



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

April 26, 2012  
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10CFR50.71(e)  
STI: 33517285

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
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Rockville, MD 20852-2738

South Texas Project  
Units 1 and 2  
Docket Nos. STN 50-498, STN 50-499  
Updated Final Safety Analysis Report Revision 16

Pursuant to 10CFR50.71(e), STP Nuclear Operating Company submits Revision 16 to the South Texas Project Updated Final Safety Analysis Report (UFSAR).

Attachment 1 includes a summary of changes in Revision 16 that were made under the provisions of 10CFR50.59 or in accordance with the guidance of NEI 98-03 and NEI 96-07. Attachment 2 consists of two CD-ROM's. CD-ROM 1 includes the UFSAR; CD-ROM 2 and 3 contain the UFSAR Figures and Controlled Drawings.

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) 972-7867.

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

Executed on 4/26/2012.

  
David W. Rencurre  
Chief Nuclear Officer

MK

Attachment 1: Summary of Changes  
Attachment 2: Updated Final Safety Analysis Report, Revision 16

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Note: Above copies distributed without attachment 2 except as noted by an asterisk.

## Summary of Changes

### Updated Final Safety Analysis Report, Revision 16

- ( ) - Change Notice number
- [ ] - UFSAR section(s) affected if not already identified
- { } - NEI 98-03 Criteria document used for change

#### Chapter 1, "Introduction and General Description of Plant"

1. Corrected inconsistency between actual main MWe generator output and design value. (CN-3034) [1.1.1] {NEI 98-03}
2. Added ONAF, Oil Natural Air Force and ONAN, Oil Natural Air Natural to the Definition Section. (CN-3027) [Table 1.1-1]
3. Removed reference to the STP Visitors' Center. (CN-3048) [1.2.1.2]

#### Chapter 2, "Site Characteristics"

1. Added a clarification to the low population zone regarding the radiological consequences analysis. (CN-3044) [2.1.1.2] {NEI 98-03}
2. Removed reference to the STP Visitors' Center. Added an additional seasonal dwelling and Equistar Mera Land Pavilion. Corrected the name of the FM 521 River park. In addition, added reference to the proposed Unit 3 & 4 sites. (CN-3048) [2.1.1.2, 2.1.3.3, 2.2.1.3 and 2.3.3]
3. Removed the requirement to conduct a seepage test during a refueling outage. (CN-3038) [2.5.6.6.2.4]

#### Chapter 3, "Design of Structures, Components, Equipment, and Systems"

1. Added reference to the 2004 Edition ASME Section XI Code. (CN-3042) [Table 3.2.B-2 Note 28]
2. Incorporated information for the Unit 2 replacement reactor vessel head, control rod drive mechanism, digital rod position indication and core exit thermocouple cables. (CN-2994) [Table 3.2.B-1, Table 3.2.B-2, 3.5.1, Table 3.5-3, Table 3.5-4, 3.9.1, 3.9.4, Table 3.9-19]
3. Revised the total number of primary side hydrostatic test cycles to a limit of 1. Added note 2. (CN-2997) [Table 3.9-8]
4. Restored the four coil Control Rod Drive Mechanism in Unit 1. Deleted Figure 3.9-4B and Figure 3.9-5B. (CN-3024) [3.9.4.1, Figure 3.9-4, Figure 3.9-5]

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5. Incorporated the revised containment atmosphere pressure and temperature analysis for a steam line break event. (CN-3016) [Table 3.11-1]
6. Hypalon is brand name for Dupont Chlorsulfonated Polyethylene used for cable jacketing material. Revised the UFSAR to specify Chlorsulfonated Polyethylene can be used to replace the brand name Dupont. (CN-3036) [Table 3.11-5]
7. Updated compliance to Regulatory Guide 1.149 to Revision 4 and ANSI/ANS 3.5-2009. (CN-3047) [Table 3.12-1]
8. Revised Note 40 to reflect that the frequency of ESF Diesel surveillance testing is controlled by the Surveillance Frequency Control Program. (CN-3049) [Table 3.12-1, Note 40]

### Chapter 4, "Reactor"

1. Revised the minimum Departure from Nucleate Boiling Ratio at nominal conditions from 2.55 to 2.528 for typical flow channel and 2.47 to 2.451 for a thimble control channel. (CN-3032) [Table 4.1-4]
2. Incorporated information for the Unit 2 replacement reactor vessel head, control rod drive mechanism, digital rod position indication and core exit thermocouple cables. (CN-2994) [4.5.1]

### Chapter 5, "Reactor Coolant System and Connected Systems"

1. Incorporated information for the Unit 2 replacement reactor vessel head, control rod drive mechanism, digital rod position indication and core exit thermocouple cables. (CN-2994) [Table 5.1-1, 5.2.3, Table 5.2-1, Table 5.2-2, Table 5.2-6, 5.3.1, 5.3.3, Table 5.3-1, Table 5.3-2, Table 5.3-4]
2. Revised description for allowable material which can be used in the RCP Closure Bolting. (CN-3006) [Table 5.2-2]
3. Corrected the spelling of reactor and Class 1 primary component material specification from CR8A to CF8A. (CN-3050) [5.3.3.6, Table 5.2-2] {NEI 98-03}

### Chapter 6, "Engineered Safety Features"

1. Hypalon is brand name for DuPont Chlorsulfonated Polyethylene used for cable jacketing material. Revised the UFSAR to specify Chlorsulfonated Polyethylene can be used to replace the brand name DuPont. (CN-3036) [6.1.2.2]

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2. Clarified that sump debris is particulate and fibers. Deleted reference to marinite insulation which was removed in 1RE15 AND 2RE14. (CN-2991) [6.2.2.2.3]
3. Corrected valve number on Containment Penetration figure. (CN-3020) [Figure 6.2.4-1 Sheet 14 of 100] {NEI 98-03}
4. Incorporated the revised containment atmosphere pressure and temperature analysis for a steam line break event. (CN-3016) [6.2.1, Table 6.2.1.1-1, 6.2.1.1-5, 6.2.1.1-9, 6.2.1.1-14, 6.2.1.1-15, 6.2.1.4-1, 6.2.1.4-2, Figures 6.2.1.1-25, 6.2.1.1-27, 6.2.1.1-28, 6.2.1.1-29. Deleted Table 6.2.1.1-14A, 6.2.1.1-15A, 6.2.1.4-1A, 6.2.1.4-2A, Figures 6.2.1.1-25A, 6.2.1.1-27A, 6.2.1.1-28A, 6.2.1.1-29A]

### Chapter 7, "Instrumentation And Controls"

1. Updated to reflect AMSAC control input changes from feedwater flow to steam generator level. Corrected figure reference. (CN-3046) [Figures 7.2-7 (Sheet 17 of 19), Figure 7.2-16 (Sheet 16 of 19), Figure 7.2-17(Sheet 17 of 19) {NEI 98-03}
2. Removed Essential Cooling Water valves to the Essential Chillers. Added a communication link between the Data Processing Unit. (CN-2996) [Figure 7A.II.F.2-2 and Figure 7.5.6-1]
3. Revised Atmospheric Steam Relief, item 7 to make applicable to both units. (CN-3034) [7.4.1.2 item 7]
4. Added description of operation of switches installed to allow the Steam Generator PORV to be opened after a loss of power to the hydraulic pumps. (CN-3022) [7.4.1.2]
5. Added information to reflect that the containment high range radiation monitors are subject to a temperature induced current effect for a brief period during extreme temperature changes. (CN-3052) [References 7.5-3, Table 7.5-1 Note S and Appendix 7A Table II.F.1-3]
6. Clarified diversity provided for RHR isolation valve pressure transmitter interlocks. (CN-3017) [7.6.2]
7. Added information to reflect a change in the C-20 disarming delay setpoint from the WCAP value of 360 seconds to 260 seconds. (CN-3015) [7.8.2.1.3, reference 7.8-4]

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8. Updated Tables to show hydrogen monitoring as a backup indication instead of a key indication. (CN-3003) [Table 7B.5-1 and Table 7B.6-1] {NEI 98-03}.

#### Chapter 8, "Electric Power"

1. Removed the maximum power to the grid. The maximum output MW depends on the power factor. (CN-3040) [8.2.1.5] {NEI 98-03}
2. Revised to clarify the alternate method used for energizing the 13.8Kv auxiliary busses of both units, and describing energizing of 13.8kV from either Unit 1 or 2 Standby Transformers. [CN-3043] [ 8.3.1.1] {NEI 98-03}
3. Replaced 13.8 KV and 4.16 KV Transformer E2B. (CN-2931) [8.3.1.1.2].
4. Clarified and added additional information for the Load Tap Changer. (CN-3037) [8.3.1.1.2].
5. Replaced obsolete inverters with new inverters of the same standard. Replaced an operator action with an automatic action. (CN-2978)(Unit 1) (CN-3000) (Unit 2) [8.3.1.1.4.6]
6. CN-3013 - Revise Station Blackout position to delete the need for coping analysis. (CN-3013) [8.3.4.5 through 8.3.4.5.6]
7. Revised Table 8.3-3 for the RHR Motor due to the installation of a new compatible motor. (CN-3031) [Table 8.3-3]

#### Chapter 9, "Auxiliary Systems"

1. Revised the description of refueling activities associated with non-rapid refueling. (CN-3007) [9.1.4.2.2.2]
2. Revised to change the survey frequency of the Essential Cooling Pond sediment from every 5 years to every 10 years. (CN-3005) [9.2.5.4]
3. Deleted the word "continuously" regarding the hydrogen supply to the Volume Control Tank. Hydrogen supply is discontinued during maintenance and inspections. (CN-3001) [9.3.4]
4. Added a reference to Table 5.2-4 for Reactor Coolant System (RCS) Hydrogen Concentration and removed (25 to 50 cm<sup>3</sup> hydrogen at standard temperature and pressure per kg of water) statement. Also

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replaced “a cold shutdown” with “venting of the RCS”. (CN-3033)  
[9.3.4.1.2.2, 9.3.4.1.2.6]

5. Incorporated flow changes to battery and switchgear rooms. (CN-3030)  
[Table 9.4-2.1] {NEI 98-03}
6. Clarified the use of Draft Revision 5 of NUREG-0453 for the basis document for establishing the functionality capability requirements of fire protection systems. (CN-3039) [9.5.1.6.1]  
{NEI 98-03}

### Chapter 10, “Steam and Power Conversion System”

1. Added information on the installation of Steam Generator Iron Dispersant Skid to inject Poly Acrylic Acid into each Feedwater Line in the Turbine Generator Building. (CN-3014) [10.3.5, 10.4.7]
2. Added a note regarding stating ACW open-loop pumps of the product lubricated configuration do not require external seal water. (CN-3045)  
[10.4.5.5]

### Chapter 11, “Radioactive Waste Management”

Deleted the word “continuously” regarding the hydrogen supply to the Volume Control Tank. Hydrogen supply is discontinued during maintenance and inspections. (CN-3001) [11.3.2 and Table 11.3-2]

### Chapter 12, “Radiation Exposure”

Updated to reflect the current organization. (CN-3023) [12.1.1.1]

### Chapter 13, “Conduct of Operations”

1. Updated to reflect the current organization. (CN-3023) [13.1.2 and Figure 13.1.1]
2. Added ANSI/ANS 3.5-2009 to Applicable NRC Documents. (CN-3047)  
[13.2.3]

### Chapter 15, “Accident Analyses”

1. Added wording to include the complete loss of forced reactor coolant flow for loss of nonemergency AC power to station auxiliaries. (CN-3012) [Table 15.0-12] {NEI 98-03}

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2. Added manual actions to manually close Steam Generator PORV's to Unit 2 only. (CN-3022) [15.0.8.3]
3. Deleted description of Steam Generator PORV's failing "as is" and Reference 15.0-16. (CN-3035) [15.0.8.3]
4. Revised the sequence of events for Loss of Offsite Power and Loss of Normal Feedwater. (CN-3009) [15.2.6 and 15.2.7] {NEI 98-03}
5. Incorporated information for the Unit 2 replacement reactor vessel head, control rod drive mechanism, digital rod position indication and core exit thermocouple cables. (CN-2994) [15.4]
6. Added information to permit Reactor Coolant System makeup from the Boron Recycle System in Mode 5 loops not filled and Mode 6. (CN-3027) [15.4.6.2]
7. Removed the assumption that a failed train of control room HVAC is isolated within 30 minutes. (CN-3004) [15.6.5.3.1.4] {NEI 98-03}
8. Revised description of the steam releases from the PORV on the ruptured steam generator to clarify steaming behavior. Both the current and revised descriptions are consistent with the AST SGTR radiological analysis submitted to and approved by the NRC. (CN-3008) [15.6.3.3 (Item 10), Table 15.6.3A, Table 15.6.3C] {NEI 98-03}

### Chapter 16, "Technical Specifications"

Revised to change capsule withdrawal from "X" to "W" and corrected Unit 2 effective full power years at withdrawal. (CN-3018) [Table 16.1-2]

### Response to NRC Questions

Chapter 5 Incorporated information for the Unit 2 replacement reactor vessel head, control rod drive mechanism, digital rod position indication and core exit thermocouple cables. (CN-2994) [122.7]

Chapter 6 Designated valves as "not locked". (CN-3041) [440.44N, Table 440.44N-2]