



STATEMENT OF BASIS
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 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name: SCPSA - SANTEE COOPER WINYAH GENERATING STATION	Permit Writer: Fatina Ann Washburn Clark
Permit Number: TV-1140-0005	Date: 10/02/2014

DATE APPLICATION RECEIVED: June 30, 2011, revised November 27, 2013.

DATE OF LAST INSPECTION: June 25, 2013
 A comprehensive and CEM inspection was performed. No violations or abnormal observations were noted in the inspection report.

FACILITY DESCRIPTION

This facility consists of four coal-fired boilers and supporting equipment including coal handling and byproduct handling.

COLLOCATION DETERMINATION

A determination was made on September 9, 2005, as to whether American Gypsum would be considered to be collocated with the adjacent Santee Cooper Winyah Generating Station. This determination is documented in the September 9, 2005, Statement of Basis for Permit Number 1140-0061-CA.

PROJECT DESCRIPTION

Santee Cooper has requested renewal of their Title V operating permit. The previous TV operating permit was issued on November 9, 2006, became effective on January 1, 2007, and expired on December 31, 2011. The Department received Santee Cooper's TV renewal application on June 30, 2011 and granted an application shield, effective July 1, 2011.

PREVIOUS ACTIONS

Actions Taken During the Life of the Previous OP		
Date	C/P, x, TV Mod	Description
01/10/07	tv01	Administrative amendment to correct mission of freeze agent.
03/29/07	tv02	Minor modification to incorporate construction permit CL.
11/14/07	07x	Use of ILFC 1032 fuel additive.
03/10/08	tv03	Administrative amendment to revise emission unit numbering.
04/11/08	CO	Issued construction permit to install a dual flue gas conditions system for Units 3 and 4.
06/26/08	tv04	Minor modification to remove CAMR, add modification date for ESP2 and ESP4, and add ILFC 1032 to approved additives.
09/23/08	CP	Issued construction permit to upgrade the Unit 1 ESP.
10/15/08	tv05	Administrative amendment to correct NSPS reference in a condition.
04/01/09	tv06	Minor modification to revise acid rain program average plan.
10/22/09	CQ	Issued construction permit to add Chem-Mod system.
02/16/10	CQ-R1	Revised construction permit to add sorbent use rates.
10/18/10	CR	Construction permit to upgrade the Unit 3 ESP
06/10/11	08x	Alteration of used oil delivery and boiler firing system.
08/05/11	CQ-R2	Revised construction permit to allow continuous Chem-Mod use.
02/24/12	09x	Test use of mercury sorbents.

CHANGES

Changes Made During This Review	
No.	Description
1	Incorporated the following requests received after the renewal application: <ol style="list-style-type: none"> 1. Minor Modification - Incorporate Construction Permit CP 2. Minor Modification - Incorporate Construction Permit CR 3. 502(b)(10) - Used oil storage modification 4. Administrative Amendment - Update Environmental Contact 5. Minor Modification - Used Oil Compliance Proposal Incorporation



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Changes Made During This Review

No.	Description
	6. Minor Modification - Incorporate Construction Permit CQ
2	<p>Equipment/Control Devices Added:</p> <ol style="list-style-type: none"> 1. L18, L19 - These were already present at the facility but were not listed. 2. CD-CDC1 through CD-CDC3 – These are dust collectors installed to control PM from the coal crushers. 3. CD-L18, CD-L19A, CD-L19B - These were already present at the facility but were not listed. 4. G3-G6 - These are existing sources that were not previously listed in the permit. 5. Silo 1, Silo 2, DB1-DB5, Pugmills, CD-BVS1, CD-BVS2, CD-BV1-CD-BV5 - These sources are from construction permits CQ.
3	<p>Equipment/Control Devices Removed:</p> <ol style="list-style-type: none"> 1. P18, P25, P35, P45 - These are coal pulverizers which pulverize the coal prior to injection into the boilers. They are fully enclosed and all PM generated from the coal pulverizing goes into the boilers as fuel. As they do not have emissions, they will be removed from the permit. 2. L3 - Drop point no longer exists 3. L14, L15 – These units were never constructed. 4. CBO Process, P70-P76, CD-DC2 through CD-DC7 – This equipment has been transferred to another company.
4	<p>Equipment/Control Devices Modified:</p> <ol style="list-style-type: none"> 1. EU 09 - F71, P77, P78, F72, P79, P80, P81, P82, F73 - This is the former synfuel processing system. Per the application, the facility is requesting this equipment be removed from the permit. These sources are currently inactive but they remain on site for future potential use. As such, these sources will remain on the permit with the only condition being that they cannot be used until any applicable construction permitting has been addressed. 2. EU 05 - Description is changed from "Coal Handling System" to "Coal Unloading System."
5	<p>Insignificant Activities List Changes:</p> <p>Added:</p> <ol style="list-style-type: none"> 1. T01, T02, T03, G03, G04 - These are existing sources that were not previously listed in the permit. <p>Removed:</p> <ol style="list-style-type: none"> 1. P64-P68 - Coal samplers are being removed due to infrequent operation and extremely low emissions and to be consistent with other plants. 2. F02, F50, F51, P52, P54, P55, P57, P58, P60, P61, P62, P62, P63 - These sources are part of the old limestone handling system and have been removed from operation (7/13/12 email) 3. T04 - Still present but inactive. 4. SFT1-SFT3 - This is also part of the former synfuel processing system. The source is present but inactive <p>Modified:</p> <ol style="list-style-type: none"> 1. F60 is being broken out into F60a and F60b (7/13/12 email)
6	<p>Condition Changes:</p> <ol style="list-style-type: none"> 1. The previous permits gave a Std. 1 PM limit of 0.38 lb/MMBTU, which is only applicable at the maximum firing rate. The limit changes with the firing rate above 1,300 MMBTU/hr. The limit in the permit will be revised to follow the formula instead of the rate at one specific firing rate.



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Changes Made During This Review

No.	Description
	2. PSD PM, NO _x , Opacity and SO ₂ limits are included in this renewal. See Std. 7 discussion. 3. Standard 1, SO ₂ limits for Units 2, 3, & 4 will be included in this renewal. 4. Included the Standard 4 requirements for the Flyash handling equipment. See Std. 4 discussion. 5. P06 and P07 are no longer subject to NSPS Subpart Y. See NSPS Subpart Y discussion. 6. Deleted intermediate Consent Decree conditions and conditions associated with Construction Permit 1140-0005-CG in which the reporting periods have expired.

SOURCE TEST REQUIREMENTS

Source Test Requirements			
Source	Pollutant	Frequency	Citation
B01/CD-ESP1	PM	Annual\Biennial	Consent Agreement
B01/CD-ESP1	PM	Semiannual\Annual	S.C. Regulation 61-62.5, Standard No. 1
B02/CD-ESP2	PM	Annual\Biennial	Consent Agreement
B02/CD-ESP2	PM	Semiannual\Annual	S.C. Regulation 61-62.5, Standard No. 1
B02/CD-ESP2	PM	Annual	S.C. Regulation 61-62.5, Standard No. 7
B03/CD-ESP3	PM	Annual	S.C. Regulation 61-62.5, Standard No. 7
B03/CD-ESP3	PM	Annual\Biennial	Consent Agreement
B03/CD-ESP3	PM	Semiannual\Annual	S.C. Regulation 61-62.5, Standard No. 1
B04/CD-ESP4	PM	Annual	S.C. Regulation 61-62.5, Standard No. 7
B04/CD-ESP4	PM	Annual\Biennial	Consent Agreement
B04/CD-ESP4	PM	Semiannual\Annual	S.C. Regulation 61-62.5, Standard No. 1

FACILITY COMMENTS ON DRAFT TITLE V SUBMITTED MAY 17, 2013 (BAQ responses in italicized text)

Topic	Condition	Santee Cooper's Comments
Clarification	Statement of Basis	Page 3 of 45: Change No.4 should list F72 instead of P72 as synfuel processing equipment. <i>Corrected.</i>
Clarification	Statement of Basis	Page 36 of 45: The Standard 4 process boundaries should not include P18, P25, P35, or P45, L3, or pugmills, which have been removed from the permit. <i>Removed P18, P25, P35, P45, and L3 from the Standard 4 limits. The pugmills remain as they have not been removed.</i>
Clarification	Throughout	Please replace all references to "waste oil" with "used oil". <i>All references were changed with the exception of Condition 5.D.4 as it is in the title of the original document.</i>
Clarification	5.C.06a	P19 should be cross conveyor E-2 instead of E-3 as discussed in the Title V renewal application. <i>This error has been corrected in the permit, but also needs to be corrected in the application.</i>
Clarification	Statement of Basis	Page 34 of 45: The Standard 1 table lists PM and SO ₂ limits in terms of lbs/hr. Please explain why it is necessary to convert these limits from lb/MMBtu to lbs/hr. <i>The lb/hr calculation is for demonstration purposes only to show that the calculated emissions using the respective control devices are capable of achieving the limits.</i>



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Topic	Condition	Santee Cooper's Comments
Clarification	01.5, 02.7, 03.9, 04.9	DHEC should establish an averaging period for Standard 1 limit of 3.5 lb/MMBTU. Since Standard 1 does not specify the averaging period, Santee Cooper suggests a 24-hr block averaging period in order to be consistent with the 2.85 lb/MMBTU limit from Standard 7. <i>The averaging periods for Standard 1 have been added to the draft permit.</i>
Clarification	02.8	In order to be consistent with CD requirements B02 NOx Consent Decree 30 day rolling average limit should be 0.120 not 0.110 <i>Corrected.</i>
Clarification	02.10, 03.12, 04.12	Correct typo so that that the language reads as "one six-minute period," instead of "one-six period." Add the following language: "This opacity standard applies at all times except during periods of startup, shutdown and shutdown, as provided in the regulations codified at 40 C.F.R. Part 60, Subpart D." <i>Corrected and revised to reflect the exceptions are per 40 CFR 60.11</i>
Clarification	03.1, 04.1	Std 7. PM limit of 0.1 lb/MMBTU specifies 3hr rolling average. However, compliance is demonstrated by periodic source tests. Santee Cooper suggests replacing "(3-hour rolling average)" to read as "(3-hour average measured by Source Testing specified below)" <i>Revised.</i>
Clarification	03.6, 04.6	Previous permit specified "3 hour block average" for 0.52 lb/MMBTU SO2 limit (Std. 7). New permit specifies rolling average. Santee Cooper suggests replacing "(3-hour rolling average)" with "(3-hour block average)" given that was the averaging time originally set for this PSD limit for SO ₂ . <i>Corrected to 3 hour block average.</i>
Clarification	03.14, 04.14	03.14 and 04.14 should be identical conditions but they are slightly different. <i>Corrected so that both conditions are identical.</i>
Clarification	10.2, 10.4, 10.5	NSPS Subpart OOO does not apply to storage piles and only applies to enclosed truck unloading. L16-17 should not be subject to the 10% opacity limit. <i>Removed L16, L17 from the condition.</i> Also, Santee Cooper requests clarification on the difference in opacity limits and the ongoing monitoring requirements for the applicable limestone handling sources. <i>The regulation specifies different opacity limits for point sources and fugitive sources. Since the emissions from this Unit ID contain both types of sources, there are two limits depending on the equipment IDs. There are no ongoing monitoring requirements for these sources per the regulation.</i>
Clarification	5.D.3	Condition 5.D.3 is listed twice. Once for additives and once for Waste Material Correct SCSPA to be SCPSA. <i>Renumbered and corrected typo.</i>
Clarification	5.D.5	Santee Cooper requests the regulatory citations for this requirement. <i>This condition was removed from the permit as the Consent Decree outlines the requirements.</i>
Clarification	7.C	NESHAP ZZZZ identifies the two Emergency Generators (G01 and G02). DHEC should also add two fire pumps (G03 and G04) to this list as well as to the Insignificant Activities List in attachment B. <i>Added to the draft permit, but this equipment also needs to be listed in the application.</i>
Clarification	5.B.8	Statement of Basis states that gypsum process is not subject to NSPS Subpart OOO. Please remove Unit



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Topic	Condition	Santee Cooper's Comments
		ID 11 from Condition 5.B.8 <i>Removed from condition.</i>
Consent Decree	01.4, 01.6, 02.5, 02.8, 03.7, 03.10, 04.7, 04.10	These conditions state, "The owner/operator shall submit semi-annual reports of (SO ₂ NO _x) CEMS output, that meet the requirements as required by the Consent Decree." In lieu of this draft language, Santee Cooper proposes the following language as a more accurate representation of the consent decree requirements: "The owner/operator shall submit semi-annual reports of the 30 day rolling average emissions as well as the System Wide 12-month rolling emissions as required by the Consent Decree. At such time that the Consent Decree expires the NO _x and SO ₂ CEMS data previously reported via the Consent Decree semi-annual report will be included with the semi-annual Title V reporting." <i>Revised accordingly in all applicable conditions.</i>
Material Handling	06-Coal Handling System #1 07-Coal Handling System #2 Equipment Tables	The equipment tables for Unit ID 06 and 07 require revisions: P12 and P13 are controlled by CDC-1 P21 is controlled by CDC-2 P31 and P41 are controlled by CDC-3 CDC-4 and CDC-5 do not exist. This was an error in the Title V permit application. Revise Conditions 06.2, 06.4, 07.2, and 07.4 accordingly per the updated drawing that has been provided to SCDHEC. <i>Corrected draft permit to reflect these changes, but the application also needs to be revised.</i>
NSPS - Liquid fuel SO ₂	02.6, 03.8, 04.8	There is no need to apply the NSPS limit for liquid fuel for Units 3 and 4 given that the Subpart D regulations provide an exemption from the SO ₂ limit during startups, shutdowns, and malfunctions. Santee Cooper requests further evaluation of the applicability of the NSPS limit for liquid fuel as it pertains to burning small quantities of used oil at Winyah 2 for energy recovery. <i>40 CFR 60.43(a) provides limits for both liquid and solid fuel. The provisions are for <u>all</u> fossil fuels burned and does not exclude periods of startups, shutdowns, and malfunctions. The limits apply at all times. 40 CFR 60.43(d) provides an option for the facility to petition for the alternative limit set forth in 40 CFR <u>60.43Da(i)(3)</u>. Santee Cooper has requested this alternative and the permit reflects the alternative limit.</i>
NSPS - Liquid fuel NO _x	02.9, 03.11, 04.11	There is no need to apply the NSPS limit for liquid fuel for Units 3 and 4 given that the Subpart D regulations provide an exemption from the NO _x limit during startups, shutdowns, and malfunctions. Santee Cooper requests further evaluation of the applicability of the NSPS limit for liquid fuel as it pertains to burning small quantities of used oil at Winyah 2 for energy recovery. <i>40 CFR 60.44(a) provides limits for both liquid and solid fuel. The provisions are for <u>all</u> fossil fuels burned and does not exclude periods of startups, shutdowns, and malfunctions. The limits apply at all times. 40 CFR 60.44(e) provides an option for the facility to petition for the alternative limit set forth in 40 CFR <u>60.44Da(e)(3)</u>. Santee Cooper has requested this alternative and the permit reflects the alternative limit.</i>
Opacity	01.7 5.D.7	Previous permit specified that B01 is subject to two opacity limits. The first is a 40% opacity limit in accordance with SC Regulation 61-62.5, Standard 1, Section 1 B. The second is a more stringent opacity limit of 35% -- which has always applied since the unit began operation. Santee Cooper and DHEC are researching the permitting history to determine the appropriate limit. An appropriate CAM excursion level will be determined based on the resolution. <i>DHEC researched the regulation promulgated in 1972 which defines an existing source as one "existing</i>



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Topic	Condition	Santee Cooper's Comments
		<i>or under construction prior to February 11, 1971." Santee Cooper presented a contract, signed September 24, 1968, for the steam turbine which required a three year lead time for delivery. A historical review of the state regulations first mentions the definition of "commence" and "construction" in 1980, and a definition of "continuous program of physical on-site construction" in May of 1990. The plain language definition of construct or build is "to make or form by combining or arranging parts or elements" The contract provided by Santee Cooper showed a release to engineering and manufacturing occurred prior to May of 1970, therefore, the plain language definition was met prior to February 11, 1971 and the unit is considered an existing unit. Documentation in the DHEC permit files show a more stringent opacity limit of 35% was placed on the unit. This limit shall remain with this renewal.</i>
Used Oil/Oily Debris	5.D.3 5.D.4	Please reference Santee Cooper's used-oil monitoring plan dated October 31, 2012 for recordkeeping and reporting requirements. Santee Cooper and DHEC will continue to evaluate the applicability of CISWI to the combustion of Used Oil at Winyah Unit 1 and 2. <i>A condition was added addressing the potential applicability of CISWI in the future.</i>
Visual Inspection	05.1, 05.2, 06.1, 06.5, 07.1, 07.5, 10.1, 10.3	Conditions pertaining to Standard 4 PM and Opacity require, "The owner/operator shall perform a visual inspection on each piece of equipment, while the equipment is operating , on a semi-annual basis." (Emphasis added.) With more than 50 separate pieces of equipment to inspect, it will be very difficult, if not impossible, to ensure that each piece is in operation when the visual inspection is conducted. To address this concern, Santee Cooper proposes the following language: "The owner/operator shall perform a visual inspection on each piece of equipment on a semi-annual basis while material handling system is in operation." <i>Revised all applicable conditions accordingly.</i>

FACILITY COMMENTS ON DRAFT TITLE V SUBMITTED November 25, 2013 (BAQ responses in italicized text)

Topic	Condition	Santee Cooper's Comments
Opacity Statement of Basis:	Page 4 of 48	Update Condition Changes Section number 4 to reflect 35% opacity for Unit 1. <i>Updated.</i>
Opacity Statement of Basis	Page 37 or 48	Update Standard 1 Comments to reflect 35% opacity for Unit 1. <i>Updated.</i>
Standard 7 NOx and SO2	02.4, 03.12, 04.12	Winyah Units 2, 3 & 4 are subject to NSPS Subpart D. Santee Cooper has opted to take the NOx and SO2 limits specified in NSPS Subpart Da during the application process. <i>Conditions currently reflect this option.</i> Condition 02.4 contains a 1.2 lb/MMBTU SO2 limit. Santee Cooper requests clarification as to why this limit is listed as a Standard 7 limit. <i>SO2 limits were issued in the final determination, dated February 28, 1978, for Winyah II. These limits were revised and incorporated in 1980. Since it was outlined in the final determination for PSD (Standard 7), it is considered a Standard 7 limit.</i> Conditions 03.12 and 04.12 contain a 0.7 lb/MMBTU NOx limit. Santee Cooper requests clarification as to why this limit is listed as a Standard 7 limit.



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Topic	Condition	Santee Cooper's Comments
		<i>NOx limits were issued in the final determination, dated February 28, 1978, for Winyah II, II, and IV. Since it was outlined in the final determination for PSD (Standard 7), it is considered a Standard 7 limit. A condition has been added for Winyah II as it was inadvertently omitted.</i>
Typographical Error	Page 49 of 89	Delete condition 3.12 – this condition should not be in this section of the permit. <i>Deleted.</i>
Modeled Emission Rates	Attachment A	There appears to be 2 of each table in this attachment. <i>Corrected.</i> Also, Santee Cooper has made revisions to the emission calculations contained in the revised permit application dated November 2013. Santee Cooper does not anticipate that any of these emission calculation revisions will impact modeling. <i>Received revised application on November 27, 2013. Any modeling impacts have been addressed.</i>

PUBLIC NOTICE

This Title V Permit will undergo a 30-day public notice period and a 45-day EPA comment period in accordance with SC Regulation 61-62.1, Section II(N). This permit was placed in the Georgetown Times newspaper on February 7, 2014. The comment period was open from February 7, 2014 to March 8, 2014 and was placed on the BAQ website during that time period. Comments were received during the comment period and will be addressed in the Reponse to Comments document.

The following changes were made to the permit after the public notice period:

1. South Carolina Regulation 61-62.5, Standard 1, was revised on June 27, 2014, and the SO₂ limits were revised in this permit after the public notice period from 3.5 lb/MMBTU to 2.3 lb/MMBTU.
2. The NESHAP placeholder language was revised for clarification based on comments received during the public notice period.

The draft permit, draft statement of basis, and response to comments was sent to EPA for their 45 day review on September 22, 2014. EPA stated they had no comments.

ADDITIONAL PUBLIC PARTICIPATION: N/A

EMISSIONS

Emissions rates are taken from the renewal application, as amended. Factors and formulas were checked.

Note that the GHG emissions from sulfur hexafluoride gas in the electrical transmission equipment were not included in the application as the Mandatory Greenhouse Gas Reporting (40 CFR 98), Subpart DD - Electrical Transmission And Distribution Equipment Use did not require SF₆ emission reports until September 2012. This was after the TV application renewal was required to be submitted. Since the facility is major for greenhouse gases and no restrictions have been requested, SF₆ emissions will be required at the next construction permit or operating permit major modification or renewal.



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C-1. Summary of Facility-Wide Criteria Air Pollutant Emissions

Table C-1.1 Summary of Facility-Wide Criteria Air Pollutant Emissions ⁽¹⁾

Unit ID	Description	PM (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	NO _x (tpy)	SO ₂ (tpy)	CO (tpy)	VOC (tpy)	H ₂ SO ₄ (tpy)	CO _{2e} (ton/yr)
01	Unit 1	349.52	349.52	349.52	1,165.08	6,058.42	388.36	59.03	433.94	2,412,641
02	Unit 2	349.52	349.52	349.52	1,398.10	6,058.42	388.36	59.03	433.94	2,412,641
03	Unit 3	349.52	349.52	349.52	1,398.10	4,996.00	388.36	59.03	433.94	2,412,641
04	Unit 4	349.52	349.52	349.52	1,398.10	4,597.00	388.36	59.03	433.94	2,412,641
03/04	Unit 3 & 4 Fly Ash & CBO	8.53	2.99	1.36						
05	Coal Handling System	62.29	18.23	2.25						
06	Coal Handling System #1	2.52	1.14	0.25						
07	Coal Handling System #2	12.08	3.83	3.35						
10	Limestone Handling System	14.89	4.91	2.35						
11	Gypsum Handling System	3.78	1.79	0.27						
12	ChemMod System	2.89E-01	1.01E-01	4.60E-02						
IA	Insignificant Activity Summary	8.17	3.12	0.53				0.11		
Total		1,510.63	1,434.20	1,408.50	5,359.37	21,709.83	1,553.44	236.23	1,735.76	9,650,563

⁽¹⁾ Note that there is some discontinuity in the relative magnitudes of emissions across pollutants due to the variation in calculation methodologies (e.g., permit limits, AP-42, site-specific data, mass balance). Detailed calculations outlining the methodol

Note: These facility wide emissions are controlled emissions.



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C-1. Summary of Facility-Wide Criteria Air Pollutant Emissions

Table C-1.2 Summary of Facility-Wide Criteria Air Pollutant Emissions ⁽¹⁾

Pollutant	HAP/TAP/ Other (H/T/O)	Unit 01 Emissions (tpy)	Unit 02 Emissions (tpy)	Unit 03 Emissions (tpy)	Unit 04 Emissions (tpy)	Facility Total (tpy)
	1,1,1-Trichloroethane	H	1.01E-02	1.01E-02	1.01E-02	1.01E-02
2,4-Dinitrotoluene	H	1.42E-04	1.42E-04	1.42E-04	1.42E-04	5.67E-04
2-Chloroacetophenone	H	3.55E-03	3.55E-03	3.55E-03	3.55E-03	1.42E-02
5-Methyl chrysene	H	1.11E-05	1.11E-05	1.11E-05	1.11E-05	4.46E-05
Acenaphthene	H	2.58E-04	2.58E-04	2.58E-04	2.58E-04	1.03E-03
Acenaphthylene	H	1.27E-04	1.27E-04	1.27E-04	1.27E-04	5.07E-04
Acetaldehyde	H	2.89E-01	2.89E-01	2.89E-01	2.89E-01	1.15E+00
Acetophenone	H	7.60E-03	7.60E-03	7.60E-03	7.60E-03	3.04E-02
Acrolein	H	1.47E-01	1.47E-01	1.47E-01	1.47E-01	5.88E-01
Anthracene	H	1.06E-04	1.06E-04	1.06E-04	1.06E-04	4.26E-04
Antimony	H	9.12E-03	9.12E-03	8.16E-03	8.16E-03	3.45E-02
Arsenic	H	2.08E-01	2.08E-01	1.86E-01	1.86E-01	7.88E-01
Benzene	H	6.59E-01	6.59E-01	6.59E-01	6.59E-01	2.63E+00
Benzo(a)anthracene	H	4.05E-05	4.05E-05	4.05E-05	4.05E-05	1.62E-04
Benzo(a)pyrene	H	1.92E-05	1.92E-05	1.92E-05	1.92E-05	7.70E-05
Benzo(b,j,k)fluoranthene	H	5.57E-05	5.57E-05	5.57E-05	5.57E-05	2.23E-04
Benzo(g,h,i)perylene	H	1.37E-05	1.37E-05	1.37E-05	1.37E-05	5.47E-05
Benzyl chloride	H	3.55E-01	3.55E-01	3.55E-01	3.55E-01	1.42E+00
Beryllium	H	1.06E-02	1.06E-02	9.83E-03	9.83E-03	4.09E-02
Biphenyl	H	8.61E-04	8.61E-04	8.61E-04	8.61E-04	3.44E-03
Bis(2-ethylhexyl)phthalate (DEHP)	H	3.70E-02	3.70E-02	3.70E-02	3.70E-02	1.48E-01
Bromoform	H	1.98E-02	1.98E-02	1.98E-02	1.98E-02	7.90E-02
Cadmium	H	2.58E-02	2.58E-02	2.45E-02	2.45E-02	1.01E-01
Carbon disulfide	H	6.59E-02	6.59E-02	6.59E-02	6.59E-02	2.63E-01
Chlorobenzene	H	1.11E-02	1.11E-02	1.11E-02	1.11E-02	4.46E-02
Chloroform	H	2.99E-02	2.99E-02	2.99E-02	2.99E-02	1.20E-01
Chromium	H	1.32E-01	1.32E-01	1.63E-01	1.63E-01	5.90E-01
Chromium (VI)	H	4.00E-02	4.00E-02	1.63E-01	1.63E-01	4.06E-01
Chrysene	H	5.07E-05	5.07E-05	5.07E-05	5.07E-05	2.03E-04
Cobalt	H	5.07E-02	5.07E-02	4.66E-02	4.66E-02	1.95E-01
Cumene	H	2.68E-03	2.68E-03	2.68E-03	2.68E-03	1.07E-02
Cyanide	H	1.27E+00	1.27E+00	1.27E+00	1.27E+00	5.07E+00
Dimethyl sulfate	H	2.43E-02	2.43E-02	2.43E-02	2.43E-02	9.73E-02
Total Dioxins	H	7.60E-07	7.60E-07	7.60E-07	7.60E-07	3.04E-06
Ethyl benzene	H	4.76E-02	4.76E-02	4.76E-02	4.76E-02	1.90E-01
Ethyl chloride	H	2.13E-02	2.13E-02	2.13E-02	2.13E-02	8.51E-02
Ethylene dibromide	H	6.08E-04	6.08E-04	6.08E-04	6.08E-04	2.43E-03
Ethylene dichloride	H	2.03E-02	2.03E-02	2.03E-02	2.03E-02	8.10E-02
Fluoranthene	H	3.60E-04	3.60E-04	3.60E-04	3.60E-04	1.44E-03
Fluorene	H	4.61E-04	4.61E-04	4.61E-04	4.61E-04	1.84E-03
Formaldehyde	H	1.22E-01	1.22E-01	1.22E-01	1.22E-01	4.86E-01
Total Furans	H	9.73E-07	9.73E-07	9.73E-07	9.73E-07	3.89E-06
HCl	H	3.04E+01	3.04E+01	2.80E+01	2.80E+01	1.17E+02
Hexane	H	3.39E-02	3.39E-02	3.39E-02	3.39E-02	1.36E-01
HF	H	6.84E+00	6.84E+00	3.50E+00	3.50E+00	2.07E+01
Indeno(1,2,3-cd)pyrene	H	3.09E-05	3.09E-05	3.09E-05	3.09E-05	1.24E-04
Isophorone	H	2.94E-01	2.94E-01	2.94E-01	2.94E-01	1.18E+00
Lead	H	2.13E-01	2.13E-01	1.97E-01	1.97E-01	8.19E-01
Manganese	H	2.48E-01	2.48E-01	2.33E-01	2.33E-01	9.62E-01
Mercury	H	4.20E-02	4.20E-02	4.19E-02	4.19E-02	1.68E-01
Methyl bromide	H	8.10E-02	8.10E-02	8.10E-02	8.10E-02	3.24E-01
Methyl chloride	H	2.68E-01	2.68E-01	2.68E-01	2.68E-01	1.07E+00
Methyl ethyl ketone	T	1.98E-01	1.98E-01	1.98E-01	1.98E-01	7.90E-01
Methyl hydrazine	H	8.61E-02	8.61E-02	8.61E-02	8.61E-02	3.44E-01
Methyl methacrylate	H	1.01E-02	1.01E-02	1.01E-02	1.01E-02	4.05E-02
Methyl tert butyl ether	O	1.77E-02	1.77E-02	1.77E-02	1.77E-02	7.09E-02
Methylene chloride	O	1.47E-01	1.47E-01	1.47E-01	1.47E-01	5.88E-01
Naphthalene	H	6.59E-03	6.59E-03	6.59E-03	6.59E-03	2.63E-02
Nickel	H	1.42E-01	1.42E-01	1.28E-01	1.28E-01	5.40E-01
Phenanthrene	H	1.37E-03	1.37E-03	1.37E-03	1.37E-03	5.47E-03
Phenol	H	8.10E-03	8.10E-03	8.10E-03	8.10E-03	3.24E-02
Propionaldehyde	H	1.92E-01	1.92E-01	1.92E-01	1.92E-01	7.70E-01
Pyrene	H	1.67E-04	1.67E-04	1.67E-04	1.67E-04	6.69E-04
Selenium	H	6.59E-01	6.59E-01	6.06E-01	6.06E-01	2.53E+00
Styrene	O	1.27E-02	1.27E-02	1.27E-02	1.27E-02	5.07E-02
Tetrachloroethylene	H	2.18E-02	2.18E-02	2.18E-02	2.18E-02	8.71E-02
Toluene	H	1.22E-01	1.22E-01	1.22E-01	1.22E-01	4.86E-01
Vinyl acetate	H	3.85E-03	3.85E-03	3.85E-03	3.85E-03	1.54E-02
Xylenes	H	1.87E-02	1.87E-02	1.87E-02	1.87E-02	7.50E-02
Total HAP						161.71

⁽¹⁾ Emissions are calculated based on AP-42 emission factors and are not site-specific. Emissions of condensable PM species calculated based on AP-42 emission factors may exceed calculated condensable PM emissions, which are limited by the consent decree.



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C-2. Boiler Emission Calculations

Table C-2.1 Boiler GHG Emission Calculations

FUEL:		COAL				
HEAT INPUT Units 01 and 04 (MMBtu/hr):⁽¹⁾		2,660				
HOURS OF OPERATION (hr/yr):		8,760				
CH₄ GLOBAL WARMING POTENTIAL:⁽²⁾		21				
N₂O GLOBAL WARMING POTENTIAL:⁽²⁾		310				
Pollutant	Emission Factors ⁽²⁾	Emission Factor Units	Unit 01 Emissions (ton/yr)	Unit 02 Emissions (ton/yr)	Unit 03 Emissions (ton/yr)	Unit 04 Emissions (ton/yr)
CO ₂	93.4	kg/MMBtu	2,394,006	2,394,006	2,394,006	2,394,006
CH ₄	1.10E-02	kg/MMBtu	282	282	282	282
N ₂ O	1.60E-03	kg/MMBtu	41	41	41	41
Total CO_{2e}			2,412,641	2,412,641	2,412,641	2,412,641

⁽¹⁾ From Title V permit

⁽²⁾ Emission factors and global warming potentials from Subpart C of the GHG Mandatory Reporting Rule in 40 CFR 98.

PROJECT REGULATORY APPLICABILITY REVIEW

Regulation	Applicable		Comments
	Yes	No	
June 24, 2004 Consent Decree: A Consent Decree, effective June 24, 2004, between the Department, US EPA, and Santee Cooper, laid out specific requirements and emission limits that would become effective on certain dates or after the start-up of certain equipment. One requirement is system-wide emission limits; system-wide is defined as Winyah Units 1-4, Cross Units 1-4, Grainger Units 1-2, and Jefferies Units 3-4. The requirements and limits have effective dates and/or other triggering events. Only the current and any future limits are shown below.			
Additional requirements, including how the control devices will be used, are listed in the permit.			
Source	Pollutant		Limit
Units 1, 2, 3, 4 (EU IDs 01, 02, 03, 04)	PM		0.030 lb/MMBTU (Per Source Test)
Units 1, 2 (EU IDs 01, 02)	SO ₂		95% Removal Efficiency
Units 3, 4 (EU IDs 03, 04)	SO ₂		90% Removal Efficiency
System Wide	SO ₂		0.50 lb/MMBTU (12-Month Rolling Sum)
			65,000 tons (12-Month Rolling Sum)
Unit 1 (EU ID 01)	NO _x		0.100 lb/MMBTU (30-Day Rolling Sum)
Units 2, 3, 4 (EU IDs 02, 03, 04)	NO _x		0.120 lb/MMBTU (30-Day Rolling Sum)
System Wide	NO _x		0.150 lb/MMBTU (12-Month Rolling Sum)
			20,000 tons (12-Month Rolling Sum)
South Carolina Clean Air Mercury Rule Memorandum of Agreement: Following vacatur of the Federal Clean Air Mercury Rule, the Department and the South Carolina electric utilities entered into a voluntary memorandum of agreement on December 1, 2008 to define tasks and procedures to continue mercury monitoring and testing. For this specific station, Santee Cooper agreed to annually test Unit 1 for Hg and to install and operate a mercury emissions monitoring system on one of the Unit 2, 3, or 4 boilers. Results from the mercury emissions monitoring system will be correlated to account for emissions from the non monitored units of Units 2, 3, or 4.			
Section II(E): Synthetic Minor		X	This facility does not currently have any synthetic minor limits.
Section II(G): Conditional Major		X	This is a Title V facility.
Standard 1: Fuel Burning Operations	X		See Comments Below



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Regulation	Applicable		Comments
	Yes	No	

Standard 1 Comments: The four boilers are subject to Standard 1 as they are fuel burning sources as defined in 62.1.

This regulation has different opacity limits for sources “constructed” before 2/11/1971 (40%) and those constructed on or after 2/11/1971 (20%). DHEC researched the regulation promulgated in 1972 which defines an existing source as one “existing or under construction prior to February 11, 1971.” Santee Cooper presented a contract, signed September 24, 1968, for the Unit 1 steam turbine which required a three year lead time for delivery. A historical review of the state regulations first mentions the definition of “commence” and “construction” in 1980, and a definition of "continuous program of physical on-site construction" in May of 1990. The plain language definition of construct or build is “to make or form by combining or arranging parts or elements” The contract provided by Santee Cooper showed a release to engineering and manufacturing occurred prior to May of 1970, therefore, the plain language definition was met prior to February 11, 1971 and Unit 1 is considered an existing unit. Documentation in the DHEC permit files show a more stringent opacity limit of 35% was placed on Unit 1. This limit shall remain with this renewal.

Units 2 through 4 are subject to a 20% opacity limit as they were constructed after 2/11/1971 (Section I) and all units are subject to a 2.3 lb/MMBTU SO₂ limit. A PM limit of 0.6 lb/MMBTU is applied when a boiler is operating below 1,300 MMBTU/hr and a PM limit based on the equation in Section IIA when operating at or above 1,300 MMBTU/hr. All four boilers must have a COMs unit installed and provide semi-annual reports (Section IV).

The limits based on the nominal firing rate, calculated per the equation in Standard 1, and associated emissions are shown below:

Source	Nominal Rating (MMBTU/hr)	PM Limit (lb/MMBTU)	PM Limit (lb/hr)	SO ₂ Limit (lb/hr)@2.3 lb/MMBTU	Controlled Rates (lb/hr)		Monitoring
					PM	SO ₂	
Unit 1	2,660	0.381	1,012.7	6,118	79.80	1,330	*
Unit 2	2,660	0.381	1,012.7	6,118	79.80	1,330	*
Unit 3	2,660	0.381	1,012.7	6,118	79.80	1,330	*
Unit 4	2,660	0.381	1,012.7	6,118	79.80	1,330	*

The controlled rates are based on the consent decree limits and demonstrate that the required controls are protective of the limits. Uncontrolled rates are not available as they are not known and the control devices are required to be online when the boilers are operating.

*Section VI - Period Testing, requires these sources to conduct source tests every two years or as required by permit conditions. The Department has previously decided to require source testing on a semi-annual frequency to insure compliance. There is a provision to reduce the frequency to annually after having demonstrated consistent compliance and this provision continues in this permit.

Standard 2: Ambient Air Quality Standards	X		This facility has demonstrated compliance through air dispersion modeling; see modeling summary dated March 14, 2013.
Standard 3: Waste Combustion/Reduction (state only)	X		See Comments Below



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Regulation	Applicable		Comments
	Yes	No	
<p>Standard 3 Comments: Units 1 & 2 boilers are subject as they have permission to combust used oil collected through the "Give Oil For Energy Recovery" program. This standard applies nickel, cadmium, chromium, arsenic, lead, and hydrochloric acid (HCl) emission limits while combusting used oil (Section III(J)(1)).</p> <p>The facility submitted a used oil compliance methodology and <u>Standard Operating Procedures for Sampling, Compositing, Analysis, and Reporting Used Oil at Winyah Generating Station</u> (see email dated 11/15/2012). Note that HCl is not tested due to chlorine content of the fuel staying below the limit.</p> <p>The Department grants an exemption from percent nitrogen and sulfur analysis as the sources have control devices and CEMS for both SO₂ and NO_x (see email dated 11/13/12).</p> <p>Units 3 & 4 are also subject since all the units are permitted to burn spent cleaning solution and oily debris. Per Section III(J)(6), boilers larger than 50 MMBTU/hr burning small quantities of material generated by the owner/operator with a firing rate less than six percent of the design heat input are exempt from the requirements of this standard except: the boiler must have a valid permit that specifies the material to be burned, analysis of the material, records of material burned and the firing rate.</p>			
Standard 3.1: HMI Waste Incinerators		X	This facility does not contain a HMI waste incinerator.
Standard 4: Emissions from Process Industries	X		See Comments Below



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Regulation	Applicable		Comments
	Yes	No	

Standard 4 Comments: The boilers are not subject to this standard as they have PM and opacity limits set by Standard 1 and do not meet the definition of any of the specific categories; however, all other sources are subject to this standard. The solid fuel handling, flyash handling, limestone handling, gypsum handling, and cooling tower processes are each subject to a PM limit based on the equation in Section VIII(B). Emissions from each source, including fugitives, are subject to 20 or 40% opacity limits based on the date the source was constructed. All non-enclosed operations are subject to the fugitive emission requirements of Section X.

The coal unloading process's max process rate from the previous permit/statement of basis did not match up with process rate in the calculations; therefore the highest process rate from the current calculations was used.

The equipment determined to be part of each separate process are listed below. Wind erosion sources were removed from the list as they are not a process. Sources that have been moved to the insignificant activities list were also removed.

Process Boundaries
Flyash Handling: P69
Coal Unloading System: P01, P02, P03, P04, P05, P06, P07, X01, F01, F08
Coal Handling System #1: P10, P11, P12, P13, P14, P15, P16, P17, P19, P20, P21, P22, P23, P24, X02, X03
Coal Handling System #2: P30, P31, P32, P33, P34, P40, P41, P42, P43, P44, X04
Limestone Unloading: L1-L2, L4-L7, L14-L19
Limestone Feeding: L8-L13
Gypsum Handling System: G1, G2, G3, G4, G5, G6
Chem-Mod System: Silo 1, Silo 2, DB1, DB2, DB3, DB4, DB5, Pug Mills

The limits based on maximum process rate and associated emissions are shown below:

Process	Max Process Rate (ton/hr)	Opacity Limit	PM Limit (lb/hr)	PM Uncontrolled (lb/hr)	PM Controlled (lb/hr)	Monitoring
Flyash Handling	62	20%	46.6	1.95	-	Visual Inspections
Coal Unloading	375	40%	65.6	18.65	-	Visual Inspections
Coal Handling #1	300	40%	63.0	1.27	-	Visual Inspections
Coal Handling #2	600	40%	71.2	6.11	-	Visual Inspections
Limestone Unloading	125	20%	53.5	3.11	-	Visual Inspections
Limestone Feeding	55	20%	45.5	0.29	-	Visual Inspections
Gypsum Handling	110	20%	52.2	0.87	-	Visual Inspections
Chem-Mod	30	20%	40.0	0.07	-	Visual Inspections

Semi-annual visual inspections will be required to insure compliance for the flyash handling, coal unloading, coal handling, and limestone unloading. The other processes' uncontrolled emissions are well below the limit, therefore monitoring will not be required.

Standard 5: Volatile Organic Compounds	X	This facility has VOC emissions greater than 100 TPY but none of the specific source provisions apply. The IA-T01, IA-T02, and IA-T03 are fixed roof liquid petroleum storage tanks larger than 40,000 gallons but their vapor pressures of 0.0111 psia is below the applicability threshold of 1.52 psi.
Standard 5.1: BACT/LAER For VOC (state only)	X	The boilers were constructed prior to 1979. Since that time no VOC sources have been added to the facility.
Standard 5.2: Control of Oxides of Nitrogen	X	All NO _x sources at the facility were constructed prior to 2004 and the burner assemblies have not been replaced.



STATEMENT OF BASIS

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BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

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Regulation	Applicable		Comments
	Yes	No	
Standard 7: Prevention of Significant Deterioration	X		See Comments Below

Standard 7 Comments: The facility is a major source for the following pollutants: PM, PM₁₀, PM_{2.5}, SO₂, NO_x, CO, VOC, H₂SO₄, and Greenhouse Gases (GHGs). See PSD Permitting History table at the end of this statement of basis.

The PSD permits for Unit 3 and Unit 4 contained PM technology and emission limits for PM, Opacity, SO₂ and NO_x, and are being included in the permit. Additional limits for Unit 2 were also in the Final Determination for Units 3 & 4 and will also be added to the permit renewal.

Averaging time is an important consideration when selecting the numerical level for an emissions standard. As such, the EPA allowed affected owners and operators to choose to comply with the 30-day average NO_x and SO₂ standards in NSPS Subpart Da or Db (as applicable) as an alternative to complying with the applicable NO_x and SO₂ standards in Subpart D. The alternatives to the existing 3-hour average based standards are significantly lower and represent emissions levels achieved by electric utility steam generating units retrofitted with post-combustion controls. Adding these alternative 30-day average NO_x and SO₂ standards to subpart D simplifies the compliance requirements and adds fuel choice flexibility. Since these units have post combustion controls and the facility has requested to demonstrate compliance with the lower limits for the NSPS, the Department will streamline the compliance requirements for the existing PSD limits with this permit renewal. The required monitoring and basis for periodic monitoring to assure compliance is described in the following table, see the test summary at the end of this statement of basis for the source/pollutant relation:

Source	Limit	Pollutant(s)	Testing/Monitoring
B02, B03, B04	0.1 lb/MMBtu, each	PM	Periodic Testing
Basis: These sources conduct periodic testing ranging from semi-annual to annual for this and other regulations. The testing will assure compliance.			
B02	1.2 lb/MMBtu	SO ₂	Demonstration of Compliance with 40 CFR 60, Subpart Da. CEMS Monitoring
B03, B04	0.52 lb/MMBtu, each	SO ₂	Demonstration of Compliance with 40 CFR 60, Subpart Da. CEMS Monitoring
Basis: Use of the CEMS will assure compliance.			
B02, B03, B04	0.7 lb/MMBtu, each	NO _x	Demonstration of Compliance with 40 CFR 60, Subpart Da. CEMS Monitoring
Basis: Use of the CEMS will assure compliance.			
B02, B03, B04	20%, each	Opacity	COMS Monitoring
Basis: Use of the COMS will assure compliance.			

Standard 7(c): Ambient Air Increments X See Comments Below



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Regulation	Applicable		Comments									
	Yes	No										
<p>Standard 7(c) Comments: This facility has demonstrated compliance through air dispersion modeling; see modeling summary dated March 14, 2013. This facility has SO₂ limits from a previous PSD ambient air increment analysis. There were initial limits but these were later reallocated. See the PSD history section below. The letter from Santee Cooper stating their preferred re-allocation of limits does not specify the averaging time. As the source has a CEMS and uses a 3-hr averaging time for other regulations that will be used.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Source</th> <th style="width: 25%;">Pollutant(s)</th> <th style="width: 25%;">Testing/Monitoring</th> </tr> </thead> <tbody> <tr> <td>B01, B02, B03, B04</td> <td>SO₂</td> <td>CEMS Monitoring</td> </tr> <tr> <td colspan="3">Basis: Use of the CEMS will assure compliance.</td> </tr> </tbody> </table>				Source	Pollutant(s)	Testing/Monitoring	B01, B02, B03, B04	SO ₂	CEMS Monitoring	Basis: Use of the CEMS will assure compliance.		
Source	Pollutant(s)	Testing/Monitoring										
B01, B02, B03, B04	SO ₂	CEMS Monitoring										
Basis: Use of the CEMS will assure compliance.												
Standard 7.1: Standards for Non Attainment Areas		X	This facility is not located in a nonattainment area.									
Standard 8: Toxic Air Pollutants (state only)	X		This facility has demonstrated compliance through air dispersion modeling; see modeling summary dated March 14, 2013.									
Regulation 61-62.6: Control of Fugitive Particulate Matter	X		The material handling operations generate fugitive particulate matter emissions. As this facility is not in an area in which ambient levels of particulate matter are at or near primary standards; an area where an undesirable level of air pollution exists; an area in which excessive levels of fugitive particulate matter result in complaints from the general public; or an area in which fugitive particulate matter is determined to be impacting upon a nonattainment area, they are subject to the state wide requirements listed in Section III.									
40 CFR 60 - NSPS and Regulation 61-62.60: SC Designated Facility Plan and NSPS	X		Subpart D - Fossil-Fuel-Fired Steam Generators. The discussion below is from the application; the statements made have been checked.									



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Regulation	Applicable		Comments
	Yes	No	

NSPS D Comments:

NSPS Subpart D provides standards of performance for fossil-fuel-fired steam generating units with a heat input rate of more than 250 MMBtu/hr for which construction commenced after August 17, 1971. Any facility covered under Subpart Da is not subject to Subpart D. Boiler 1 commenced construction prior to August 17, 1971. Therefore, this unit is not subject to the requirements of NSPS Subpart D. Boilers 2, 3, and 4 commenced construction after August 17, 1971, and before the NSPS Subpart Da applicability date of September 18, 1978. These units have not been modified or reconstructed. Therefore, the units are subject to NSPS Subpart D.

The original NSPS Subpart D, promulgated in July 1977, included emission standards for PM, SO₂, and NO_x. On June 13, 2007, NSPS Subpart D was revised to allow affected owners and operators to choose to comply with the 30-day average NO_x and SO₂ standards in NSPS Subpart Da or Db (as applicable) as an alternative to complying with the applicable NO_x and SO₂ standards in Subpart D. In addition, the June 13, 2007 amendments allowed the use of a CO CEMS in place of a COMS. Other minor revisions were made to clarify language and correct errors. Santee Cooper has requested these alternatives for NO_x and SO₂ and the permit reflects the alternative limits.

Boilers 2, 3, and 4 are subject to PM, SO₂, and NO_x emission limits under Subpart D. Winyah Generating Station conducts PM source tests on an annual basis to demonstrate compliance with the PM emission limit. SO₂ and NO_x CEMS are used to demonstrate continuous compliance with the SO₂ and NO_x emission limits.

Winyah Generating Station was issued a construction permit in February 2001 to install the CBO unit, which exhausts through the Boiler 3 and 4 stacks. In February 2002, Santee Cooper submitted a permit application to revise the emission limits on Units 3 and 4 to incorporate the CBO process. In the Engineering Calculation Sheet, or "greensheet", for this permit application, DHEC described the CBO unit as an integral part of the boiler process as follows:

'The Carbon Burn Out process would not practically operate as a separate unit (would result in wasted heat), but is (practically) an integral portion of the boiler operation that uses the heat from ash combustion to heat the feedwater which would be provided from boiler heat if the CBO were not present.'

Based on this conclusion, DHEC determined that the CBO process is subject to NSPS Subparts A and D as an integral part of Boiler 3 and 4 operations. Winyah Generating Station complies with the PM, SO₂, and NO_x requirements as previously discussed.

Santee Cooper requested the removal of the CBO units with this renewal. This equipment has been transferred to another company.

40 CFR 60 - NSPS and Regulation 61-62.60: SC Designated Facility Plan and NSPS	X		Subpart Y - Coal Preparation Plant. See Comments Below
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NSPS Y Comments:

NSPS Subpart Y regulates thermal dryers, pneumatic coal-cleaning equipment, coal processing and conveying equipment, coal storage systems, and coal transfer and loading systems in coal preparation plants that process more than 200 tons per day. A coal preparation plant is defined at 40 CFR §60.251 as any facility which prepares coal by one or more of the following processes: breaking, crushing, screening, wet or dry cleaning, and thermal drying. Conveyors are subject if they are "used to convey coal to or remove coal and refuse from the machinery."

Coal unloading and transfer to storage piles is not subject (per EPA's Applicability Determination Index #Y002), therefore P06 and P07 will no longer be subject. The Unit 1 coal handling equipment is not subject as construction commenced prior to 1974. The rest of the coal handling equipment is subject. The pre-ChemMod equipment is subject to the NSPS Subpart Y prior to the October 8, 2009 revisions as it was constructed prior to April 28, 2008.

The binvents on the ChemMod silos and day bins do not meet the definition of a mechanical vent as they do not use a machine to induce air flow, therefore they are only subject to the opacity limit. The dust collectors installed on P12, P13, P21, P31, and P41 use a machine to induce air flow, therefore they are subject to the PM limit for mechanical vents.

40 CFR 60 - NSPS and Regulation 61-62.60: SC Designated Facility Plan and NSPS	X		Subpart OOO - Nonmetallic Mineral Processing Plants. See Comments Below
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Company Name: SCPSA - SANTEE COOPER WINYAH GENERATING STATION
Permit Number: TV-1140-0005

Permit Writer: Fatina Ann Washburn Clark
Date: 10/02/2014

PROJECT REGULATORY APPLICABILITY REVIEW

Regulation	Applicable		Comments
	Yes	No	
<p>NSPS OOO Comments: NSPS Subpart OOO regulates crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck or railcar loading stations at nonmetallic mineral processing plants constructed, modified, or reconstructed after August 31, 1983. Nonmetallic mineral processing plants include any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located. Since Winyah Generating Station operates equipment to crush or grind limestone and gypsum, the limestone and gypsum handling equipment is subject to the requirements of this subpart. It is important to note that the designation of an affected facility in 40 CFR 60.670(a)(1) does not include truck unloading onto storage piles or limestone pile maintenance, therefore, limestone handling units L16 (truck unloading) and L17 (limestone pile maintenance) are not subject to NSPS Subpart OOO.</p> <p>The original NSPS Subpart OOO was promulgated on August 1, 1985. On June 9, 1997, NSPS Subpart OOO was revised to incorporate clarifications to the applicability, definitions, test methods and procedures, and reporting and recordkeeping requirements of the standard. A second set of revisions was promulgated on April 28, 2009, to modify emission limits, monitoring, and performance testing requirements for units constructed, reconstructed, or modified on or after April 22, 2008.</p> <p>The limestone and gypsum handling equipment at Winyah Generating Station was constructed prior to April 22, 2008, therefore, the facility is subject to the NSPS Subpart OOO standards prior to the April 28, 2009 revisions. The alternative limestone handling system listed in the insignificant activities is not subject as it was constructed pre-1983.</p> <p>The gypsum handling is not considered part of the limestone process for the purposes of NSPS Subpart OOO. Since the gypsum process does not contain crushing or grinding equipment, it is not subject to NSPS Subpart OOO.</p>			
40 CFR 60 - NSPS and Regulation 61-62.60: SC Designated Facility Plan and NSPS		X	Subpart IIII - Stationary Compression Ignition Internal Combustion Engines. The discussion below is from the application; the statements made have been checked.
<p>NSPS IIII Comments: NSPS Subpart IIII applies to stationary compression ignition (CI) internal combustion engines (ICE) that commence construction after July 11, 2005 or are modified or reconstructed after July 11, 2005. Winyah Generating Station does not operate any CI ICE that were constructed, modified, or reconstructed after July 11, 2005. Therefore, this subpart is not applicable.</p>			
40 CFR 60 - NSPS and Regulation 61-62.60: SC Designated Facility Plan and NSPS		X	Subpart JJJJ - Stationary Spark Ignition Internal Combustion Engines. The discussion below is from the application; the statements made have been checked.
<p>NSPS JJJJ Comments: NSPS Subpart JJJJ applies to new stationary spark ignition (SI) internal combustion engines (ICE) that are manufactured after the dates specified in 40 CFR 60.4230. Winyah Generating Station does not operate any SI ICE. Therefore, this subpart is not applicable.</p>			
40 CFR 60 - NSPS and Regulation 61-62.60: SC Designated Facility Plan and NSPS			Subpart DDDD – Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units. See comments below
<p>Subpart DDDD Comments: The facility plans to maintain documentation for Winyah Station that the off specification used oil burned in the boilers meets the legitimacy criteria in the regulation.</p>			
40 CFR 61 - NESHAP and Regulation 61-62.61: NESHAP		X	This facility does not emit subject pollutants in a quantity that would make them subject.
40 CFR 63 – MACT and Area Source Standards and Regulation 61-62.63: NESHAP For Source Categories	X		Subpart ZZZZ - Stationary Reciprocating Internal Combustion Engines. The discussion below is from the application; the statements made have been checked.



Company Name: SCPSA - SANTEE COOPER WINYAH GENERATING STATION
Permit Number: TV-1140-0005

Permit Writer: Fatina Ann Washburn Clark
Date: 10/02/2014

PROJECT REGULATORY APPLICABILITY REVIEW

Regulation	Applicable		Comments
	Yes	No	
MACT ZZZZ Comments: Subpart ZZZZ regulates hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. Winyah Generating Station operates two emergency generators and one emergency fire pumps that are affected sources under Subpart ZZZZ. The emergency generators and fire pump are existing emergency CIICE at a major source of HAP emissions with horsepower rating less than 500 hp. Therefore, the engines are subject to operation, maintenance, and recordkeeping requirements under this subpart.			
40 CFR 63 – MACT and Area Source Standards and Regulation 61-62.63: NESHAP For Source Categories		X	Subpart DDDDD - Industrial Boilers & Process Heaters.
MACT DDDDD Comments: The Units meet the definition of an electric utility steam generating unit (EGU) and are not subject to this regulation.			
40 CFR 63 – MACT and Area Source Standards and Regulation 61-62.63: NESHAP For Source Categories	X		Subpart UUUUU - Electric Utility Steam Generating Units. See Comments Below
MACT UUUUU Comments: The boilers are subject as existing sources and will have to comply with the regulations within the timeframes contained therein. Until such time as the compliance date has passed, a generic condition will be added to the permit to address this regulation.			
Case-By-Case MACT 112(g)		X	The discussion below is from the application; the statements made have been checked.
EPA's regulations for case-by-case MACT are detailed in 40 CFR §63, Subpart B. Those regulations require case-by-case determinations of MACT for each major source of HAP that is constructed or reconstructed after the effective date of that permitting authority's Section 112(g) program for which a MACT under 112(d) is not promulgated. For electric utility steam generating units, the case-by-case provisions contain an exemption from applicability "unless and until such time as these units are added to the source category list." On December 14, 2000, EPA announced that it was adding coal- and oil-fired power plants to the Section 112(c) list of sources. As all of the boilers were in existence prior to EPA's addition of power plants as a source category, the boilers are not subject to case-by-case MACT.			
Regulation 61-62.68: Chemical Accident Prevention	X		This facility stores and uses anhydrous ammonia above threshold quantities. They are subject to the Risk Management Plan requirements.
Regulation 61-62.70: Title V	X		This facility is a major source for PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAPs, and Greenhouse Gases (GHGs) and has submitted a timely and complete application to renew their TV permit.
Regulation 61-62.72: Acid Rain	X		For the Unit 01 boiler, the facility elected to comply with an emissions averaging plan in accordance with 76.11 in lieu of complying with the applicable emission limitation in 40 CFR 76.5, 76.6, or 76.7. The Unit 02-04 boilers are Phase II wall fired boilers and are therefore subject to the Group 1, Phase II boiler NO _x emission limits.
Regulation 61-62.96: NO_x Budget Trading Program And CAIR NO_x And SO₂ Trading Programs For State Implementation Plans	X		The units at this facility are NO _x , SO ₂ , and NO _x Ozone Seasonal Units per §96.104(a)(1), §96.204(a)(1), and §96.304(a)(1), respectively.
Regulation 61-62.99: Nitrogen Oxides (NO_x) Budget Program Requirements for Stationary Sources Not In the Trading Program		X	This facility does not operate a kiln.
40 CFR 64 - Compliance Assurance Monitoring (CAM)	X		The discussion below is from the application; the statements made have been checked.



Company Name: SCPSA - SANTEE COOPER WINYAH GENERATING STATION
Permit Number: TV-1140-0005

Permit Writer: Fatina Ann Washburn Clark
Date: 10/02/2014

PROJECT REGULATORY APPLICABILITY REVIEW

Regulation	Applicable		Comments
	Yes	No	
<p>CAM Comments: Under 40 CFR 64, CAM, facilities are required to prepare and submit monitoring plans for certain emission units with the Title V application. The CAM Plans provide an on-going and reasonable assurance of compliance with emission limits. Under the general applicability criteria, this regulation only applies to emission units that use a control device to achieve compliance with an emission limit and whose pre-controlled emission levels exceed the major source thresholds under the Title V permitting program. Emission units with a continuous compliance determination method for a regulated pollutant are exempt from the requirements of CAM per 40 CFR 64.2(b)(1)(vi). For an emission unit with post-controlled emissions less than the major source emission thresholds, a CAM plan is required to be submitted with the first Title V permit renewal application.</p> <p>Pre and post-controlled emissions from the boilers are greater than the major source thresholds of NO_x, PM₁₀, SO₂, and HAP and are subject to Title V permit emission limits for these pollutants. The boilers are equipped with control devices for NO_x, PM, and SO₂. Winyah Generating Station operates CEMS or COMS on all four boilers to continuously monitor SO₂, NO_x, and opacity. Therefore, no CAM plan is required for these pollutants. There is no continuous compliance determination method to demonstrate compliance with the PM₁₀ emission limits, therefore the boilers require a CAM Plan specific to PM₁₀. Santee Cooper is not requesting any changes to the existing CAM plan in this renewal application. A CAM form for PM₁₀ is included in Appendix D of the application.</p> <p>No other emissions units with control devices have pre-controlled emissions in excess of the major source thresholds.</p>			

PSD Permitting History

Date	Action												
07/07/71	Unit 1 "commenced construction" per NSPS upon entering a binding commitment on June 23, 1971. Per EPA letters to Santee Cooper dated January 3, 1972 and February 14, 1972.												
10/01/74	Unit 2 "began a continuous program of construction." Per February 1, 1978 BAQC memo.												
1975	Unit 1 began commercial operation.												
06/23/77	Santee Cooper submitted a PSD application for Units 3 and 4.												
07/29/77	<p>"Pre-Construction Review" and Preliminary Determination is issued for Units 3 and 4.</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th colspan="3">BACT for Units 3 & 4</th> </tr> <tr> <th>Pollutant</th> <th>Control Technology</th> <th>Limit</th> </tr> </thead> <tbody> <tr> <td>PM</td> <td align="center">*</td> <td align="center">0.10 lb/MMBTU</td> </tr> <tr> <td>SO₂</td> <td align="center">*</td> <td align="center">1.2 lb/MMBTU</td> </tr> </tbody> </table> <p>* "The applicant must submit to the Bureau of Air Quality Control (BAQC), within five working days after it becomes available, copies of all technical data pertaining to the selected control devices, including formal bid from the vendor, guaranteed efficiency or emission rate, and major design parameters such as plate area and flow rates. Although the type of control equipment which is described in general in the application has been determined by the Bureau of Air Quality Control to be adequate, the Bureau of Air Quality Control must review the final selected devices in order to verify the emission limits stated in the application. The Bureau of Air Quality Control may, upon review of these data, disapprove the application if the Bureau of Air Quality Control determines the selected devices to be inadequate to meet the emission limits specified in this conditional approval."</p>	BACT for Units 3 & 4			Pollutant	Control Technology	Limit	PM	*	0.10 lb/MMBTU	SO ₂	*	1.2 lb/MMBTU
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01/31/78	BAQC sent letter to Santee Cooper to inform them that SO ₂ from Units 3 and 4 will exceed the new Class I 24-hr and 3-hr SO ₂ increments.												
02/01/78	BAQC memo explains why emissions from Unit 2 must be included in the PSD increment review based on the construction commencement date.												



Company Name: SCPSA - SANTEE COOPER WINYAH GENERATING STATION
Permit Number: TV-1140-0005

Permit Writer: Fatina Ann Washburn Clark
Date: 10/02/2014

PSD Permitting History

Date	Action																																										
02/28/78	<p>“Pre-Construction Review” Final Determination and permits were issued for construction of Unit 3 (P/C-22-058) and Unit 4 (P/C-22-059). Permit revisions were also issued for Unit 1 (P/C-22-009-R-1) and Unit 2 (P/C-22-032-R-1).</p> <p>The provisions of the final determination contained PM, SO₂, NO_x and Opacity limits for Units 2, 3 and 4 and are listed below.</p> <table border="1" data-bbox="529 627 1269 951"> <thead> <tr> <th colspan="3">Final Determination Limits</th> </tr> <tr> <th>Pollutant</th> <th>Unit</th> <th>Limit</th> </tr> </thead> <tbody> <tr> <td>PM</td> <td>Units 2, 3 and 4</td> <td>0.1 lb/MMBTU, each</td> </tr> <tr> <td>SO₂</td> <td>Unit 1</td> <td>2.2 lb/MMBTU</td> </tr> <tr> <td>SO₂</td> <td>Unit 2</td> <td>1.0 lb/MMBTU</td> </tr> <tr> <td>SO₂</td> <td>Units 3 and 4</td> <td>0.3 lb/MMBTU</td> </tr> <tr> <td>NO_x</td> <td>Units 2, 3 and 4</td> <td>0.7 lb/MMBTU, each</td> </tr> <tr> <td>Opacity</td> <td>Units 2, 3 and 4</td> <td>20% with 40% permissible for no more than 2 minutes in any hour*</td> </tr> </tbody> </table> <p>* NOTE: Subsequent permits have updated the opacity limit to reflect current regulations.</p> <p>The permit contained initial SO₂ limits for compliance with Std. 7 SO₂ increments. The permits required a report of SO₂ increment monitoring prior to the start-up of Unit 3.</p> <table border="1" data-bbox="583 1199 1216 1331"> <thead> <tr> <th colspan="3">BACT for Units 3 & 4</th> </tr> <tr> <th>Pollutant</th> <th>Control Technology</th> <th>Limit</th> </tr> </thead> <tbody> <tr> <td>PM</td> <td>ESP</td> <td>0.1 lb/MMBTU</td> </tr> <tr> <td>SO₂</td> <td>Limestone Scrubber</td> <td>0.3 lb/MMBTU</td> </tr> </tbody> </table> <table border="1" data-bbox="583 1360 1216 1461"> <thead> <tr> <th colspan="2">Initial Std. 7 SO₂ Increment Limits</th> </tr> </thead> <tbody> <tr> <td>Unit 1</td> <td>2.2 lb/MMBTU until Unit 3 startup</td> </tr> <tr> <td>Unit 2</td> <td>1.0 lb/MMBTU until Unit 4 startup</td> </tr> </tbody> </table>	Final Determination Limits			Pollutant	Unit	Limit	PM	Units 2, 3 and 4	0.1 lb/MMBTU, each	SO ₂	Unit 1	2.2 lb/MMBTU	SO ₂	Unit 2	1.0 lb/MMBTU	SO ₂	Units 3 and 4	0.3 lb/MMBTU	NO _x	Units 2, 3 and 4	0.7 lb/MMBTU, each	Opacity	Units 2, 3 and 4	20% with 40% permissible for no more than 2 minutes in any hour*	BACT for Units 3 & 4			Pollutant	Control Technology	Limit	PM	ESP	0.1 lb/MMBTU	SO ₂	Limestone Scrubber	0.3 lb/MMBTU	Initial Std. 7 SO ₂ Increment Limits		Unit 1	2.2 lb/MMBTU until Unit 3 startup	Unit 2	1.0 lb/MMBTU until Unit 4 startup
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05/12/80	BAQC memo: Unit 2 would be considered in the PSD ambient air baseline instead of the increment.																																										
09/05/80	<p>Santee Cooper sent a letter explaining how they want to re-allocate PSD SO₂ increment. Notes indicate that the permits were to be modified to incorporate the new allocations. Units 3 & 4 limits are reflected in subsequent permits.</p> <table border="1" data-bbox="678 1619 1122 1814"> <thead> <tr> <th colspan="2">SO₂ Emission Limit Re-Allocations</th> </tr> <tr> <th>Unit</th> <th>Limit</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2.85 lb/MMBTU</td> </tr> <tr> <td>2</td> <td>1.2 lb/MMBTU</td> </tr> <tr> <td>3</td> <td>0.52 lb/MMBTU</td> </tr> <tr> <td>4</td> <td>0.52 lb/MMBTU</td> </tr> </tbody> </table>	SO ₂ Emission Limit Re-Allocations		Unit	Limit	1	2.85 lb/MMBTU	2	1.2 lb/MMBTU	3	0.52 lb/MMBTU	4	0.52 lb/MMBTU																														
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02/22/01	Synthetic minor construction permit CC was issued for the installation of a Carbon Burn Out operation to tie into Unit 3.																																										



STATEMENT OF BASIS

Page 21 of 21

BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name: SCPSA - SANTEE COOPER WINYAH GENERATING STATION
Permit Number: TV-1140-0005

Permit Writer: Fatina Ann Washburn Clark
Date: 10/02/2014

PSD Permitting History

Date	Action																
08/09/02	<p>Construction permit CG is issued to revise the Carbon Burn Out process to include use with Unit 4 and to revise Unit 3 limits.</p> <p>"In order to comply with PSD permit requirements, these boilers can be permitted under the "Wepco" concept for determination of "future actual" emissions by tracking and reporting the "future emissions" after the fact to confirm that no emissions increases have occurred as a result of the physical or operational change. This concept is allowed for modifications made to existing sources. To fit the Wepco concept, the physical or operational change must be a modification to an electric utility steam generating unit that does not result in a capacity increase. The "future actual" for utilities is allowed to incorporate increases such as a growth factor which would allow for increases due to normal load growth that would have occurred even if the change had not been made. Considering this as a modification requires viewing the Carbon Burn Out process as a variation in the way these boilers operate as opposed to considering the Carbon Burn Out process as a separate distinct function that takes place independent of the boiler operation. The Carbon Burn Out process would not practically operate as a separate unit (would result in wasted heat), but is (practically) an integral portion of the boiler operation that uses the heat from ash combustion to heat the feedwater which would be provided for from boiler heat if the CBO were not present."</p> <p>To demonstrate that emissions will not increase above significant thresholds, the following emission thresholds/limits were established per SC Regulation 61-62.5, Standard 7(r)(6) for Units 3 & 4. Annual actual emission reports were required for five years:</p> <table border="1" data-bbox="485 1062 1313 1194"> <thead> <tr> <th colspan="4">(r)(6) Limits TPY</th> </tr> <tr> <th>Unit</th> <th>PM Limits</th> <th>SO₂ Limits</th> <th>NO_x Limits</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>960</td> <td>4,996</td> <td>6,927</td> </tr> <tr> <td>4</td> <td>435</td> <td>4,597</td> <td>6,046</td> </tr> </tbody> </table>	(r)(6) Limits TPY				Unit	PM Limits	SO ₂ Limits	NO _x Limits	3	960	4,996	6,927	4	435	4,597	6,046
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Unit	PM Limits	SO ₂ Limits	NO _x Limits														
3	960	4,996	6,927														
4	435	4,597	6,046														

Last Sources Tests

This does not include cumulative mass limits (ton/yr) as those are not verified via source tests.

Source	Pollutant	Limit	Last Test Date	Result
B01	PM	0.38 lb/MMBTU (nominal)	5/9/2012	Compliance
B01	SO ₂ Increment	2.85 lb/MMBTU	CEMS	Compliance
B02	PM	0.1 lb/MMBTU	6/21/2012	Compliance
B02	SO ₂ Increment	1.2 lb/MMBTU	CEMS	Compliance
B03	PM	0.1 lb/MMBTU	7/12/2012	Compliance
B03	SO ₂ Increment	0.52 lb/MMBTU	CEMS	Compliance
B04	PM	0.1 lb/MMBTU	6/21/2012	Compliance
B04	SO ₂ Increment	0.52 lb/MMBTU	CEMS	Compliance

SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.