the current 4 hours to 24 hours.

The supplemental letter dated January 7, 2009, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on December 31, 2008 (73 FR 80437).

The Action Statement for TS 3.7.1.7 requires that with one MFIV inoperable in MODES 1 and 2 but open, operation may continue provided the inoperable valve is restored to OPERABLE status within 4 hours; otherwise, the Unit must be placed in HOT STANDBY within the next 6 hours.

In its letter dated December 19, 2008, the licensee stated:

> The Unit 2 Train D MFIV is operable but degraded. The degraded condition is a nitrogen leak of the tubing to the valve accumulator that was discovered on November 24, 2008. The leak rate has progressively increased. Temporary repairs have been unsuccessful in stopping the leak so that operator actions are required to maintain the nitrogen accumulator stays pressurized for maintaining valve operability. Although these actions are sufficient at the present time, it is unknown if the leak could degrade to a worse condition such that the operator actions would not be successful for maintaining operability. Therefore, a condition could rapidly develop that would require a plant shutdown.

> The plan is to permanently repair the MFIV by replacing the leaking nitrogen supply line tubing and fittings. The plan is ready for repair of the valve and parts are available. It is expected that the repair activity will make the MFIV inoperable for a period of approximately 8 hours. Repairs can be accomplished with the valve open or shut. Repair of the valve with the valve shut requires a downpower of the plant to a reactor power level of approximately 6 to 8 percent. It is desired to make the repairs with the valve open to prevent a downpower of the Unit. The repair plan is understood and straight-forward. In order to prevent an unnecessary downpower of the Unit and to provide adequate time to address unforeseen circumstances, a one-time change to the Allowed Outage Time for one inoperable MFIV to 24 hours is requested.

The MFIV also serves as a containment isolation valve and would limit the leakage of radioactive materials through lines penetrating reactor coolant boundary so that the site boundary dose guidelines specified in Title 10 of the Code of *Federal Regulations* (10 CFR), Part 100 are not exceeded following a postulated loss-of-coolant accident (LOCA) or other postulated design-basis accident (DBA). Therefore, the U.S. Nuclear Regulatory Commission (NRC) staff has considered the impact of the extension of the MFIV completion time from 4 hours to 24 hours on the containment design basis.

2.0 REGULATORY EVALUATION

2.1 Description and Purpose of the System

In its letter dated December 19, 2008, the licensee stated:

> The feedwater isolation valves are opened by hydraulic oil pressure and closed by nitrogen gas pressure. To close the feedwater isolation valve, two redundant solenoid valves energize to open and dump the oil under the operating piston to the hydraulic fluid reservoir. The nitrogen pressure above the operating piston will move the operating piston down closing the feedwater isolation valve. The feedwater isolation valve will fail open on loss of nitrogen pressure.
>
> A feedwater isolation signal prevents excessive cooldown of the Reactor Coolant System (RCS) following a reactor trip, prevents normal feedwater addition on a safety injection signal, and protects the main steam lines and turbine against water injection due to a high steam generator level. The feedwater isolation signal also prevents the containment over-pressurization following a steam line or feedwater line break inside the containment. A feedwater isolation signal results in closing all four feedwater isolation valves.
>
> The OPERABILITY of the feedwater isolation valves ensures that no more than one steam generator will blow down in the event of a steam line or feedwater line rupture. The operability of the feedwater isolation valves will minimize the positive reactivity effects of the Reactor Coolant System cool down associated with the blowdown, and limit the pressure rise within the containment. The OPERABILITY of the feedwater isolation valves within the closure times of the

Surveillance Requirements are consistent with the assumptions used in the safety analysis.

2.2 Regulatory Background

In 10 CFR 50.36, "Technical specifications," the Commission established its regulatory requirements related to the content of the TSs. Pursuant to 10 CFR 50.36, TSs are required to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls. As stated in 10 CFR 50.36(c)(2)(i), LCOs are "the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications ..." The remedial actions in the TSs are specified in terms of LCO conditions, required actions, and completion times (CTs), or AOTs, to complete the required actions. When an LCO is not being met, the CTs specified in the TSs are the time allowed for completing the specified required actions. The conditions and required actions specified in the TSs must be acceptable remedial actions for the LCO not being met, and the CTs must be a reasonable time for completing the required actions while maintaining the safe operation of the plant.

The applicable regulatory requirements in Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 that apply to systems affected by this one-time TS change are:

- *Criterion 2 - Design bases for protection against natural phenomena.* Structures, systems, and components important to safety shall be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their safety functions.

- *Criterion 4 - Environmental and dynamic effects design bases.* Structures, systems, and components important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents. These structures, systems, and components shall be appropriately protected against dynamic effects, including the effects of missiles, pipe whipping, and discharging fluids, that may result from equipment failures and from events and conditions outside the nuclear power unit.

- *Criterion 44 - Cooling water.* A system to transfer heat from structures, systems, and components important to safety, to an ultimate heat sink shall be provided. The system safety function shall be to transfer the combined heat load of these structures, systems, and components under normal operating and accident conditions.

  Suitable redundancy in components and features, and suitable interconnections, leak detection, and isolation capabilities shall be provided to assure that for

onsite electric power system operation (assuming offsite power is not available) and for offsite electric power system operation (assuming onsite power is not available) the system safety function can be accomplished, assuming a single failure.

- *Criterion 50 - Containment design basis.* The reactor containment structure, including access openings, penetrations, and the containment heat removal system shall be designed so that the containment structure and its internal compartments can accommodate, without exceeding the design leakage rate and with sufficient margin, the calculated pressure and temperature conditions resulting from any loss-of-coolant accident. This margin shall reflect consideration of (1) the effects of potential energy sources which have not been included in the determination of the peak conditions, such as energy in steam generators and as required by § 50.44 energy from metal-water and other chemical reactions that may result from degradation but not total failure of emergency core cooling functioning, (2) the limited experience and experimental data available for defining accident phenomena and containment responses, and (3) the conservatism of the calculational model and input parameters.

- *Criterion 54 - Piping systems penetrating containment.* Piping systems penetrating primary reactor containment shall be provided with leak detection, isolation, and containment capabilities having redundancy, reliability, and performance capabilities which reflect the importance to safety of isolating these piping systems.

- *Criterion 57 - Closed system isolation valves.* Each line that penetrates primary reactor containment and is neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere shall have at least one containment isolation valve which shall be either automatic, or locked closed, or capable of remote manual operation. This valve shall be outside containment and located as close to the containment as practical. A simple check valve may not be used as the automatic isolation valve.

- Standard Technical Specifications (STS) for Westinghouse plants (NUREG-1431) Section 3.7.3, "Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs)" requires the MFIVs to be operable when the unit is in Mode 1, 2, and 3 (except when MFIVs are closed and de-activated, or isolated by a closed manual valve). The LCO allows up to 72 hours to close and isolate an MFIV if an MFIV becomes inoperable.

- Standard Review Plan (SRP), Section 10.4.7, "Condensate and Feedwater System," provides guidance to reviewers for system acceptability.

3.0 TECHNICAL EVALUATION

The NRC staff has evaluated the licensee's request for an extension of the MFIV AOT and the containment isolation. The staff's technical evaluation is provided below.

3.1 Extension of the MFIV Allowed Outage Time

The main feedwater (MFW) system at STP, Unit 2, consists of steam generator (SG) feed pumps that discharge through MFW heaters to a header, which distributes the flow into four lines; one to each SG. Each line contains a flow sensing element, MFW control valve, MFW control bypass valve, MFIV isolation valve bypass valve, and check valve. Each line enters the containment through a separate penetration. No MFW valves are located inside the containment. Upstream of the MFIVs, each MFW line is provided with a cross-connect to the auxiliary feedwater (AFW) piping.

All piping within the containment and outside the containment up to the isolation valve cubicle wall, including the first isolation valve outside the containment, is designated as safety class 2 and is designed to the requirements of seismic Category I. Two valves are provided in each MFW line entering the containment. The one closest to the penetration is a swing check valve, while the upstream MFIV is opened by hydraulic oil pressure and closed by nitrogen gas pressure.

As stated above, to close the MFIV, two redundant solenoid valves energize to open and dump the hydraulic oil under the operating piston, and nitrogen gas pressure above the piston moves the piston down to close the valve. This arrangement satisfies the requirements for isolation for postulated accident conditions as described in Chapter 15 of the STP Updated Final Safety Analysis Report (UFSAR). With the loss of flow in the normal direction, the check valve closes to prevent reverse outflow from the containment until the MFIV closes. The MFIV is designed to close in 10 seconds or less from the start of the closure.

The MFIVs are a set of the safety-related components described in Section 10.1, Steam and Power Conversion System, of the STP UFSAR. Two significant DBAs relevant to the MFIVs are: 1) the continuous addition of excessive feedwater and 2) steam line break (SLB) or feedwater line break (FWLB). For both of these DBAs, the primary safety function of the MFIVs is to close so that MFW flow to the secondary side of the SGs is isolated.

Section 15.1.2 "Feedwater System Malfunctions Causing an Increase in Feedwater Flow," of the STP UFSAR states that the adverse effects of a continuous addition of excessive feedwater are prevented by initiation of the SG high-high water level signal. The MFW flow resulting from a fully open control valve is terminated when an SG high-high water level signal initiates MFW isolation, which closes all MFIVs and MFW control valves, trips the MFW pumps, and trips the turbine. The UFSAR states that, "no single active failure will adversely affect the consequences of the DBAs." The limiting single failure assumed in the analysis is defined as the malfunction of one train of the reactor protection system (RPS), which fails one train of the signal logic. In the analysis, the transient is terminated by the operable RPS train, which provides the turbine trip signal and MFW isolation signal when the high-high water level is detected in the SG.

The second DBA involving the MFIV is either a major SLB or FWLB. The SLB analysis is bounding. The licensee addresses a SLB in Section 15.1.5 " Spectrum of Steam System Piping Failures Inside and Outside Containment," of the STP UFSAR. The major rupture of a steam line is the most limiting cooldown transient and is analyzed at zero power with no decay heat. The steam released from a rupture of a main steam line increases the energy removed from the RCS, causing a reduction of reactor coolant temperature and pressure. Redundant isolation of the MFW lines is provided because a sustained high MFW flow would cause additional RCS cooldown. In the presence of a negative moderator temperature coefficient, the cooldown results in an insertion of positive reactivity. If the most reactive control rod is assumed stuck in its fully withdrawn position after a reactor trip, there is an increased possibility that the core will become critical and return to power. Therefore, in addition to the normal control action that closes the MFW control valves following a reactor trip, a safety injection (SI) signal will rapidly close all MFW control valves and isolation valves, as well as trip the MFW pumps. The licensee states in the UFSAR that, "no single active failure will adversely affect the consequences of the accident." The reactor core is ultimately shut down by the boric acid delivered by the SI system. The two operating SI trains are capable of mitigating the event and are actuated on low steam line pressure. The limiting single failure assumed in the analysis is failure of one SI train. In addition, the MFW isolation prevents the containment over-pressurization following an SLB or FWLB inside the containment.

As described above, one of the primary safety functions of the MFIVs is to isolate MFW flow to the secondary side of the SGs. The operability of the MFIV ensures that no more than one SG will blow down in the event of an SLB or FWLB. In the event the MFIV fails to isolate flow, the main feedwater regulating valves (MFRVs) provide a redundant, backup, isolation of MFW flow. Closure of the MFIVs or the MFRVs terminates flow to the SGs, limiting the mass and energy released from an SLB or FWLB inside the containment and limiting the positive reactivity effects from the associated cooldown of the RCS. Closure of the MFIVs or MFRVs also terminates an excess feedwater event upon the receipt of a high-high SG water level signal in order to remain within the design basis for an SLB.

STP TS 3.7.1.7, and its associated LCO, ensures that the MFIVs are operable to perform their safety function to isolate MFW flow to the SGs. In accordance with the current STP TS, with one MFIV in one or more flow paths inoperable, the licensee is required to take action to restore the affected valves to operable status, or to close or isolate inoperable affected valves within 4 hours. When these valves are closed or isolated, their required safety function is achieved. The licensee proposes a one-time exigent TS change to extend the current LCO AOT from 4 hours to 24 hours in order to facilitate repair to the Unit 2 Train D MFIV nitrogen supply line. During this time, the safety function of the MFIV to close and isolate MFW within 10 seconds will be inhibited. During the time the MFIV is inoperable, the safety function to isolate MFW will be performed by the flow control valve, or main feed regulatory valve (MFRV), and the tripping of the MFW pumps. The licensee states that even though the MFRVs are not safety-grade, they are designed as highly reliable backup valves to the MFIVs. In NUREG-0138, "Staff Discussion of Fifteen Technical Issues Listed in Attachment to November 3, 1976, Memorandum from Director, NRR to NRR Staff," November 1976, the NRC has allowed the use of the non-safety-related components in the steam and feedwater systems to be credited with providing a reliable backup to the safety-related MFIVs in the event of an SLB, because their design and performance are compatible with the accident conditions under which they are called upon to function.

In addition, the STS for Westinghouse plants (NUREG-1431) recommends a CT of up to 72 hours to restore one or more affected MFIVs to operable status or to close or isolate the inoperable affected valves. The 72-hour CT takes into account the redundancy afforded by the remaining operable valves (e.g., MFRVs) and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths.

Based on the above discussion, the NRC staff finds that the extension of the MFIV AOT from 4 hours to 24 hours will continue to meet the current design basis of the MFW system and, therefore, is acceptable.

3.2 Containment Isolation

As noted above, the feedwater system at STP, Unit 2, consists of SG feed pumps that discharge through feedwater heaters to a header which distributes the flow into four lines, one to each SG. Each line contains a flow sensing element, MFW control valve, bypass feedwater control valve, MFIV, isolation valve bypass valve, and check valve. Each line enters the containment through a separate penetration. No feedwater valves are located inside the containment. Upstream of the MFIVs, each feedwater line is provided with a cross-connect to the AFW piping.

As stated above, the licensee states that all piping within the containment and outside the containment up to the isolation valve cubicle wall, including the first isolation valve outside the containment, is designated as safety class 2 and is designed to the requirements of seismic Category I. Two valves are provided in each feedwater line entering the containment. The one closest to the penetration is a swing check valve, while the upstream stop valve is opened by hydraulic oil pressure, and closed by nitrogen gas pressure. To close the valve, two redundant solenoid valves energize to open and dump the hydraulic oil under the operating piston, and nitrogen gas pressure above the piston will move the piston down to close the valve. This arrangement satisfies the requirements for isolation for postulated accident conditions as described in Chapter 15 of the STP UFSAR. With loss of flow in the normal direction, the check valve closes to prevent reverse outflow from the containment until the MFIV closes. The MFIV is designed to close in 10 seconds or less.

A feedwater isolation signal prevents excessive cooldown of the RCS following a reactor trip, prevents normal feedwater addition on a Safety Injection signal, and protects the main steam lines and turbine against water injection due to high steam generator level. The feedwater isolation signal also prevents containment over-pressurization following an SLB or FWLB inside the containment. A feedwater isolation signal results in closing all four feedwater isolation valves.

The feedwater isolation valve also serves as a containment isolation valve to limit the leakage of radioactive materials through lines penetrating the reactor pressure boundary so that the site boundary dose guidelines specified in 10 CFR Part 100 are not exceeded following a LOCA or other DBA.

The containment design accident analyses in UFSAR Section 6.2 assume main feedwater isolation function in 13 seconds (the valve closure time is 10 seconds) for a main steam line

break in the containment. This limits the feedwater inventory in the faulted SG so that the peak containment post-accident conditions do not exceed the design basis values.

In its January 7, 2009, letter, in response to an NRC staff request for additional information (RAI), the licensee stated that "the accident analysis, discussed in UFSAR Section 6.2, credits feedwater isolation within 13 seconds of feedwater isolation signal initiation to limit the maximum containment pressure for a main steamline break in containment. The feedwater control valves receive a feedwater isolation signal and are designed to close in sufficient time to meet the 13 seconds assumed in the accident analysis. The closure time of the feedwater control valves are verified every refueling cycle by plant surveillance procedures. Therefore, the feedwater control valves function as a backup feature to limit the maximum containment pressure for a main steamline break in containment."

The licensee states that the feedwater control valves (MFRVs) are not full safety grade. The licensee indicates the MFRVs are designed as highly reliable backups to the MFIVs, and cites NUREG-0138 for this to be acceptable. As stated earlier, the MFRVs are routinely tested to verify their closing times. NUREG-0138 concludes that it is acceptable to rely on the non-safety grade components in the feedwater as a backup to a single failure in safety grade components.

The STP UFSAR Section 15.1 states that a major steam line rupture is classified as an American Nuclear Society (ANS) Condition IV event (UFSAR Section 15.0.1). Condition IV occurrences are faults which are not expected to take place, but are postulated because their consequences would include the potential for the release of significant amounts of radioactive material. Condition IV faults are not to cause a fission product release to the environment resulting in an undue risk to public health and safety in excess of guideline values of 10 CFR Part 100. A single Condition IV fault is not to cause a consequential loss of required functions of systems needed to cope with the fault, including those of the emergency core cooling systems and the containment. The postulated accidents involving release of steam from the secondary system have been analyzed in UFSAR Section 15.1.5. The results show that such accidents do not result in a release of radioactivity unless there is leakage from the RCS to the secondary system in the SGs. A feedwater or main steam line rupture event is independent from leakage of the RCS to the secondary system. A conservative analysis of the potential offsite doses resulting from an SLB outside containment upstream of the main steam isolation valve is presented using the TS limit secondary coolant concentrations. Parameters used in the analysis are listed in UFSAR Table 15.1-2. A scenario considering fuel clad damage was not considered since the fuel does not experience departure from nucleate boiling.

In its response to an NRC staff RAI, the licensee states that "The feedwater isolation valves are containment isolation valves that meet General Design Criterion (GDC) 57 of Appendix A to 10 CFR 50. The feedwater isolation valves are in piping that is neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere. The proposed one-time 24-hour action completion time is reasonable, based on operating experience and the low probability of an event occurring during this time period that would require isolation of the main feedwater flow paths to the steam generators." Based on the above, NRC staff concludes that the proposed one-time AOT extension from 4 hours to 24-hour is reasonable.

Additionally, NUREG-1431, Section 3.6.3, recommends a CT of up to 72 hours to restore an inoperable containment isolation valve, on penetrations with a single isolation valve and a closed system in containment, to operable status, or to close or isolate inoperable affected valves. The 72-hour CT takes into account the redundancy afforded by the remaining operable valves (MFRVs) and the low probability of an event occurring during this time period that would require isolation of the main feedwater flow paths. The 72-hour CT has been deemed reasonable, based on operating experience.

Based upon the above, the NRC staff concludes that there is adequate assurance that the regulatory criteria and plant licensing basis will continue to be satisfied during the implementation of the proposed one-time repair of the nitrogen leak in the tube supplying nitrogen to the accumulators in the Unit 2 Train D MFIV. Therefore, the staff finds the proposed one-time TS change to be acceptable.

4.0 EXIGENT CIRCUMSTANCES

In accordance with 10 CFR 50.91(a)(6)(vi), the licensee provided the following explanation in its application dated December 19, 2008, regarding the exigency and why it could not be avoided, and why the licensee has used its best efforts to make a timely application for the amendment.

> The Action Statement for Technical Specification 3.7.1.7 requires that with one MFIV inoperable in MODES 1 and 2 but open, operation may continue provided the inoperable valve is restored to OPERABLE status within 4 hours; otherwise the Unit must be placed in HOT STANDBY within the next 6 hours. There is no action required for an inoperable MFIV that is closed.
>
> The Unit 2 Train D MFIV is operable but degraded. The degraded condition is a nitrogen leak of the tubing [supplying nitrogen] to the valve accumulator. Temporary repairs have been unsuccessful in stopping the leak so that operator actions are required to maintain the nitrogen accumulator pressurized for assuring valve operability. Although these actions are sufficient at the present time, it is unknown if the leak could degrade to a worse condition such that the operator actions would not be successful for maintaining operability.
>
> A plan is ready to repair the valve and parts are available. It is expected that the repair activity will make the MFIV inoperable for a period of approximately 8 hours. Repairs can be accomplished with the valve open or shut. Repair of the valve with the valve shut requires that the plant downpower to a reactor power level of approximately 6 to 8 percent. It is desired to make the repairs with the valve open to prevent downpower of the Unit. The repair plan is understood and straight-forward. In order to prevent an unnecessary downpower of the Unit and to provide adequate time to address unforeseen circumstances, a one-time change to the Allowed Outage Time for one inoperable MFIV to 24 hours is requested.
>
> Exigent approval of the proposed TS change is justified because the unsuccessful temporary repair to stop the leak could not reasonably have been foreseen or anticipated. Therefore, STPNOC requests approval of this license

amendment application at the earliest possible date because the conditions of the leak could rapidly degrade to the point where a Unit shutdown would be required.

The NRC staff concluded that the above justification is acceptable and meets the intent of 10 CFR 50.91(a)(6)(vi) for processing an exigent license amendment.

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION (NSHCD)

The Commission may issue the license amendment before the expiration of the 60-day period provided that its final determination is that the amendment involves no significant hazards consideration. This amendment is being issued prior to the expiration of the 60-day period. Therefore, a final finding of no significant hazards consideration follows.

The Commission has made a final determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed amendment does not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration which is presented below.

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

   Response:

   No. The proposed change extends the action completion time for Unit 2 Train D MFIV from 4 hours to 24 hours. Extending the completion time is not an accident initiator and thus does not change the probability that an accident will occur. However, it could potentially affect the consequences of an accident if an accident occurred during the extended unavailability of the [MFIV, which is inoperable]. The increase in time, that the MFIV is unavailable, is small and the probability of an event occurring during this time period, which would require isolation of the main feedwater flow paths, is low.

   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 from any accident previously evaluated?

   Response:

   No. The proposed change does not involve any physical alteration of plant equipment and does not change the method by which any safety-

related structure, system, or component performs its function or is tested. Closure of the MFIVs is required to mitigate the consequences of the Main Steam Line Break and Main Feedwater Line Break accidents.

Therefore, the proposed change will 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. The proposed change [ ] does not adversely affect existing plant safety margins or the reliability of the equipment assumed to operate in the safety analysis. There are no changes being made to safety analysis assumptions, safety limits or safety system settings that would adversely affect plant safety [margins] as a result of the proposed change.

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

The NRC staff has reviewed the licensee's analysis and, based on this review and the safety evaluation, determined that the three standards of 10 CFR 50.92 are satisfied. Therefore, the NRC staff has determined that the amendment involves no significant hazards consideration.

6.0 STATE CONSULTATION

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

7.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on December 31, 2008 (73 FR 80437). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

8.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) the amendment does not (a) involve a significant increase in the probability or consequences of an

accident previously evaluated, (b) create the possibility of a new or different kind of accident from any accident previously evaluated, or (c) involve a significant reduction in a margin of safety and, therefore, the amendment does not involve a significant hazards considerations; (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; (3) such activities will be conducted in compliance with the Commission's regulations; and (4) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: S. Gardocki
B. Heida

Date: January 16, 2009

January 16, 2009

Mr. Edward D. Halpin
Chief Nuclear Officer
STP Nuclear Operating Company
South Texas Project
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT, UNIT 2 - ISSUANCE OF EXIGENT AMENDMENT RE: ONE-TIME CHANGE TO TECHNICAL SPECIFICATION 3.7.1.7, "MAIN FEEDWATER SYSTEM" (TAC NO. ME0271)

Dear Mr. Halpin:

The Commission has issued the enclosed Amendment No. 176 to Facility Operating License No. NPF-80, for the South Texas Project, Unit 2. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated December 19, 2008, as supplemented by letter dated January 7, 2009.

The amendment extends the allowed outage time (AOT) for TS 3.7.1.7, "Main Feedwater System." This AOT is extended from the current 4 hours to 24 hours to facilitate repairs to the Unit 2 Train D Main Feedwater Isolation Valve, which is degraded due to a leak in its pneumatic actuator.

This amendment is being issued under exigent circumstances in accordance with Section 50.91(a)(6) of Title 10 of the *Code of Federal Regulations*. The exigent circumstances and final no significant hazards considerations are addressed in Sections 4.0 and 5.0 of the enclosed Safety Evaluation.

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

Sincerely,

/RA/

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-499
Enclosures:
1. Amendment No. 176 to NPF-80
2. Safety Evaluation
cc w/encls: Distribution via Listserv

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ADAMS Accession No. ML090070692 *SE input memos **See previous concurrence

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA		DSS/SCVB/BC	DSS/SBPB/BC	OGC – NLO	NRR/LPL4/BC	NRR/LPL4/PM
NAME	MThadani**	JBurkhardt**		RDennig *	DHarrison *	SUttal**	MMarkley	MThadani
DATE	1/9/09	1/9/09		1/7/09	1/6/09	1/13/09	1/16/09	1/16/09

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