

November 02, 2007

MEMORANDUM TO: Michael R. Gartman, Chief
EBWR/ABWR Project Branch 2
Division of New Reactor Licensing
Office of New Reactors.

FROM: Charles Cox, Chief /RA/
Siting and Accident Consequences Branch
Division of Site and Environmental Reviews
Office of New Reactors

SUBJECT: ACCEPTANCE REVIEW OF ADVANCE BOILING WATER REACTOR
SOUTH TEXAS PROJECTS COMBINED LICENSE APPLICATION
FINAL SAFETY ANALYSIS REPORT (TAC NO: MD6848)

The Siting and Accident Consequences Branch (RSAC) staff has completed its acceptance review for the Combined License (COL) application submitted by South Texas Projects (STP). This review covered the following COL application Final Safety Analysis Report (FSAR) Sections for which RSAC has review responsibilities and, in addition, applicable interface reference documents in the FSAR:

- FSAR Section 2.0
- FSAR Section 2.2
- FSAR Section 2.3
- FSAR Section 3.5.1.5
- FSAR Section 3.5.1.6
- FSAR Section 6.5
- FSAR Section 11.1
- FSAR Section 15.6
- FSAR Section 15.74

Completeness and Sufficiency

Based on the review, the RSAC staff has determined that the application contains the information required by regulations, RG 1.206, Sections C.I.2.1, C.I.2.2, C.I.2.3, C.I.6.5, C.I.11.1, C.I.15.6, and that the submitted information is technically sufficient for RSAC to commence the STP COLA detailed technical review.

Schedule

The estimated effort for the detailed technical review of the STP COLA SRP Sections by RSAC is generally consistent with the current pre-baseline EPM model. The resource plan that currently exists in the EPM for these sections may be retained.

15/4

The SRP Sections being used for this portion of the STP COLA review are:

- SRP 2.1.1, "Site Location and Description"
- SRP 2.1.2, "Exclusion Area Authority and Control"
- SRP 2.1.3, "Population Distribution"
- SRP 2.2.1- 2.2.2, "Identification of Potential Hazards in Site Vicinity"
- SRP 2.2.3, "Evaluation of Potential Accidents"
- SRP 2.3.1, "Regional Climatology"
- SRP 2.3.2, "Local Meteorology"
- SRP 2.3.3, "Onsite Meteorological Measurements Programs"
- SRP 2.3.4, "Short-term Dispersion Estimates for Accident Releases"
- SRP 2.3.5, "Long-Term Atmospheric Dispersion Estimates for Routine Releases"
- SRP 3.5.1.5, "Site Proximity Missiles (Except Aircraft)"
- SRP 3.5.1.6, "Aircraft Hazards"
- SRP 6.5, "Fission Product Removal and Control Systems"
- SRP 11.1, "Source Terms"
- SRP 15.6, "Decrease in Reactor Coolant Inventory"
- SRP 15.7.4, "Fuel Handling Accident"

Enclosure: 1. Table 1, Safety Analysis Report Acceptance Review Results for STP
ABWR COLA

CONTACT: Charles Cox, NRO/DSER/RSAC
301-415-2003

The SRP Sections being used for this portion of the STP COLA review are:

- SRP 2.1.1, "Site Location and Description"
- SRP 2.1.2, "Exclusion Area Authority and Control"
- SRP 2.1.3, "Population Distribution"
- SRP 2.2.1- 2.2.2, "Identification of Potential Hazards in Site Vicinity"
- SRP 2.2.3, "Evaluation of Potential Accidents"
- SRP 2.3.1, "Regional Climatology"
- SRP 2.3.2, "Local Meteorology"
- SRP 2.3.3, "Onsite Meteorological Measurements Programs"
- SRP 2.3.4, "Short-term Dispersion Estimates for Accident Releases"
- SRP 2.3.5, "Long-Term Atmospheric Dispersion Estimates for Routine Releases"
- SRP 3.5.1.5, "Site Proximity Missiles (Except Aircraft)"
- SRP 3.5.1.6, "Aircraft Hazards"
- SRP 6.5, "Fission Product Removal and Control Systems"
- SRP 11.1, "Source Terms"
- SRP 15.6, "Decrease in Reactor Coolant Inventory"
- SRP 15.7.4, "Fuel Handling Accident"

Enclosure: 1. Table 1, Safety Analysis Report Acceptance Review Results for STP
ABWR COLA

CONTACT: Charles Cox, NRO/DSER/RSAC
301-415-2003

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ADAMS Accession NO.: ML073040266

OFFICE	DSER/RSAC: BC
NAME	CCox/rmg
DATE	11/02/07

Memo to Michael R. Gartman from Charlie Cox dated _____

SUBJECT: ACCEPTANCE REVIEW OF ADVANCE BOILING WATER REACTOR SOUTH
TEXAS PROJECTS COMBINED LICENSE APPLICATION FINAL SAFETY
ANALYSIS REPORT (TAC NO: MD6848)

DISTRIBUTION:

RSAC r/f
George Wunder
Mark Tonnaci

1: Safety Analysis Report Acceptance Review Results for STP 3 & 4 ABWR COL

Out of Scope

SER Section:	<u>2.0; 2.2; 3.5.1.5; and 3.5.1.6</u>	Technical Branch:	<u>RSAC (Primary/Secondary)</u>	Technical Reviewer:	
Branch Chief:	<u>Charles Cox</u>	SRP Section:	<u>2.1.1; 2.12; 2.1.3; 2.2.1-2.2.2; 2.2.3; 3.5.1.5; and 3.5.1.6</u>	Date:	<u>October 26, 2007</u>

Does the section address the applicable regulations: Yes/No

Are there any technical deficiencies, changes in planning assumptions, or dependencies on concurrent reviews? Yes/No, Identify specific review area/topic in table below.

1. Review Area/Topic*	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews	
	2. Does COL section address the items required by regulation (refer to RG 1.206, Section C.IV.1)? (Yes/No)	3. Is COL section technically sufficient for this review area/ topic? (yes/no)**	4. Can the technical deficiency be resolved through the RAI process? (yes/no)***	5. If no, for either completeness or technical sufficiency, identify deficiency (ies). This information will be needed for technical review.	6. Is the identified technical deficiency related to a risk-significant SSC? (yes/no)****	7. Are the pre-baseline review schedule and estimated staff-hours appropriate? (yes/no)	8. For each no, identify the change (or basis for change).	9. Identify the total review time in staff-hours*****	10. Can the review of the area/topic be completed without the completion of a concurrent review? (yes/no)
2.1S.1.2	yes	no	yes	EAB distances for 16 cardinal directions					
2.1S.2.1	Yes	no	yes	Minimum distance given is wrong					
2.1S.3.1	yes	no	yes	Population distributions in tabular form					
2.1S.3.2	yes	no	yes	Population distribution in tabular form					
2.2S.2.5 and 2.2S3.1.2.1	yes	no	Yes	Amounts of chemicals (other than gasoline) and frequency of transport on FM521 for evaluation					
2.2S3.1.1.1	yes	no	yes	Discrepancy calculation of minimum distance due to explosion using RG 1.91 methodology					

Table 1: Safety Analysis Report Acceptance Review Results for STP ABWR COL

SER Section:	2.3.1	Technical Branch:	RSAC (Primary/Secondary)	Technical Reviewer:	Out of Scope
Branch Chief:	Charles Cox	SRP Section:	2.3.1	Date:	October 25, 2007

Does the section address the applicable regulations: Yes/No

Are there any technical deficiencies, changes in planning assumptions, or dependencies on concurrent reviews? Yes/No, Identify specific review area/topic in table below.

1. Review Area/Topic*	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews		
	2. Does COL section address the items required by regulation (refer to RG 1.206, Section C.IV.1)? (Yes/No)	3. Is COL section technically sufficient for this review area/topic? (yes/no)**	4. Can the technical deficiency be resolved through the RAI process? (yes/no)***	5. If no, for either completeness or technical sufficiency, identify deficiency (ies). This information will be needed for technical review.	6. Is the identified technical deficiency related to a risk-significant SSC)? (yes/no)****	7. Are the pre-baseline review schedule and estimated staff-hours appropriate? (yes/no)	8. For each no, identify the change (or basis for change).	9. Identify the total review time in staff-hours*****	10. Can the review of the area/topic be completed without the completion of a concurrent review? (yes/no)	11. For each no, identify which application (DCD or COLA) and section.
Potential influences from regional topography	Yes	No	Yes	The influence of the Gulf of Mexico on site meteorology has not been discussed		Yes		No change req'd	Yes	
Tornado frequency	No	No	Yes	The frequency of tornado occurrences has not been provided		Yes		No change req'd	Yes	
Weight of 48-hr PMWP	No	No	Yes	The weight of the 48-hr PMWP has not been provided		Yes		No change req'd	Yes	

Table 1: Safety Analysis Report Acceptance Review Results for STP ABWR COL

SER Section: 2.3.2	Technical Branch: RSAC (Primary/Secondary)	Technical Reviewer: [Redacted]
Branch Chief: Charles Cox	SRP Section: 2.3.2	Date: October 25, 2007

Does the section address the applicable regulations: Yes/No

Are there any technical deficiencies, changes in planning assumptions, or dependencies on concurrent reviews? Yes/No, Identify specific review area/topic in table below.

1. Review Area/Topic*	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule		Review Dependencies Among Concurrent Reviews			
	2. Does COL section address the items required by regulation (refer to RG 1.206, Section C.IV.1)? (Yes/No)	3. Is COL section technically sufficient for this review area/ topic? (yes/no)**	4. Can the technical deficiency be resolved through the RAI process? (yes/no)***	5. If no, for either completeness or technical sufficiency, identify deficiency (ies). This information will be needed for technical review.	6. Is the identified technical deficiency related to a risk-significant SSC)? (yes/no)****	7. Are the pre-baseline review schedule and estimated staff-hours appropriate? (yes/no)	8. For each no, identify the change (or basis for change).	9. Identify the total review time in staff-hours*****	10. Can the review of the area/topic be completed without the completion of a concurrent review? (yes/no)	11. For each no, identify which application (DCD or COLA) and section.
UHS plume impacts	Yes	No	Yes	The potential impacts of the UHS plume on plant design and operation has not been addressed		No	The SACTI cooling tower plume code will need to be executed. This was not included in the original staff-hr estimates.	Additional [Redacted] needed	Yes	

Table 1: Safety Analysis Report Acceptance Review Results for STP ABWR

Out of Scope

SER Section: 2.3.3	Technical Branch: RSAC (Primary/Secondary)	Technical Reviewer:
Branch Chief: Charles Cox	SRP Section: 2.3.3	Date: October 25, 2007

Does the section address the applicable regulations: Yes/No

Are there any technical deficiencies, changes in planning assumptions, or dependencies on concurrent reviews? Yes/No, Identify specific review area/topic in table below.

1. Review Area/Topic*	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews		
	2. Does COL section address the items required by regulation (refer to RG 1.206, Section C.IV.1)? (Yes/No)	3. Is COL section technically sufficient for this review area/ topic? (yes/no)**	4. Can the technical deficiency be resolved through the RAI process? (yes/no)***	5. If no, for either completeness or technical sufficiency, identify deficiency (ies). This information will be needed for technical review.	6. Is the identified technical deficiency related to a risk-significant SSC)? (yes/no)****	7. Are the pre-baseline review schedule and estimated staff-hours appropriate? (yes/no)	8. For each no, identify the change (or basis for change).	9. Identify the total review time in staff-hours*****	10. Can the review of the area/topic be completed without the completion of a concurrent review? (yes/no)	11. For each no, identify which application (DCD or COLA) and section.
Met system calibration & maintenance	Yes	No	Yes	More detail needs to be provided on the pre-op and operational met system calibration and maintenance activities		Yes		No change req'd	Yes	
Met system data processing	Yes	No	Yes	More detail needs to be provided on the pre-op and operational data processing activities		Yes		No change req'd	Yes	

Table 1: Safety Analysis Report Acceptance Review Results for STP ABWR

Out of Scope

SER Section:	2.3.3	Technical Branch:	RSAC (Primary/Secondary)	Technical Reviewer:	
Branch Chief:	Charles Cox	SRP Section:	2.3.3	Date:	October 25, 2007

Does the section address the applicable regulations: Yes/No

Are there any technical deficiencies, changes in planning assumptions, or dependencies on concurrent reviews? Yes/No, Identify specific review area/topic in table below.

1. Review Area/Topic*	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing			Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews			
	2. Does COL section address the items required by regulation (refer to RG 1.206, Section C.IV.1)? (Yes/No)	3. Is COL section technically sufficient for this review area/topic? (yes/no)**	4. Can the technical deficiency be resolved through the RAI process? (yes/no)***	5. If no, for either completeness or technical sufficiency, identify deficiency (ies). This information will be needed for technical review.	6. Is the identified technical deficiency related to a risk-significant SSC? (yes/no)****	7. Are the pre-baseline review schedule and estimated staff-hours appropriate? (yes/no)	8. For each no, identify the change (or basis for change).	9. Identify the total review time in staff-hours*****	10. Can the review of the area/topic be completed without the completion of a concurrent review? (yes/no)	11. For each no, identify which application (DCD or COLA) and section.
Met system calibration & maintenance	Yes	No	Yes	More detail needs to be provided on the pre-op and operational met system calibration and maintenance activities		Yes		No change req'd	Yes	
Met system data processing	Yes	No	Yes	More detail needs to be provided on the pre-op and operational data processing activities		Yes		No change req'd	Yes	

Table 1: Safety Analysis Report Acceptance Review Results for STP ABWR COL

SER Section: 2.3.3	Technical Branch: RSAC (Primary/Secondary)	Technical Reviewer: Out of Scope
Branch Chief: Charles Cox	SRP Section: 2.3.3	Date: October 25, 2007

Does the section address the applicable regulations: Yes/No

Are there any technical deficiencies, changes in planning assumptions, or dependencies on concurrent reviews? Yes/No, Identify specific review area/topic in table below.

1. Review Area/Topic*	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing			Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews			
	2. Docs COL section address the items required by regulation (refer to RG 1.206, Section C.IV.1)? (Yes/No)	3. Is COL section technically sufficient for this review area/ topic? (y/n)**	4. Can the technical deficiency be resolved through the RAI process? (yes/no)***	5. If no, for either completeness or technical sufficiency, identify deficiency (ies). This information will be needed for technical review.	6. Is the identified technical deficiency related to a risk-significant SSC)? (yes/no)****	7. Are the pre-baseline review schedule and estimated staff-hours appropriate? (yes/no)	8. For each no, identify the change (or basis for change).	9. Identify the total review time in staff-hours*****	10. Can the review of the area/topic be completed without the completion of a concurrent review? (yes/no)	11. For each no, identify which application (DCD or COLA) and section.
Met system calibration & maintenance	Yes	No	Yes	More detail needs to be provided on the pre-op and operational met system calibration and maintenance activities		Yes		No change req'd	Yes	
Met system data processing	Yes	No	Yes	More detail needs to be provided on the pre-op and operational data processing activities		Yes		No change req'd	Yes	

Table 1: Safety Analysis Report Acceptance Review Results for STP ABWR C

Out of Scope

SER Section: 2.3.4	Technical Branch: RSAC (Primary/Secondary)	Technical Reviewer:
Branch Chief: Charles Cox	SRP Section: 2.3.4	Date: October 25, 2007

Does the section address the applicable regulations: Yes/No

Are there any technical deficiencies, changes in planning assumptions, or dependencies on concurrent reviews? Yes/No, Identify specific review area/topic in table below.

1. Review Area/Topic*	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews		
	2. Does COL section address the items required by regulation (refer to RG 1.206, Section C.IV.1)? (Yes/No)	3. Is COL section technically sufficient for this review area/ topic? (yes/no)**	4. Can the technical deficiency be resolved through the RAI process? (yes/no)***	5. If no, for either completeness or technical sufficiency, identify deficiency (ies). This information will be needed for technical review.	6. Is the identified technical deficiency related to a risk-significant SSC)? (yes/no)****	7. Are the pre-baseline review schedule and estimated staff-hours appropriate? (yes/no)	8. For each no, identify the change (or basis for change).	9. Identify the total review time in staff-hours*****	10. Can the review of the area/topic be completed without the completion of a concurrent review? (yes/no)	11. For each no, identify which application (DCD or COLA) and section.
MCR impacts	Yes	No	Yes	The potential impacts of the MCR on X/Q estimates have not been addressed		Yes		No change req'd	Yes	
Control room x/q calcs	Yes	No	Yes	Not enough info has been provided to allow staff to perform its own calcs		Yes		No change req'd	Yes	

Table 1: Safety Analysis Report Acceptance Review Results for STP ABWR COL

SER Section: 2.3.5	Technical Branch: RSAC (Primary/Secondary)	Technical Reviewer: 4	Out of Scope
Branch Chief: Charles Cox	SRP Section: 2.3.5	Date: October 25, 2007	

Does the section address the applicable regulations: Yes/No

Are there any technical deficiencies, changes in planning assumptions, or dependencies on concurrent reviews? Yes/No, Identify specific review area/topic in table below.

1. Review Area/Topic*	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews		
	2. Does COL section address the items required by regulation (refer to RG 1.206, Section C.IV.1)? (Yes/No)	3. Is COL section technically sufficient for this review area/ topic? (yes/no)**	4. Can the technical deficiency be resolved through the RAI process? (yes/no)***	5. If no, for either completeness or technical sufficiency, identify deficiency (ies). This information will be needed for technical review.	6. Is the identified technical deficiency related to a risk-significant SSC)? (yes/no)****	7. Are the pre-baseline review schedule and estimated staff-hours appropriate? (yes/no)	8. For each no, identify the change (or basis for change).	9. Identify the total review time in staff-hours*****	10. Can the review of the area/topic be completed without the completion of a concurrent review? (yes/no)	11. For each no, identify which application (DCD or COLA) and section.
MCR impacts	Yes	No	Yes	The potential impacts of the MCR on X/Q and D/Q estimates have not been addressed		Yes		No change req'd	Yes	

Table 1: Safety Analysis Report Acceptance Review Results for STP ABWR COL

Out of Scope

SER Section:	6.5, 11.1, 15.6, 15.7.4	Technical Branch:	RSAC (Primary/Secondary)	Technical Reviewer:	
Branch Chief:	Charles Cox	SRP Section:	6.5, 11.1, 15.6, 15.7.4	Date:	October 25, 2007

Does the section address the applicable regulations: Yes/No

Are there any technical deficiencies, changes in planning assumptions, or dependencies on concurrent reviews? Yes/No, Identify specific review area/topic in table below.

1. Review Area/Topic*	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews		
	2. Does COL section address the items required by regulation (refer to RG 1.206, Section C.IV.1)? (Yes/No)	3. Is COL section technically sufficient for this review area/ topic? (yes/no)**	4. Can the technical deficiency be resolved through the RAI process? (yes/no)***	5. If no, for either completeness or technical sufficiency, identify deficiency (ies). This information will be needed for technical review.	6. Is the identified technical deficiency related to a risk-significant SSC)? (yes/no)****	7. Are the pre-baseline review schedule and estimated staff-hours appropriate? (yes/no)	8. For each no, identify the change (or basis for change).	9. Identify the total review time in staff-hours*****	10. Can the review of the area/topic be completed without the completion of a concurrent review? (yes/no)	11. For each no, identify which application (DCD or COLA) and section.
6.5 Fission Product Removal and Control System	Yes	Yes	N/A			Yes		No change req'd	Yes	
11.1 Source Terms	Yes	Yes	N/A			Yes		No change req'd	Yes	
15.6 Decrease in Reactor Coolant Inventory	Yes	Yes	N/A			Yes		No change req'd	Yes	
15.7.4 Fuel Handling Accident	Yes	Yes	N/A			Yes		No change req'd	Yes	

*Review Area/Topic: Item identified in RG 1.206 or the regulations; for a COLA referencing a DC, this includes COL information items and departures from the design certification.

**Technical Sufficiency: The application is compared against the SRP acceptance criteria. Note: New safety features, alternate regulatory compliance approaches, and/or deviations from DCs, should not be treated as deficiencies and factored into the basis for rejecting the application, unless staff determines that there is insufficient technical information associated with the respective item. These items are factored into confirmation of planning assumptions.

***Significant deficiencies are those review areas/topics which impact the staff's ability to begin the detailed technical review or complete its review within a predictable timeframe.

****DSRA will provide risk significance information at time of review, if available.

*****Identification of new review time is on a FSAR section basis and consistent with the review phases within the EPM. Changes from the pre-baseline review schedule and estimated hours should be on that basis.