September 13, 1999

Mr. William T. Cottle
President and Chief Executive Officer
STP Nuclear Operating Company
South Texas Project Electric
Generating Station
P. O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: REMOVAL OF TOTAL ALLOWANCE, SENSOR ERROR, AND Z TERMS FROM THE TRIP SETPOINTS TABLES (TAC NOS. MA5691 AND MA5692)

Dear Mr. Cottle:

The Commission has issued the enclosed Amendment No. 116 to Facility Operating License No. NPF-76 and Amendment No. 104 to Facility Operating License No. NPF-80 for the South Texas Project, Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated June 7, 1999.

The amendments revise TS 2.2.1, "Reactor Trip System (RTS) Instrumentation Setpoints," and TS 3.3.2, "Engineered Safety Features Actuation System (ESFAS) Instrumentation," and the associated Bases, by removing the Total Allowance, Sensor Error, and Z terms (Z is the statistical summation of errors excluding sensor and rack drift) from the RTS and ESFAS Instrumentation Trip Setpoints Tables. This replaces the five-column methodology with a two-column methodology that consists of the trip setpoint and allowable value columns.

A copy of our related Safety Evaluation is enclosed. The Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,
ORIGINAL SIGNED BY
Thomas W. Alexion, Project Manager, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosures:
1. Amendment No. 116 to NPF-76
2. Amendment No. 104 to NPF-80
3. Safety Evaluation

cc w/encls: See next page

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

STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-498

SOUTH TEXAS PROJECT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 116
License No. NPF-76

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

   A. The application for amendment by STP Nuclear Operating Company* acting on behalf of itself and for Houston Lighting & Power Company (HL&P), the City Public Service Board of San Antonio (CPS), Central Power and Light Company (CPL), and City of Austin, Texas (COA) (the licensees), dated June 7, 1999, 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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*STP Nuclear Operating Company is authorized to act for Houston Lighting & Power Company (HL&P), the City Public Service Board of San Antonio, Central Power and Light Company and 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-76 is hereby amended to read as follows:

   2. Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 116 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A Gramm

Robert A. Gramm, Chief, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 13, 1999

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. 104
License No. NPF-80

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

   A. The application for amendment by STP Nuclear Operating Company* acting on behalf of itself and for Houston Lighting & Power Company (HL&P), the City Public Service Board of San Antonio (CPS), Central Power and Light Company (CPL), and City of Austin, Texas (COA) (the licensees), dated June 7, 1999, 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.

*STP Nuclear Operating Company is authorized to act for Houston Lighting & Power Company (HL&P), the City Public Service Board of San Antonio, Central Power and Light Company and 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. 104 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A Gramm

Robert A. Gramm, Chief, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 13, 1999

ATTACHMENT TO LICENSE AMENDMENT NOS. 116 AND 104

FACILITY OPERATING LICENSE NOS. NPF-76 AND NPF-80

DOCKET NOS. 50-498 AND 50-499

Replace the following pages of the 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.

REMOVE	INSERT
2-3	2-3
2-4	2-4
2-5	2-5
2-6	2-6
B 2-3	B 2-3
B 2-4	B 2-4*
3/4 3-15	3/4 3-15*
3/4 3-16	3/4 3-16
3/4 3-29	3/4 3-29
3/4 3-30	3/4 3-30
3/4 3-31	3/4 3-31
3/4 3-32	3/4 3-32
3/4 3-33	3/4 3-33
3/4 3-34	3/4 3-34
3/4 3-35	3/4 3-35
3/4 3-36	3/4 3-36
B 3/4 3-1	B 3/4 3-1
B 3/4 3-2	B 3/4 3-2

*Overleaf pages provided to maintain document completeness. No changes on these pages.

2.2 LIMITING SAFETY SYSTEM SETTINGS

REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS

2.2.1 The Reactor Trip System Instrumentation and Interlock Setpoints shall be set consistent with the Trip Setpoint values shown in Table 2.2-1.

APPLICABILITY: As shown for each channel in Table 3.3-1.

ACTION:

a. With a Reactor Trip System Instrumentation or Interlock Setpoint less conservative than the value shown in the Trip Setpoint column but more conservative than the value shown in the Allowable Value column of Table 2.2-1, adjust the Setpoint consistent with the Trip Setpoint value.

b. With the Reactor Trip System Instrumentation or Interlock Setpoint less conservative than the value shown in the Allowable Value column of Table 2.2-1, declare the channel inoperable and apply the applicable ACTION statement requirement of Specification 3.3.1 until the channel is restored to OPERABLE status with its Setpoint adjusted consistent with the Trip Setpoint value.

TABLE 2.2-1

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

	FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUE
1.	Manual Reactor Trip	N.A.	N.A.
2.	Power Range, Neutron Flux		
	a. High Setpoint	≤109% of RTP**	≤110.7% of RTP**
	b. Low Setpoint	≤25% of RTP**	≤27.7% of RTP**
3.	Power Range, Neutron Flux, High Positive Rate	≤5% of RTP** with a time constant ≥2 seconds	≤6.7% of RTP** with a time constant ≥2 seconds
4.	Deleted		
5.	Intermediate Range, Neutron Flux	≤25% of RTP**	≤31.1% of RTP**
6.	Source Range, Neutron Flux	$\leq 10^5$ CPS	$\leq 1.4 \times 10^5$ cps
7.	Overtemperature ΔT	See Note 1	See Note 2
8.	Overpower ΔT	See Note 3	See Note 4
9.	Pressurizer Pressure-Low	≥1870 psig	≥1860 psig
10.	Pressurizer Pressure-High	≤2380 psig	≤2390 psig
11.	Pressurizer Water Level-High	≤92% of instrument span	≤94.1% of instrument span
12.	Reactor Coolant Flow-Low	≥91.8% of loop design flow*	≥91.4% of loop design flow*

* Loop design flow = As specified in the Core Operating Limits Report
** RTP = RATED THERMAL POWER

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

	FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUE
13.	Steam Generator Water Level Low-Low	≥33% of narrow range instrument span	≥30.7% of narrow range instrument span
14.	Undervoltage - Reactor Coolant Pumps	≥10,014 volts	≥9339 volts
15.	Underfrequency - Reactor Coolant Pumps	≥57.2 Hz	≥57.1 Hz
16.	Turbine Trip		
	a. Low Emergency Trip Fluid Pressure	≥1245.8 psig	≥1114.5 psig
	b. Turbine Stop Valve Closure	<Fully closed	Fully closed
17.	Safety Injection Input from ESFAS	N.A.	N.A.

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUE
18. Reactor Trip System Interlocks		
a. Intermediate Range Neutron Flux, P-6	$\geq 1 \times 10^{-10}$ amp	$\geq 6 \times 10^{-11}$ amp
b. Low Power Reactor Trips Block, P-7		
1) P-10 input	≤10% of RTP**	≤11.7% of RTP**
2) P-13 input	≤10% RTP** Turbine Impulse Pressure Equivalent	≤11.7% RTP** Turbine Impulse Pressure Equivalent
c. Power Range Neutron Flux, P-8	≤40% of RTP**	≤41.7% of RTP**
d. Power Range Neutron Flux, P-9	≤50% of RTP**	≤51.7% of RTP**
e. Power Range Neutron Flux, P-10	≥10% of RTP**	≥8.3% of RTP**
f. Turbine Impulse Chamber Pressure, P-13	≤10% RTP** Turbine Impulse Pressure Equivalent	≤11.7% RTP** Turbine Impulse Pressure Equivalent
19. Reactor Trip Breakers	N.A.	N.A.
20. Automatic Trip and Interlock Logic	N.A.	N.A.

**RTP = RATED THERMAL POWER

2.2.1 REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS

The Reactor Trip Setpoint Limits specified in Table 2.2-1 are the nominal values at which the Reactor trips are set for each functional unit. The Trip Setpoints have been selected to ensure that the core and Reactor Coolant System are prevented from exceeding their safety limits during normal operation and design basis anticipated operational occurrences and to assist the Engineered Safety Features Actuation System in mitigating the consequences of accidents. The Setpoint for a Reactor Trip System or interlock function is considered to be adjusted consistent with the nominal value when the "as-measured" Setpoint is within the band allowed for calibration accuracy.

To accommodate the instrument drift assumed to occur between operational tests and the accuracy to which Setpoints can be measured and calibrated, Allowable Values for the Reactor Trip Setpoints have been specified in Table 2.2-1. Operation with Setpoints less conservative than the Trip Setpoint but within the Allowable Value is acceptable since an allowance has been made in the safety analysis to accommodate this error.

The methodology to derive the Trip Setpoints is based upon combining all of the uncertainties in the channels. Inherent to the determination of the Trip Setpoints are the magnitudes of these channel uncertainties. Sensors and other instrumentation utilized in these channels are expected to be capable of operating within the allowances of these uncertainty magnitudes. Rack drift in excess of the Allowable Value exhibits the behavior that the rack has not met its allowance. Because there is a small statistical chance that this will happen, an infrequent excessive drift is expected. Rack or sensor drift, in excess of the allowance that is more than occasional, may be indicative of more serious problems and should warrant further investigation.

REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS (Continued)

The various Reactor trip circuits automatically open the Reactor trip breakers whenever a condition monitored by the Reactor Trip System reaches a preset or calculated level. In addition to redundant channels and trains, the design approach provides a Reactor Trip System which monitors numerous system variables, therefore providing Trip System functional diversity. The functional capability at the specified trip setting is required for those anticipatory or diverse Reactor trips for which no direct credit was assumed in the safety analysis to enhance the overall reliability of the Reactor Trip System. The Reactor Trip System initiates a Turbine trip signal whenever Reactor trip is initiated. This prevents the reactivity insertion that would otherwise result from excessive Reactor Coolant System cooldown and thus avoids unnecessary actuation of the Engineered Safety Features Actuation System.

Manual Reactor Trip

The Reactor Trip System includes manual Reactor trip capability.

Power Range, Neutron Flux

In each of the Power Range Neutron Flux channels there are two independent bistables, each with its own trip setting used for a High and Low Range trip setting. The Low Setpoint trip provides protection during subcritical and low power operations to mitigate the consequences of a power excursion beginning from low power, and the High Setpoint trip provides protection during power operations to mitigate the consequences of a reactivity excursion from all power levels.

The Low Setpoint trip may be manually blocked above P-10 (a power level of approximately 10% of RATED THERMAL POWER) and is automatically reinstated below the P-10 Setpoint.

Power Range, Neutron Flux, High Rates

The Power Range Positive Rate trip provides protection against rapid flux increases which are characteristic of a rupture of a control rod drive housing. Specifically, this trip complements the Power Range Neutron Flux High and Low trips to ensure that the criteria are met for rod ejection from mid-power.

TABLE 4.3-1 (Continued)

TABLE NOTATIONS (Continued)

(10) Setpoint verification is not applicable.

(11) The TRIP ACTUATING DEVICE OPERATIONAL TEST shall independently verify the OPERABILITY of the undervoltage and shunt trip attachments of the Reactor Trip Breakers.

(12) OPERABILITY shall be verified by a check of memory devices, input accuracies, Boron Dilution Alarm setpoints, output values, and software functions.

(13) (Not used)

(14) The TRIP ACTUATING DEVICE OPERATIONAL TEST shall independently verify the OPERABILITY of the undervoltage and shunt trip circuits for the Manual Reactor Trip Function. The test shall also verify the OPERABILITY of the Bypass Breaker trip circuit(s).

(15) Local manual shunt trip prior to placing breaker in service.

(16) Automatic undervoltage trip.

(17) Each channel shall be tested at least every 92 days on a STAGGERED TEST BASIS.

(18) The surveillance frequency and/or MODES specified for these channels in Table 4.3-2 are more restrictive and, therefore, applicable.

3/4.3.2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 The Engineered Safety Features Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their Trip Setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4 and with RESPONSE TIMES as shown in Chapter 16 in the UFSAR.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

a. With an ESFAS Instrumentation or Interlock Trip Setpoint trip less conservative than the value shown in the Trip Setpoint column but more conservative than the value shown in the Allowable Value column of Table 3.3-4, adjust the Setpoint consistent with the Trip Setpoint value.

b. With an ESFAS Instrumentation or Interlock Trip Setpoint less conservative than the value shown in the Allowable Value column of Table 3.3-4, declare the channel inoperable and apply the applicable ACTION statement requirements of Table 3.3-3 until the channel is restored to OPERABLE status with its Setpoint adjusted consistent with the Trip Setpoint value.

c. With an ESFAS instrumentation channel or interlock inoperable, take the ACTION shown in Table 3.3-3.

TABLE 3.3-4

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUE
1. Safety Injection (Reactor Trip, Feedwater Isolation, Control Room Emergency Ventilation, Start Standby Diesel Generators, Reactor Containment Fan Coolers, and Essential Cooling Water)		
a. Manual Initiation	N.A.	N.A.
b. Automatic Actuation Logic	N.A.	N.A.
c. Actuation Relays	N.A.	N.A.
d. Containment Pressure--High 1	≤ 3.0 psig	≤ 4.0 psig
e. Pressurizer Pressure--Low	≥ 1857 psig	≥ 1851 psig
f. Compensated Steam Line Pressure-Low	≥ 735 psig	≥ 709 psig*
2. Containment Spray		
a. Manual Initiation	N.A.	N.A.
b. Automatic Actuation Logic	N.A.	N.A.
c. Actuation Relays	N.A.	N.A.
d. Containment Pressure--High-3	≤ 9.5 psig	≤ 10.5 psig

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUE
3. Containment Isolation		
a. Phase "A" Isolation		
1) Manual Initiation	N.A.	N.A.
2) Automatic Actuation Logic	N.A.	N.A.
3) Actuation Relays	N.A.	N.A.
4) Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.	
b. Containment Ventilation Isolation		
1) Automatic Actuation Logic	N.A.	N.A.
2) Actuation Relays	N.A.	N.A.
3) Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.	
4) RCB Purge Radioactivity-High	$\leq 5 \times 10^{-4}$ ### μCi/cc	$\leq 6.4 \times 10^{-4}$ μCi/cc
5) Containment Spray - Manual Initiation	See Item 2. above for Containment Spray manual initiation Trip Setpoints and Allowable Values.	
6) Phase "A" Isolation - Manual Initiation	See Item 3.a. above for Phase "A" Isolation manual initiation Trip Setpoints and Allowable Values.	
c. Phase "B" Isolation		
1) Automatic Actuation Logic	N.A.	N.A.
2) Actuation Relays	N.A.	N.A.
3) Containment Pressure--High-3	$\leq$ 9.5 psig	$\leq$ 10.5 psig
4) Containment Spray-Manual Initiation	See Item 2. above for Containment Spray manual initiation Trip Setpoints and Allowable Values.	

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOUNT	ALLOWABLE VALUE
d. RCP Seal Injection Isolation		
1) Automatic Actuation Logic and Activation Relays	N.A.	N.A.
2) Charging Header Pressure – Low	≥ 560.0 psig	≥ 495.4 psig
Coincident with Phase "A" Isolation	See Item 3.a. above for Phase "A" Isolation Setpoints and Allowable Values	
4. Steam Line Isolation		
a. Manual Initiation	N.A.	N.A.
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
c. Steam Line Pressure - Negative Rate--High	≤ 100 psi	≤ 126 psi**
d. Containment Pressure - High-2	≤ 3.0 psig	≤ 4.0 psig
e. Compensated Steam Line Pressure - Low	≥ 735 psig	≥ 709 psig*
5. Turbine Trip and Feedwater Isolation		
a. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
b. Steam Generator Water Level--High-High (P-14)	≤ 87.5% of narrow range instrument span.	≤ 89.8% of narrow range instrument span.
c. Deleted		

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUE
5. Turbine Trip and Feedwater Isolation (Continued)		
d. Deleted		
e. Safety Injection	See Item 1 above for all Safety Injection Trip Setpoints and Allowable Values.	
f. T_{avg}-Low Coincident with Reactor Trip (P-4) (Feedwater Isolation Only)	≥ 574°F	≥ 571.7°F
6. Auxiliary Feedwater		
a. Manual Initiation	N.A	N.A.
b. Automatic Actuation Logic	N.A	N.A.
c. Actuation Relays	N.A.	N.A
d. Steam Generator Water Level--Low-Low	≥ 33.0% of narrow range instrument span.	≥ 30.7% of narrow range instrument span.
e. Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.	

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUE
6. Auxiliary Feedwater (Continued)		
f. Loss of Power (Motor Driven Pumps Only)	See Item 8. below for all Loss of Power Trip Setpoints and Allowable Values.	
7. Automatic Switchover to Containment Sump		
a. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
b. RWST Level--Low-Low Coincident With:	≥ 11%	≥ 9.1%
Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.	
8. Loss of Power		
a. 4.16 kV ESF Bus Undervoltage (Loss of Voltage)	≥ 3107 volts with a ≤ 1.75 second time delay.	≥ 2979 volts with a ≤ 1.93 second time delay.
b. 4.16 kV ESF Bus Undervoltage (Tolerable Degraded Voltage Coincident with SI)	≥ 3835 volts with a ≤ 35 second time delay.	≥ 3786 volts with a ≤ 39 second time delay.
c. 4.16 kV ESF Bus Undervoltage (Sustained Degraded Voltage)	≥ 3835 volts with a ≤ 50 second time delay.	≥ 3786 volts with a ≤ 55 second time delay.

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUE
9. Engineered Safety Features Actuation System Interlocks		
a. Pressurizer Pressure, P-11	≤1985 psig	≤ 1995 psig
b. Low-Low T_{avg}, P-12	≥ 563°F	≥ 560.7°F
c. Reactor Trip, P-4	N.A	N.A
10. Control Room Ventilation		
a. Manual Initiation	N.A.	N.A.
b. Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.	
c. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
d. Control Room Intake Air Radioactivity - High	$\leq 6.1 \times 10^{-5}$ μCi/cc	$\leq 7.8 \times 10^{-5}$ μCi/cc
e. Loss of Power	See Item 8. above for all Loss of Power Trip Setpoints and Allowable Values.	
11. FHB HVAC		
a. Manual Initiation	N.A.	N.A.

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUE
11. FHB HVAC (Continued)		
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
c. Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.	
d. Spent Fuel Pool Exhaust Radioactivity - High	$\leq 5.0 \times 10^{-4}$ μCi/cc	$\leq 6.4 \times 10^{-4}$ μCi/cc

TABLE 3.3-4 (Continued)

TABLE NOTATIONS

* Time constants utilized in the lead-lag controller for Steam Line Pressure-Low are $\tau_1 \geq 50$ seconds and $\tau_2 \leq 5$ seconds. CHANNEL CALIBRATION shall ensure that these time constants are adjusted to these values.

** The time constant utilized in the rate-lag controller for Steam Line Pressure-Negative Rate-High is greater than or equal to 50 seconds. CHANNEL CALIBRATION shall ensure that this time constant is adjusted to this value.

\# Deleted

\#\# Deleted

\#\#\# This setpoint value may be increased up to the equivalent limits of ODCM Control 3.11.2.1 in accordance with the methodology and parameters of the ODCM during containment purge or vent for pressure control, ALARA and respirable air quality considerations for personnel entry.

3/4.3.1 and 3/4.3.2 REACTOR TRIP SYSTEM and ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

The OPERABILITY of the Reactor Trip System and the Engineered Safety Features Actuation System instrumentation and interlocks ensures that: (1) the associated ACTION and/or Reactor trip will be initiated when the parameter monitored by each channel or combination thereof reaches its Setpoint, (2) the specified coincidence logic is maintained, (3) sufficient redundancy is maintained to permit a channel to be out-of-service for testing or maintenance, and (4) sufficient system functional capability is available from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy, and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the safety analyses. The Surveillance Requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with WCAP-10271, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," supplements to that report, and the South Texas Project probabilistic safety assessment (PSA). Surveillance intervals and out of service times were determined based on maintaining an appropriate level of reliability of the Reactor Protection System instrumentation.

The Engineered Safety Features Actuation System Instrumentation Trip Setpoints specified in Table 3.3-4 are the nominal values at which the bistables are set for each functional unit. A Setpoint is considered to be adjusted consistent with the nominal value when the "as measured" Setpoint is within the band allowed for calibration accuracy.

REACTOR TRIP SYSTEM and ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION (Continued)

The methodology to derive the Trip Setpoints is based upon combining all of the uncertainties in the channels. Inherent to the determination of the Trip Setpoints are the magnitudes of these channel uncertainties. Sensor and rack instrumentation utilized in these channels are expected to be capable of operating within the allowances of these uncertainty magnitudes. Rack drift in excess of the Allowable Value exhibits the behavior that the rack has not met its allowance. Being that there is a small statistical chance that this will happen, an infrequent excessive drift is expected. Rack or sensor drift, in excess of the allowance that is more than occasional, may be indicative of more serious problems and should warrant further investigation.

The measurement of response time at the specified frequencies provides assurance that the Reactor trip and the Engineered Safety Features actuation associated with each channel is completed within the time limit assumed in the safety analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable. Response time may be demonstrated by any series of sequential, overlapping, or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either: (1) in place, onsite, or offsite test measurements, or (2) utilizing replacement sensors with certified response times.

The Engineered Safety Features Actuation System senses selected plant parameters and determines whether or not predetermined limits are being exceeded. If they are, the signals are combined into logic matrices sensitive to combinations indicative of various accidents, events, and transients. Once the required logic combination is completed, the system sends actuation signals to those Engineered Safety Features components whose aggregate function best serves the requirements of the condition. As an example, the following actions may be initiated by the Engineered Safety Features Actuation System to mitigate the consequences of a steam line break or loss-of-coolant accident: (1) Safety Injection pumps start, (2) Reactor trip, (3) feedwater isolation, (4) startup of the standby diesel generators, (5) containment spray pumps start and automatic valves position, (6) containment isolation, (7) steam line isolation, (8) Turbine trip, (9) auxiliary feedwater pumps start and automatic valves position, (10) reactor containment fan coolers start, (11) essential cooling water pumps start and automatic valves position, (12) Control Room Ventilation Systems start, and (13) component cooling water pumps start and automatic valves position.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 116 AND 104 TO

FACILITY OPERATING LICENSE NOS. NPF-76 AND NPF-80

STP NUCLEAR OPERATING COMPANY, ET AL.

SOUTH TEXAS PROJECT, UNITS 1 AND 2

DOCKET NOS. 50-498 AND 50-499

1.0 INTRODUCTION

By application dated June 7, 1999, STP Nuclear Operating Company (the licensee) requested changes to the South Texas Project, Units 1 and 2 (STP), Technical Specifications (TSs). The proposed changes would revise TS 2.2.1, Reactor Trip System (RTS) Instrumentation Setpoints, and TS 3.3.2, Engineered Safety Features Actuation System (ESFAS) Instrumentation, and the associated Bases, by removing the Total Allowance (TA), Sensor Error (S), and Z terms (Z is the statistical summation of errors excluding sensor and rack drift) from the RTS and ESFAS instrumentation trip setpoints tables. This would replace the five-column methodology with a two-column methodology that consists of the trip setpoint and allowable value columns.

The licensee stated that the proposed change is included in the STP application for Improved Technical Specifications (ITS) and the proposed change is consistent with the guidance in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants"; however, implementation of the STP ITS has been deferred.

2.0 BACKGROUND

In 1976, Regulatory Guide (RG) 1.105, Revision 1, "Instrument Setpoints," was issued. RG 1.105, Revision 1, addressed NRC concerns associated with the frequent drift of protection system setpoints past the TS trip setpoint limit. RG 1.105, Revision 1, provided general guidance that the setpoints should be established with sufficient margin between the TS limits for the process variable and the nominal trip setpoints to allow for (a) the inaccuracy of the instrument, (b) uncertainties in the calibration, and (c) the instrument drift that could occur during the interval between calibrations. This was the first opportunity for many plants to include uncertainties in the calculation of an Allowable Value (AV). During this process, Westinghouse proposed the five-column methodology which was subsequently approved containing provisions that would provide some operating flexibility. If a plant identified that an AV had been exceeded, the five-column methodology included provisions which, in some cases, could eliminate the need for filing a formal Licensee Event Report (LER).

The five-column methodology contains the Nominal Trip Setpoint (NTS), AV, TA, S, and the Z terms. This five-column methodology was designed to reduce the number of LERs by allowing the plant the opportunity to prove that a channel was operable, even though the AV has been exceeded.

When the NRC issued 10 CFR 50.73, "Licensee Event Report System," in 1983, the filing requirements associated with an LER were changed. An LER must be filed only in cases where the unit has experienced loss of a function, and not just a single inoperable channel. With that LER filing requirement change, the benefits associated with the five-column methodology is no longer applicable (i.e., to minimize filing LERs). Westinghouse no longer recommends the five-column TS format. NUREG-1431 has adopted the two-column format which contains the "Trip Setpoint" and "Allowable Value" columns.

3.0 EVALUATION

The STP TSs adopted a five-column setpoint methodology when the units were licensed. This TS change request proposes that the TA, S, and Z terms be removed from the ESFAS and RTS instrumentation trip setpoints tables such that the two-column form will be implemented.

The proposed change eliminates the option to evaluate Equation 2.2-1 ($Z+R+S \leq TA$), from TSs 2.2.1 and 3.3.2, within 12 hours, when the Trip Setpoint is outside the AV limit. The equation originally established a threshold for submitting an LER. With implementation of two-column format, any time an AV is exceeded it will be evaluated against 10 CFR 50.73 to determine if filing an LER is required.

With a two-column approach, channel operability is based on the AV/Trip Setpoint relationship as determined by the plant setpoint methodology and confirmed through plant surveillance. With the values of TA, Z, and S deleted, the channel must be declared inoperable when its setpoint is found less conservative than the AV or found inconsistent with the assumptions of the setpoint methodology. The two-column approach is more conservative than the five-column approach, and therefore, is acceptable to the staff.

In summary, the staff has reviewed the proposed changes to TS 2.2.1, TS 3.3.2, and the associated Bases. The change eliminates the five-column methodology and transitions to a two-column methodology. The staff finds that the two-column methodology is more conservative than the five-column methodology and is consistent with NUREG-1431, and therefore, is acceptable.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve 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 amendments involve no significant hazards consideration, and there has been no public comment on such finding (64 FR 35211). Accordingly, the amendments meet 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 amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: H. Li

Date: September 13, 1999