Enclosure 3 contains Sensitive information and is being withheld from public disclosure in accordance with 10 CFR 2.390(d)(1). Upon separation from Enclosure 3, this letter, Enclosure 1 and Enclosure 2 are decontrolled.

Nuclear Operating Company

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

April 28, 2016
NOC-AE-16003371
10CFR50.71(e)
10 CFR 2.390

Attention: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Updated Final Safety Analysis Report Revision 18

Pursuant to 10 CFR 50.71(e), STP Nuclear Operating Company (STPNOC) submits an update to the South Texas Project Updated Final Safety Analysis Report (UFSAR). This revision addresses changes made to the STP UFSAR since submittal of the last biennial update on April 28, 2014.

Enclosure 1 to this letter includes a summary of changes made in Revision 18 under the provisions of 10CFR50.59 or in accordance with the guidance of NEI 98-03 and NEI 96-07.

Enclosure 2 to this letter includes two CD-ROMs containing the redacted version of the South Texas Project UFSAR, Revision 18.

Enclosure 3 to this letter includes three CD-ROMs containing the non-public version of the UFSAR. Enclosure 3 contains sensitive information as defined by 10 CFR 2.390(d)(1) and should be withheld from public disclosure.

There are no commitments in this letter.

If you should have any questions on this submittal, please contact either Marilyn Kistler at (361) 972-8385 or me at (361) 972-7344.

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

Executed on April 28, 2016

James Connolly
Site Vice President

Enclosure 1: South Texas Project Updated Final Safety Analysis Report Revision 18, Summary of Changes
Enclosure 2: Updated Final Safety Analysis Report, Revision 18 (Redacted - Public Version)
Enclosure 3: Updated Final Safety Analysis Report, Revision 18 (Not for Public Disclosure)

STI: 34309771

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Note: Above copies distributed without Enclosure 2 and 3.

South Texas Project Updated Final Safety Analysis Report Revision 18

Summary of Changes

Chapter 1, "Introduction and General Description of Plant"

1. Removed the Refueling Equipment Building. The building is being used as the Radiation Protection Storage Building.(CN-3129) [Figure 1.2-3, Figure 1.2-4 and Table 1.1-1]

2. Editorial correction, changed "on-third" to "one-third". (CN-3131) [1.2.2.11.1.2] {NEI 98-03}

3. Updated Westinghouse Quality Management System. (CN-3124) [Table 1.6-2]

4. Methodology change from the PHOENIX-P computer code to the NEXUS/PARAGON computer codes. (CN-3082) [Table 1.6-2]

Chapter 2, "Site Characteristics"

1. Updated location of schools within 10 miles of STPEGS. (CN-3175) [Table 2.1-2]

2. Removed Tidehaven Intermediate School (El Maton). (CN-3177) [Figure 2.1-3]

Chapter 3, "Design Of Structures, Components, Equipment, and Systems

1. Revised the testing requirement for the Containment Spray System spray nozzles from periodically to after a maintenance activity. Added new Reference Section to include Technical Specification Amendment Numbers. (CN-3179) [3.1.2.4.11.1 and Reference Section]

2. Revised Table, "Balance of Plant-Quality Classification of Structures, Systems, and Components" to update the Code reference for the Cask Handling Overhead Crane. (CN-3133) [Table 3.2.A-1]

3. Revised to show Isolation Valve Cubicle flooding from unacceptable level to worst case flood, and 52 hours to 36 hours. (CN-3171) [3.4.4.2]

4. Removed Essential Cooling Water System Intake Structure exterior doors from the tornado protection exemption list. (CN-3159) [3.5.1.4]

5. Revised Containment maximum flood height. (CN-3167) [Table 3.6.B-1]

6. Add Appendix 7A to Note 64. (CN-3123) [Table 3-12-1]

7. Updated reference to License Amendments 209 for Unit 1 and 196 for Unit 2 in Note 72. (CN-3172) [Table 3-12-1] {NEI 98-03}

South Texas Project Updated Final Safety Analysis Report Revision 18

Summary of Changes

Chapter 4, ""Reactor"

1. Added information regarding the removal of control rod D-6 in Unit 1 for Cycle 20 only. Removed Figure 4.3-38 and Figure 4.3-39 and text referring to these figures. The text referring to these Figures is now referred to Figure 15.0.3. (CN-3160) [Table 4.1.1, Section 4.2.2.3.4, 4.3.2.5, Figure 4.3-36, Deleted Figure 4.3-38, and Figures 4.3-39 sheets 1 & 2]

2. Methodology change from the PHOENIX-P computer code to the NEXUS/PARAGON computer codes. (CN-3082) [Table 4.1-2, 4.3.2.3.1, 4.3.2.3.2, 4.3.2.3.3, 4.3.2.4, add reference 4.3-5 and 4.3-6]

3. Clarification change to note to state the use of the revised clad stress criteria described in WCAP-10125-P-A are restricted to standard ZIRLO cladding and should not be used for Optimized ZIRLO cladding. (CN-3134) [4.2.1.1, 4.2.3.3]

Chapter 5, "Reactor Coolant System and Connected Systems"

1. Added information regarding the inspection program for Bottom Mounted Instrumentation flux thimbles. (CN-3176) [5.2.4.1]

2. Installed Station Blackout Seals on selected Unit 1 and Unit 2 Reactor Coolant Pumps to improve operational characteristics. (CN-3097) [5.4.1.2, 5.4.1.3.4]

3. Updated reference to License Amendments 209 for Unit 1 and 196 for Unit 2. (CN-3172) [5.4.2.2] {NEI 98-03}

4. Editorial correction, changed "exposure eof" to "exposure of". (CN-3131) [5.4.7.2.4] {NEI 98-03}

Chapter 6, "Engineered Safety Features"

1. Revised to incorporate new Containment analysis methodology using GOTHIC code. Various editorial changes. (CN-3136) [6.2.1, Tables 6.2.1.1-1, 6.2.1.1-2, 6.2.1.1-3, 6.2.1.1-4, 6.2.1.1-5, 6.2.1.1-6. 6.2.1.1-7, 6.2.1.1-8, 6.2.1.1-9, 6.2.1.1-10, 6.2.1.2-5A, 6.2.3.1-1, 6.2.1.3.1-2, 6.2.1.3.1-3, 6.2.1.3.1-4, 6.2.1.3.1-6,, 6.2.1.3.1-5B, 6.2.3.1-6, 6.2.3.1-7, 6.2.3.1-8, 6.2.3.1-9, 6.2.3.1-10, 6.2.3.1-11, 6.2.3.1-12, 6.2.3.1-13, 6.2.3.1-14, 6.2.3.1-15, 6.2.3.1-16, 6.2.3.1-17, 6.2.3.1-18 and Figure 6.2.1.1-3, 6.2.1.1-30, 6.2.1.1-31, 6.2.1.1-32, 6.2.1.1-33, 6.2.1.1-34, 6.2.1.1-35, 6.2.1.1-36, 6.2.1.1-37, 6.2.1.1-38]

South Texas Project Updated Final Safety Analysis Report Revision 18

Summary of Changes

2. Installed new containment penetration M-14 and M-18 isolation valves. (CN-3156) [Figures 6.2.4-1 sheets 15 and 19]

3. Revised the Containment Spray and Safety Injection pump Net Positive Suction Head Parameters resulting from a new calculation. (CN-3143) [Table 6.2.2-4, Table 6.3-1]

4. Installed new containment penetration isolation valve M-14 for backup FLEX pump. (CN-3138) [Figure 6.2.4-1]

5. Installed new containment penetration isolation valve M-18 for backup FLEX pump. (CN-3139) [Figure 6.2.4-1]

6. Incorporated new input used in Hot Leg Switchover analysis. (CN-3157) [6.3.2.5]

7. Updated the post-LOCA sump solution minimum and maximum pH calculation input parameters. Editorial correction to title on Table for Input Parameters to Determine Minimum pH for Sump Solution. (CN-3151) [Table 6.5-3, Table 6.5-4 and Figure 6.5-1].

Chapter 7, "Instrumentation and Controls

1. Revised to show spare in place for the Unit 1 Electrical Auxiliary Building air supply heater (CN-3119) [Table 7.3-5]

2. Revised wording in Note "s". (CN-3123) [Table 7.5-1]

3. Revised to incorporate the NRC review of single failure with regard to the Residual Heat Removal pump low flow interlock. (CN-3122) [7.6.6.4] {NEI 98-03}

4. Added information regarding the inspection program for Bottom Mounted Instrumentation flux thimbles. Added new reference.(CN-3176) [7.7.1.9.3, Reference 7.7-13]

5. Revised rod speed for either shutdown banks or manual operation of control banks. (CN-3174) [7.7.1.2]

6. Deleted comment entered for CN-3052 to indicate nonconforming condition in accordance with RIS 05-020. (CN-3123) [Table II.F.1-3]

7. Revised to incorporate Alternate Source Term License Amendment information. (CN-3137) [II.B.2, Table 7.A.II.B.2-2, II.F.1, Attachment 6, III.D.3.4 Attachment 1, S.8] {NEI 98-03}

South Texas Project Updated Final Safety Analysis Report Revision 18

Summary of Changes

Chapter 8. "Electric Power"

1. Updated to reflect the changes made by Centerpoint to the line protection schemes for the Dow 18 and 27 transmission lines at the STP 345 kV switchyard. (CN-3180) [8.2 and Figure 8.2-3A Sheet 1]

2. Replaced the switchyard reactor bank circuit switchers with circuit breakers. (CN-3146) [8.2.1.2, Figure 8.2-1, Figure 8.2-3A Sheet 1 of 3A, new Figure 8.2.3A Sheet 3 of 3]

3. Revised the calculated generator data for the Unit 1 turbine generator as a result of changes due to the Unit 1 Stator Rewind. (CN-3087) [Table 8.2-2]

4. Revised to allow the use of an alternate material for the obsolete and unavailable Ametek Siltemp cloth. (CN-3120) [8.3.1.4.4.5.7]

5. Replaced Unit 2 transformers with larger units. (CN-3140) [8.2.1.5]

6. Added a reference to a manual operator action to shed Train A Engineered Safety Features Sequencer within 30 minutes of Station Blackout. (CN-3150) [8.3.2.1.2]

7. Update to show Pressurizer Heaters 39, 83, and 94 are disconnected and Pressurizer Heater 15 is reconnected in Unit 1. (CN-3116) [Table 8.3-14]

8. Removed the description for the air magnetic circuit breakers so replacements can be either air magnetic or vacuum circuit breakers. (CN-3125) [8.3.1]

Chapter 9 , "Auxiliary Systems"

1. Removed the ultrasonic cleaning system from Unit 2 Spent Fuel Pool. (CN-3086) [9.1.2]

2. Added information regarding new Spent Fuel Pool Level indicators for both units.(CN-3155) [9.1.3.3.4]

3. Removed welded steel plate installed in the south end of the cask connecting channel. (CN-3169) [9.1.4.2.3.]

4. Revised "Boron Thermal Regeneration," to add clarification that CVCS reactivity control can be accomplished through Reactor Makeup Control as well as Boron Thermal Regeneration. (CN-3170) [9.3.4.1.1.1.] {NEI 98-

South Texas Project Updated Final Safety Analysis Report Revision 18

Summary of Changes

03}

5. Editorial change to remove duplicate information. (CN-3178) [9.4.1.3] {NEI 98-03}

6. Removed the reference to Unit 1. (CN-3119) [9.4.1.2.1(2)9a)(3)]

7. Provided clarification to state all Mechanical Auxiliary Building heating coils are not required to be in service at the same time. (CN-3147) [Table 9.4-2.3] {NEI 98-03}

8. Added uninterruptable power source backup equipment for the Lossy Loop communication system to all Unit 1 and Unit 2 120 VAC circuits to maintain power while transitioning from primary motor control center power to diesel power. (CN-3118) [9.5.2.2.1]

Chapter 10. "Steam and Power System Conversions"

1. The Unit 1 Stator Rewind Project revised the short circuit ratio for the rewound stator from 0.58 to 0.63. (CN-3087) [10.1]

2. Added the use of Inconel (SB-637 UNS N07750) Discs in the Main Steam Safety Valves. (CN-3127) [Table 10.3-2]

3. Added a description of the feedwater flow venturis and feedwater ultrasonic flow meter. (CN-3142) [10.4.7.1]

Chapter 11, "Radioactive Waste Management"

1. Revised Radiation Monitoring System setpoints to be consistent with Emergency Action Level limits established by NEI 99-01,Rev.6. (CN-3153) [Table 11.5-1] {NEI 98-03)

Chapter 12, "Radiation Exposure"

1. Removed the description of the Refueling Equipment Building. The building is being used as the Radiation Protection Storage Building.(CN-3129) [12.3.2.2.2.10]

2. Revised Radiation Monitoring System setpoints to be consistent with Emergency Action Level limits established by NEI 99-01 Rev.6. (CN-3153) [Table 12.3.4-1] {NEI 98-03)

South Texas Project Updated Final Safety Analysis Report Revision 18

Summary of Changes

Chapter 13. "Conduct of Operations"

1. Removed the unit-specific operations manager positon. Created Manager, Operations Department and Operations Division Manager positions. (CN-3115) [13.1.2, Figures 13.1. and 13.1.2]

Chapter 15, "Accident Analyses"

1. Revised Over Temperature ΔT and Overpower ΔT time delay. (CN-3130) [Table 15.0-4] {NEI 98-03}

2. Revised manual action to state "actions after 30 minutes" from "actions within 30 minute". (CN-3161) [15.2.8.2] {NEI 98-03}

3. Removed reference to NRC Q&R 211.52. (CN-3173) [15.2.8.4] {NEI 98-03}

4. Revised to show a change in Peak Clad Temperature for Unit 1 Cycle 19. (CN-3117) [Table 15.6-21] {NEI 98-03}

5. Revised to show a change in Peak Clad Temperature for Unit 2 Cycle 18. (CN-3149) [Table 15.6-21] {NEI 98-03}

6. Revised to show a change in Peak Clad Temperature for Unit 2 Cycle 18. (CN-3166) [Table 15.6-21] {NEI 98-03}

7. Added Containment Spray System pumps to Table for, "Maximum Potential Recirculation Loop Leakage" for clarification. (CN-3135) [Table 15.6-16] {NEI 98-03}

8. Corrected dose resulting from a Large Break LOCA to reflect the values approved in License Amendment 207 for Unit 1 and 195 for Unit 2. (CN-3152) [Table 15.6-17]

9. Revised to clearly distinguish between commitments made to enhance defense-in-depth and what is actually modeled in the Fuel Handling Accident Analyses. (CN-3132) [15.7.4.2.1] {NEI 98-03}

10. Editorial correction, changed "scam" to "scram". (CN-3131) [15.8] {NEI 98-03}

South Texas Project Updated Final Safety Analysis Report Revision 18

Summary of Changes

NRC Question and Response

Chapter 6

1. Editorial corrections (CN-3136) [Question 440.12N]

Chapter 15

1. Editorial correction, changed "900"F to "90°F" (CN-3131) [Question 440.72N] {NEI 98-03}

Updated Final Safety Analysis Report,

Revision 18 (Redacted – Public Version)

April 2016

In accordance with the request in Regulatory Issues Summary 2015-17, "Review and Submission of Updates to Final Safety Analysis Reports, Emergency Preparedness Documents, and Fire Protection Documents", the South Texas Project is providing a redacted version of Revision 18 to the South Texas Project Updated Final Safety Analysis (UFSAR). The UFSAR contains certain sensitive information. Using the guidance provided in SECY-04-0191, the information listed below has been redacted.

Document Number	**Justification for Withholding**
Figure 1.2-3, Plot Plan	Figure shows "vital area boundary" fencing
Figure 1.2-4, Plot Plan	Figure shows "vital area boundary" fencing
Table 2.4.1-1	Contains design information on nearby dams
Table 2.4.1-2,	Contains design information on nearby dams
Table 2.4.1-3,	Contains design information on nearby dams
Table 2.4.1-4	Contains design information on nearby dams
Table 2.4.1-5	Contains design information on nearby dams
Table 2.4.1-6	Contains design information on nearby dams
Table 2.4.1-7	Contains design information on nearby dams
Table 2.4.1-8	Contains design information on nearby dams
Table 2.4.1-9	Contains design information on nearby dams
Table 2.4.1-10	Contains design information on nearby dams
Table 2.4.1-11	Contains design information on nearby dams

Document Number	Justification for Withholding
Table 2.4.1-12	Contains design information on nearby dams
Table 2.4.1-13	Contains design information on nearby dams
Table 2.4.1-14	Contains design information on nearby dams
Table 2.4.1-15	Contains design information on nearby dams
Table 2.4.1-16	Contains design information on nearby dams
Table 2.4.1-17	Contains design information on nearby dams
Table 2.4.1-18	Contains design information on nearby dams
Table 2.4.1-19	Contains design information on nearby dams
Table 2.4.1-20	Contains design information on nearby dams
Table 2.4.1-21	Contains design information on nearby dams
Table 2.4.1-22	Contains design information on nearby dams
Table 2.4.1-23	Contains design information on nearby dams
Table 2.4.1-24	Contains design information on nearby dams
Figure 6.2.1.2-3	Subcompartment analysis drawings that show equipment locations, doorways, stairways
Figure 6.2.1.2-4	Subcompartment analysis drawings that show equipment locations, doorways, stairways
Figure 6.2.1.2-5	Subcompartment analysis drawings that show equipment locations, doorways, stairways

Document Number	Justification for Withholding
Figure 6.2.1.2-6	Subcompartment analysis drawings that show equipment locations, doorways, stairways
Figure 6.2.1.2-7	Subcompartment analysis drawings that show equipment locations, doorways, stairways
Figure 6.2.1.2-9	Subcompartment analysis drawings that show equipment locations, doorways, stairways
Figure 6.2.2-3	Reactor Building composite piping drawings that show equipment locations
Figure 6.2.2-6	Reactor Building Containment Spray System spray coverage drawings that show equipment locations, doorways, stairways,
Figure 6.2.2-7	Reactor Building Containment Spray System spray coverage drawings that show equipment locations, doorways, stairways,
Figure 6.2.2-8	Reactor Building Containment Spray System spray coverage drawings that show equipment locations, doorways, stairways,
Figure 6.2.2-9	Reactor Building Containment Spray System spray coverage drawings that show equipment locations, doorways, stairways,
Figure 6.2.2-10	Reactor Building Containment Spray System spray coverage drawings that show equipment locations, doorways, stairways,
Figure 6.2.2-11	Reactor Building Containment Spray System spray coverage drawings that show equipment locations, doorways, stairways,
Figure 6.2.2-12	Reactor Building Containment Spray System spray coverage drawings that show equipment locations, doorways, stairways,
Figure 6.4-1	Control Room layout drawings showing equipment locations and doorways.
Figure 6.4-2	Control Room layout drawings showing equipment locations and doorways.
Figure 9.5.1-40	Equipment location
Figure 9.5.1-41	Equipment location

Document Number	**Justification for Withholding**
Figure 9.5.1-42	Equipment location
Figure 9.5.1-43	Equipment location
Figure 9.5.1-44	Equipment location
Figure 9.5.1-45	Equipment location
Figure 9.5.1-46	Equipment location

Enclosure 3 contains Sensitive information and is being withheld from public disclosure in accordance with 10 CFR 2.390(d)(1).

Updated Final Safety Analysis Report,

Revision 18 (Not for Public Disclosure)

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