

Jina

Orlando Utilities Commission  
500 South Orange Avenue  
P.O. Box 3193  
Orlando, Florida 32802  
Phone: 407.423.9100  
Administrative Fax: 407.236.9616  
Purchasing Fax: 407.384.4141  
Website: www.ouc.com

RECEIVED

JUN 27 2007

DIVISION OF AIR  
RESOURCES MANAGEMENT



The *Reliable One*®

June 25, 2007

Certified Mail  
No. 7006 3450 0000 2282 0797  
Return Receipt Requested

Certified Mail  
No. 7006 3450 0000 2282 0803  
Return Receipt Request

✓ Mr. Joe Kahn, P.E., Director  
Division of Air Resources Management  
Bureau of Air Regulation  
Florida Department of Environmental Protection  
2600 Blair Stone Road, MS-5500  
Tallahassee, FL 32399-2400

Mr. Mike Halpin, P.E., Administrator  
Siting Coordination Office  
Florida Department of  
Environmental Protection  
2600 Blair Stone Road, MS 48  
Tallahassee, FL 32399-2400

RE: Curtis H. Stanton Energy Center Unit B IGCC  
PSD Permit No. PSD-FL-373

Dear Mr. Kahn

Dear Mr. Halpin:

The Orlando Utilities Commission ("OUC") and Southern Power Company-Orlando Gasification LLC ("Southern") have recently obtained the necessary approvals from the Florida Department of Environmental Protection ("Department"), including a Site Certification Order and Prevention of Significant Deterioration ("PSD") air construction permit, for the construction of a 285-megawatt Integrated Gasification Combined Cycle ("IGCC") unit at the Stanton Energy Center ("Stanton Unit B"). The project has been selected by the U.S. Department of Energy ("DOE") to demonstrate advanced power generation systems using IGCC technology. DOE and Southern executed a Cooperative Agreement amendment giving DOE's final approval for construction of the facility effective on May 1, 2007, whereby DOE will provide cost-shared funding to design, construct, and demonstrate this new technology. Upon completion, Stanton Unit B is expected to be one of the cleanest and most-efficient coal-based power plants in the world. Construction is scheduled to commence in September of 2007.

We are pleased to report that, after much effort, the Front-End Engineering Design ("FEED") process for this demonstration project is now complete. As a result of this FEED process, certain technical aspects of the project are being refined from the preliminary design plans available during the PSD air construction permitting process. The purpose of this letter is to inform the Department of these design updates in order to update the Department's records accordingly. We believe the data included in support of this letter is both complete and sufficient and would satisfy the standard for data which may be required for post-certification review as provided for in Section 62-17.191, F.A.C.

In particular, OUC /Southern intend to incorporate the following updates in design plans for Stanton Unit B:

1. This project will require construction of a single gasifier vessel instead of two gasifier vessels. The coal input to and the syngas output from the single gasifier will be the same as presented in the original application as the total for the two gasifiers. A single gasifier is shown on the site drawings included in Attachment 1. With a single gasifier as opposed to two gasifiers, emissions during gasifier startup will remain within the estimates presented in the original application and will most likely be reduced.
2. This project will require certain site layout revisions in order to optimize the design and performance of the unit. Upon the conclusion of FEED, several structure heights and locations have been revised. These revisions are indicated in the design drawings located in Attachment 1. A revised air dispersion modeling study has been conducted considering the new layout and its results are included in Attachment 2. Impacts from all pollutants modeled remain below applicable modeling significance levels.
3. This project will require that certain components of the coal storage system be resized. The number of coal processing trains has been reduced from four to three resulting in the following revisions to the material handling system:
  - The system will include three Crushed Coal Storage Silos (1-3) instead of the original four (referred to as Coal Storage Bins 1-4 in the original application). These silos will have a common baghouse that replaces the original four Crushed Coal Storage Silo 1-4 baghouses.
  - A nitrogen purge stream will replace the original four coal mill silo baghouses.
  - The ash storage silo baghouse has been eliminated.
  - There will be a discharge from a makeup solids unloading system.

The overall result of these updates is that the number of emission points from the system is reduced, as are the total emissions from the system. These changes have been reflected in the drawings in Attachment 1 and in the revised dispersion modeling included in Attachment 2.

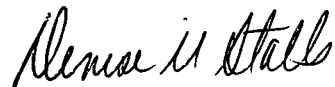
4. The flare will be resized to provide for the ability to flare several process vents during emergency conditions (instead of their release to the atmosphere) as well as for continuous flaring of several small cleanup streams from the gasification island. Any changes in NOx emissions at the flare as a result of this resizing will be accommodated under the existing NOx Emissions Cap as stated in the Permit.

The IGCC project did not trigger PSD applicability for NO<sub>x</sub>; the PSD permit therefore only establishes a total NO<sub>x</sub> cap. The resizing of the flare will not affect this NO<sub>x</sub> Emissions Cap and no change to the permit conditions is requested. The permit does specify, as an emission unit description, "A multipoint flare (including 8 pilot flares)". As detailed design of the flare system is completed, it is likely that the exact number of pilots will change. Since the resizing of the flare will not require a change in any permit limit, and since the NO<sub>x</sub> Emission Cap for Unit B will remain the same, we request that the informational description of the flare be administratively corrected from "including 8 pilot flares" to "including a pilot system".

These technical design updates are consistent with the kinds of changes contemplated during the permitting process. We have attached revised materials to update the application file reflecting these revisions. We do not anticipate that these changes will require substantial technical evaluation by the Department, and these changes will not lead to substantially different environmental impacts. Accordingly, it is our understanding that no processing fee is required by the Department for these updates to the application. While some information referenced by the permit from the application is revised, this is considered an informational change to the permit only, and no change to the conditions of the permit is requested.

Thank you for your attention to this matter. Please let me know if you have any questions or need additional information.

Sincerely,



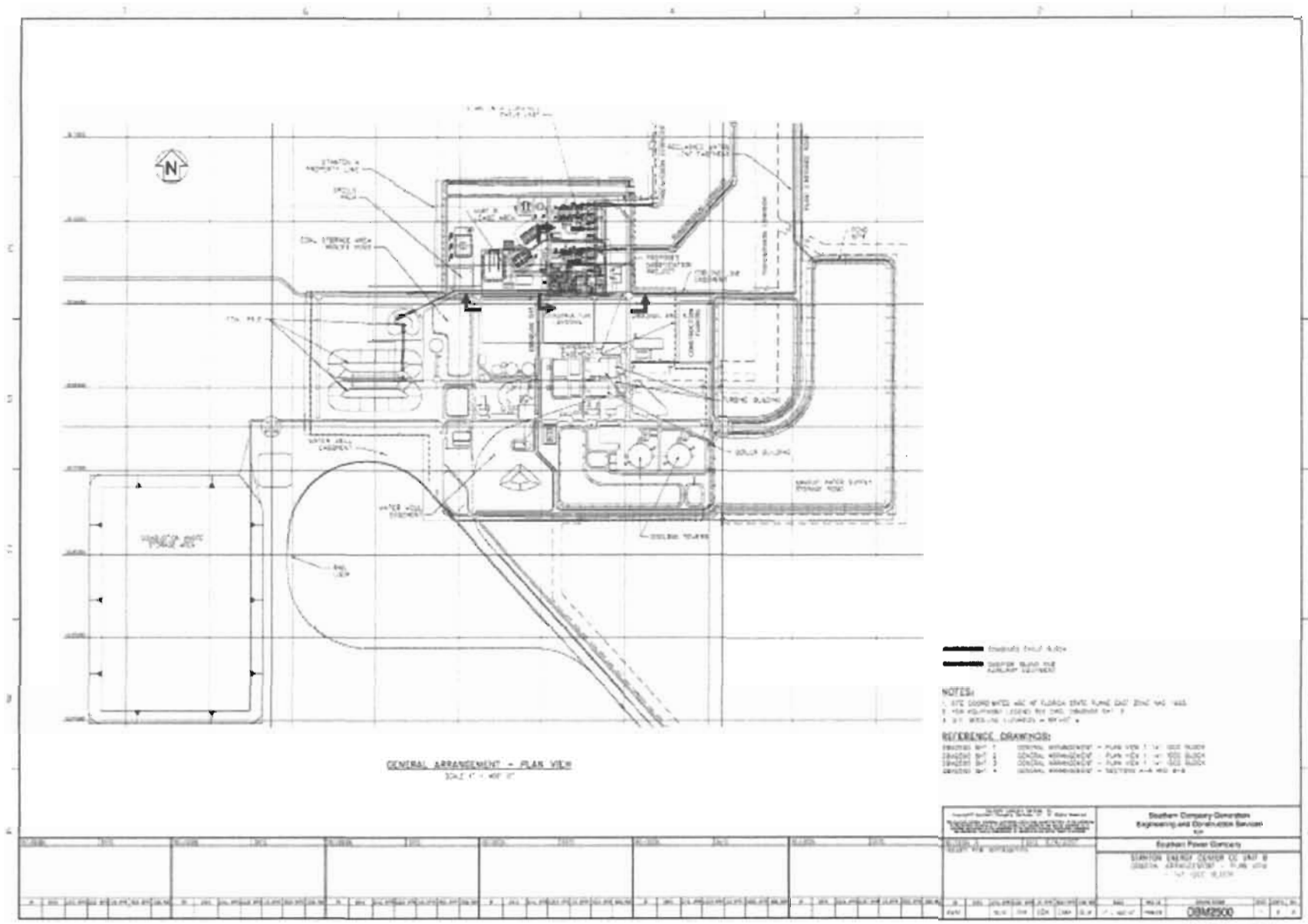
Denise Stalls, Vice President  
Environmental Affairs

cc: Ms. Trina Vielhauer, FDEP  
Mr. Alvaro Linero, P.E., FDEP

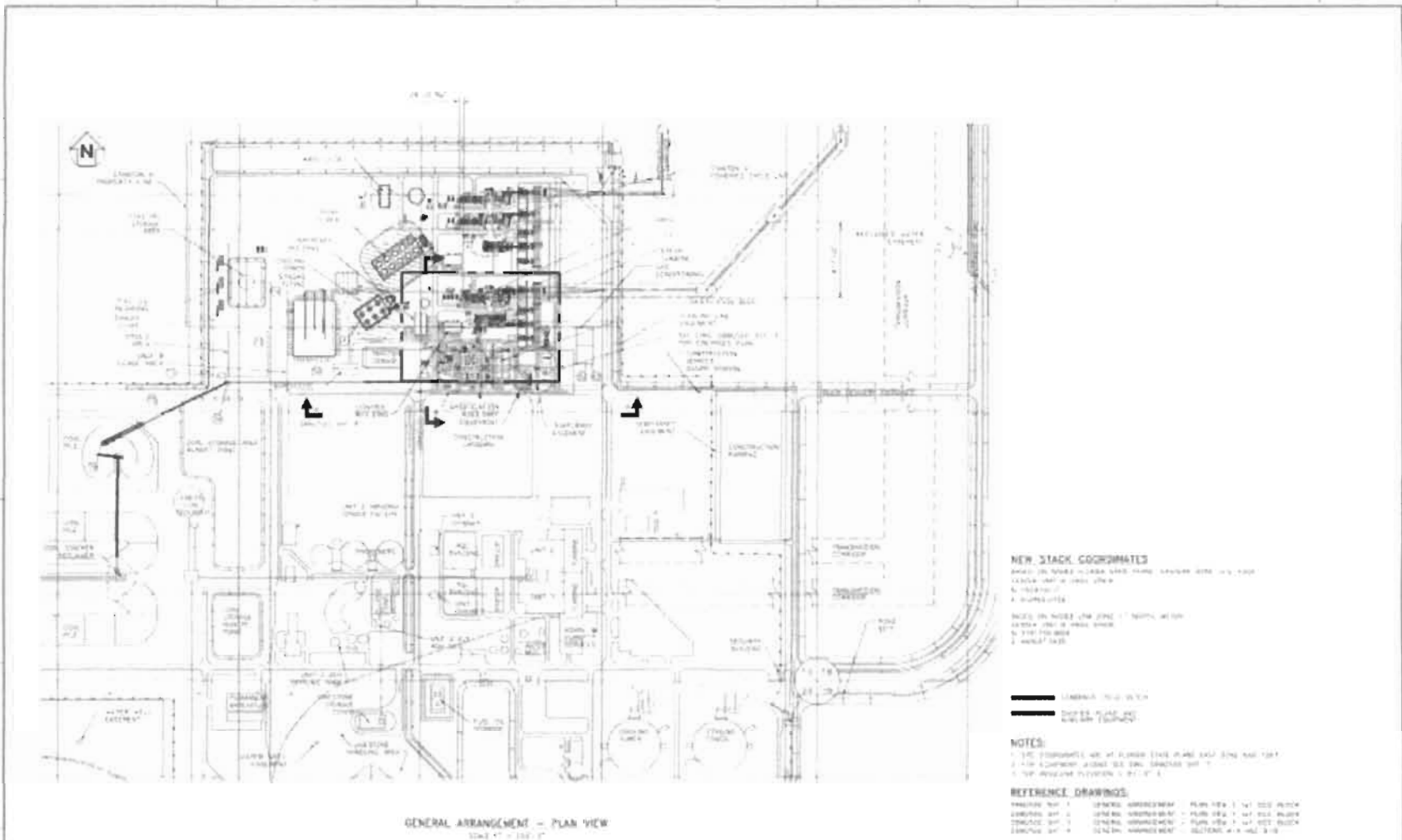
Attachments

1. Updated Facility Design Drawings.
2. Revised Dispersion Modeling Results.

**Attachment 1**  
**Updated Facility Design Drawings**

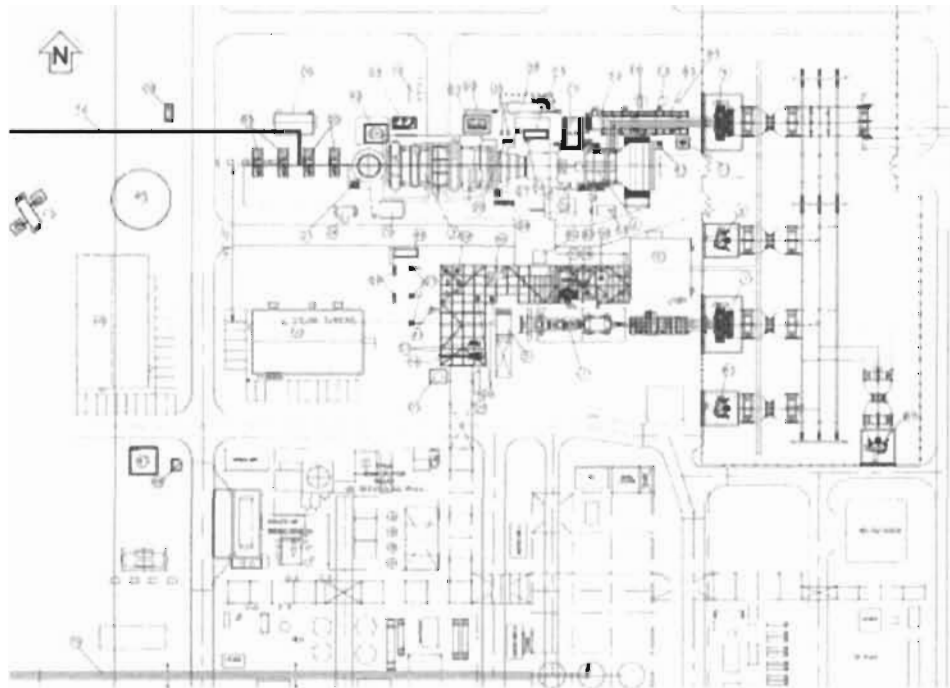


# Best Available Copy



<p>Copyright © 2000 Southern Power Corporation          All Rights Reserved          Southern Power Corporation          1000 Peachtree Street, N.E.          Atlanta, Georgia 30309</p>										<p>Southern Company Generation          Engineering and Construction Services          Inc.</p>	
<p>10/10/00</p>										<p>Southern Power Company</p>	
<p>STANTIN ENERGY CENTER CC UNIT B          GENERAL ARRANGEMENT - PLAN VIEW          1 OF 100 SHEETS</p>										<p>DATE PLOTTED: 10/10/00          PLOTTER: HP DesignJet 5000</p>	
<p>10/10/00</p>										<p>08M2500</p>	





GENERAL ARRANGEMENT - PLAN VIEW  
SCALE: 1/4" = 1'-0"

**LEGEND**

- 1. CONDENSER
- 2. CONDENSATE PUMP
- 3. CONDENSATE PUMP MOTOR
- 4. CONDENSATE PUMP MOTOR
- 5. CONDENSATE PUMP MOTOR
- 6. CONDENSATE PUMP MOTOR
- 7. CONDENSATE PUMP MOTOR
- 8. CONDENSATE PUMP MOTOR
- 9. CONDENSATE PUMP MOTOR
- 10. CONDENSATE PUMP MOTOR
- 11. CONDENSATE PUMP MOTOR
- 12. CONDENSATE PUMP MOTOR
- 13. CONDENSATE PUMP MOTOR
- 14. CONDENSATE PUMP MOTOR
- 15. CONDENSATE PUMP MOTOR
- 16. CONDENSATE PUMP MOTOR
- 17. CONDENSATE PUMP MOTOR
- 18. CONDENSATE PUMP MOTOR
- 19. CONDENSATE PUMP MOTOR
- 20. CONDENSATE PUMP MOTOR
- 21. CONDENSATE PUMP MOTOR
- 22. CONDENSATE PUMP MOTOR
- 23. CONDENSATE PUMP MOTOR
- 24. CONDENSATE PUMP MOTOR
- 25. CONDENSATE PUMP MOTOR
- 26. CONDENSATE PUMP MOTOR
- 27. CONDENSATE PUMP MOTOR
- 28. CONDENSATE PUMP MOTOR
- 29. CONDENSATE PUMP MOTOR
- 30. CONDENSATE PUMP MOTOR
- 31. CONDENSATE PUMP MOTOR
- 32. CONDENSATE PUMP MOTOR
- 33. CONDENSATE PUMP MOTOR
- 34. CONDENSATE PUMP MOTOR
- 35. CONDENSATE PUMP MOTOR
- 36. CONDENSATE PUMP MOTOR
- 37. CONDENSATE PUMP MOTOR
- 38. CONDENSATE PUMP MOTOR
- 39. CONDENSATE PUMP MOTOR
- 40. CONDENSATE PUMP MOTOR
- 41. CONDENSATE PUMP MOTOR
- 42. CONDENSATE PUMP MOTOR
- 43. CONDENSATE PUMP MOTOR
- 44. CONDENSATE PUMP MOTOR
- 45. CONDENSATE PUMP MOTOR
- 46. CONDENSATE PUMP MOTOR
- 47. CONDENSATE PUMP MOTOR
- 48. CONDENSATE PUMP MOTOR
- 49. CONDENSATE PUMP MOTOR
- 50. CONDENSATE PUMP MOTOR
- 51. CONDENSATE PUMP MOTOR
- 52. CONDENSATE PUMP MOTOR
- 53. CONDENSATE PUMP MOTOR
- 54. CONDENSATE PUMP MOTOR
- 55. CONDENSATE PUMP MOTOR
- 56. CONDENSATE PUMP MOTOR
- 57. CONDENSATE PUMP MOTOR
- 58. CONDENSATE PUMP MOTOR
- 59. CONDENSATE PUMP MOTOR
- 60. CONDENSATE PUMP MOTOR
- 61. CONDENSATE PUMP MOTOR
- 62. CONDENSATE PUMP MOTOR
- 63. CONDENSATE PUMP MOTOR
- 64. CONDENSATE PUMP MOTOR
- 65. CONDENSATE PUMP MOTOR
- 66. CONDENSATE PUMP MOTOR
- 67. CONDENSATE PUMP MOTOR
- 68. CONDENSATE PUMP MOTOR
- 69. CONDENSATE PUMP MOTOR
- 70. CONDENSATE PUMP MOTOR
- 71. CONDENSATE PUMP MOTOR
- 72. CONDENSATE PUMP MOTOR
- 73. CONDENSATE PUMP MOTOR
- 74. CONDENSATE PUMP MOTOR
- 75. CONDENSATE PUMP MOTOR
- 76. CONDENSATE PUMP MOTOR
- 77. CONDENSATE PUMP MOTOR
- 78. CONDENSATE PUMP MOTOR
- 79. CONDENSATE PUMP MOTOR
- 80. CONDENSATE PUMP MOTOR
- 81. CONDENSATE PUMP MOTOR
- 82. CONDENSATE PUMP MOTOR
- 83. CONDENSATE PUMP MOTOR
- 84. CONDENSATE PUMP MOTOR
- 85. CONDENSATE PUMP MOTOR
- 86. CONDENSATE PUMP MOTOR
- 87. CONDENSATE PUMP MOTOR
- 88. CONDENSATE PUMP MOTOR
- 89. CONDENSATE PUMP MOTOR
- 90. CONDENSATE PUMP MOTOR
- 91. CONDENSATE PUMP MOTOR
- 92. CONDENSATE PUMP MOTOR
- 93. CONDENSATE PUMP MOTOR
- 94. CONDENSATE PUMP MOTOR
- 95. CONDENSATE PUMP MOTOR
- 96. CONDENSATE PUMP MOTOR
- 97. CONDENSATE PUMP MOTOR
- 98. CONDENSATE PUMP MOTOR
- 99. CONDENSATE PUMP MOTOR
- 100. CONDENSATE PUMP MOTOR

**NOTES:**

- 1. SEE EQUIPMENT AND MATERIALS LIST FOR EQUIPMENT AND MATERIALS
- 2. FOR EQUIPMENT LIST SEE DRAWING SET 1
- 3. SEE EQUIPMENT LIST - 81-101-A

**REFERENCE DRAWINGS:**

- DRAWING NO. 1 GENERAL ARRANGEMENT PLAN VIEW 1-101-101-A
- DRAWING NO. 2 GENERAL ARRANGEMENT PLAN VIEW 1-101-101-B
- DRAWING NO. 3 GENERAL ARRANGEMENT PLAN VIEW 1-101-101-C
- DRAWING NO. 4 GENERAL ARRANGEMENT SECTION 1-101-101-D

Project: STANFORD ENERGY CENTER CC UNIT B Drawing: GENERAL ARRANGEMENT - PLAN VIEW Scale: 1/4" = 1'-0"		Southern Company Generation Engineering and Construction Services Inc.	
Southern Power Company STANFORD ENERGY CENTER CC UNIT B GENERAL ARRANGEMENT - PLAN VIEW 1-101-101-C		Southern Power Company	
DATE	BY	CHECKED	APPROVED

DBM2500



**Attachment 2**  
**Revised Dispersion Modeling Results**

**Stanton Unit B**  
**Revised Class II Modeling – June 2007**

**Project Revisions**

1. Changes to site layout and structure heights per updated design drawings.
2. Reduce 6-cell cooling tower PM<sub>10</sub> emission rate per cell from 0.22 lb/hr (0.0277 g/s) to 0.055 lb/hr (0.0069 g/s) due to change in drift loss rate from 0.002% (rate proposed in application) to 0.0005% (permitted rate). Cooling tower exhaust parameters remain unchanged.
3. Number of coal processing trains has been reduced from four to three resulting in the following revisions to the material handling system:
  - a. System will include three Crushed Coal Storage Silos 1-3 instead of the original four (referred to as Coal Storage Bins No. 1-4 in the PSD permit application and Pulverized Coal Storage Bins No 1-4 in the PSD permit). Since only one silo can receive crushed coal at a time, system will be equipped with one common baghouse. The common baghouse on Crushed Coal Storage Silos 1-3 replaces the original four Crushed Coal Storage Silo 1-4 baghouses. Common baghouse will have an exhaust flow rate of 484 acfm (will use a nominal 500 scfm for PM/PM<sub>10</sub> emission estimates), and will be located on the northern side of the middle silo (SI2100) at an elevation approximately 135 feet above grade. Baghouse outlet PM/PM<sub>10</sub> emission rate is 0.043 lb/hr (0.0054 g/s) based on permit limit of 0.01 gr/scf.
  - b. Nitrogen will be used to convey the overhead streams from the three coal mills to baghouses for coal separation. The conveying nitrogen streams will then be cooled, dried, and recirculated back to the coal mills. System will include one common nitrogen purge stream that will discharge to atmosphere following coal separation, cooling, and drying. Purge stream flow rate is 1,500 acfm and will be located adjacent to Coal Mill No. 2 baghouse (FL2102) at an elevation approximately 215 above grade. Coal mill nitrogen purge PM/PM<sub>10</sub> emission rate is 0.129 lb/hr (0.0162 g/s) based on permit limit of 0.01 gr/scf. The nitrogen purge stream replaces the original four coal mill silo baghouses.
  - c. Ash storage silo will vent to the flare instead of atmosphere. This eliminates the previously modeled ash silo baghouse.
  - d. Makeup solids unloading system storage bin (SI0241) will have a baghouse and discharge to atmosphere. Baghouse will have an exhaust flow rate of 3,500 acfm and will be located on the northern side of SI0241 at an elevation approximately 105 feet above grade. Baghouse outlet PM/PM<sub>10</sub> emission rate is 0.300 lb/hr (0.0378 g/s) based on permit limit of 0.01 gr/scf.

## **Modeling Procedure**

1. Re-model using AERMOD and same meteorological data used for initial Unit B PSD application modeling.

Revised June, 2007

**Stanton Unit B Criteria Pollutant Maximum Impacts  
(Syngas and Natural Gas CT/HRSG Operating Scenarios)**

---

Pollutant	Averaging Time	Max. Impact (ug/m <sup>3</sup> )	Class II PSD SIL (ug/m <sup>3</sup> )	Percent of SIL
CO	8-Hour	8.54	500	1.7
	1-Hour	14.77	2,000	0.7
PM <sub>10</sub>	Annual	0.17	1	17.0
	24-Hour	1.33	5	26.6
SO <sub>2</sub>	Annual	0.09	1	9.5
	24-Hour	1.03	5	20.7
	3-Hour	3.10	25	12.4
NO <sub>2</sub>	Annual	0.61	1	61.4

---

Revised June, 2007

**Stanton Unit B Modeling Data - PM<sub>10</sub>**

Emission Source	PM <sub>10</sub>		Stack Parameters									
	PM <sub>10</sub>		Height		Diameter		Temperature		Flow Rate		Velocity	
	(lb/hr)	(g/s)	(ft)	(m)	(in)	(m)	(°F)	(K)	(ft <sup>3</sup> /min)	(m <sup>3</sup> /min)	(ft/sec)	(m/s)
Crushed Coal Storage Bins 1-3	0.043	0.0054	135.0	41.1	6.0	0.15	70.0	294.3	500	14.2	42.4	12.9
Coal Mills 1-3 N <sub>2</sub> Purge Stream	0.129	0.0162	215.0	65.5	10.0	0.25	70.0	294.3	1,500	42.5	45.8	14.0
Makeup Solids Unloading System Storage Bin	0.300	0.038	105.0	32.0	14.0	0.36	70.0	294.3	3,500	99.1	54.6	16.6

Emission Source	PM <sub>10</sub>		Stack Parameters									
	PM <sub>10</sub>		Height		Diameter		Temperature		Flow Rate		Velocity	
	(lb/hr)	(g/s)	(ft)	(m)	(ft)	(m)	(°F)	(K)	(ft <sup>3</sup> /min)	(m <sup>3</sup> /min)	(ft/sec)	(m/s)
Cooling Tower Cell No. 1	0.055	0.0069	64.0	19.5	34.0	10.4	90.0	305.4	1,361,880	38,564.2	25.0	7.6
Cooling Tower Cell No. 2	0.055	0.0069	64.0	19.5	34.0	10.4	90.0	305.4	1,361,880	38,564.2	25.0	7.6
Cooling Tower Cell No. 3	0.055	0.0069	64.0	19.5	34.0	10.4	90.0	305.4	1,361,880	38,564.2	25.0	7.6
Cooling Tower Cell No. 4	0.055	0.0069	64.0	19.5	34.0	10.4	90.0	305.4	1,361,880	38,564.2	25.0	7.6
Cooling Tower Cell No. 5	0.055	0.0069	64.0	19.5	34.0	10.4	90.0	305.4	1,361,880	38,564.2	25.0	7.6
Cooling Tower Cell No. 6	0.055	0.0069	64.0	19.5	34.0	10.4	90.0	305.4	1,361,880	38,564.2	25.0	7.6

Sources: ECT, 2007  
SCS, 2007.

Sum 8,171,282