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October 16, 2009

HAND DELIVERED

Ms. Ann Cole, Director
Division of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Review of the Continuing Need and Cost Associated with Tampa Electric Company's Five Combustion Turbines and Big Bend Rail Facility;
FPSC Docket No. 090368-EI

Dear Ms. Cole:

Enclosed for filing in the above docket are the original and five copies of Tampa Electric Company's answers to the Florida Public Service Commission Staff's First Data Request dated October 6, 2009.

Please acknowledge receipt and filing of the above by stamping the duplicate copy of this letter and returning same to this writer.

Thank you for your assistance in connection with this matter.

Sincerely,

Lee L. Willis

LLW/pp
Enclosure
cc: All parties of record (w/enc.)

COM
ECR 2
GCL 1
OPC
RCP 1
SSC
SGA 1
ADM
CLK

1. Please complete the following table with the monthly peak load forecasts for the years 2008 through 2010, developed for each of the following documents: 2007 Ten Year Site Plan, 2008 Ten Year Site Plan, 2009 Ten Year Site Plan. Also include the actual values for monthly peak load.

   a. Please provide the date when each of the load forecasts for the 2007 through 2009 Ten Year Site Plans were developed.

Monthly Peak Load Forecasts & Actual Values					
Year	Month	2007 TYSP (MW)	2008 TYSP (MW)	2009 TYSP (MW)	Actual Values (MW)
2008	01				
2008	02				
2008	03				
2008	04				
2008	05				
2008	06				
2008	07				
2008	08				
2008	09				
2008	10				
2008	11				
2008	12				
2009	01				
2009	02				
2009	03				
2009	04				
2009	05				
2009	06				
2009	07				
2009	08				
2009	09				
2009	10				
2009	11				
2009	12				
2010	01				
2010	02				
2010	03				
2010	04				
2010	05				
2010	06				
2010	07				
2010	08				

Monthly Peak Load Forecasts & Actual Values					
Year	Month	2007 TYSP (MW)	2008 TYSP (MW)	2009 TYSP (MW)	Actual Values (MW)
2010	09				
2010	10				
2010	11				
2010	12				

A. The requested information for Tampa Electric's 2007, 2008, and 2009 Ten Year Site Plans as well as the actual monthly peak load is provided in the attached table.

a. The load forecast was developed for Tampa Electric's 2007, 2008 and 2009 Ten Year Site Plans in May 2006, May 2007, and March 2008, respectively.

Monthly Peak Load Forecasts & Actual Values					
Year	Month	2007 TYSP (MW)	2008 TYSP (MW)	2009 TYSP (MW)	Actual Values (MW)
2008	01	4,488	4,457	3,709	3,709
2008	02	3,666	3,633	2,972	2,972
2008	03	3,441	3,415	3,208	2,829
2008	04	3,408	3,372	3,367	3,154
2008	05	3,903	3,877	3,771	3,649
2008	06	4,098	4,076	4,005	3,952
2008	07	4,229	4,213	4,144	3,895
2008	08	4,221	4,202	4,101	3,905
2008	09	4,068	4,045	3,906	3,794
2008	10	3,790	3,762	3,612	3,421
2008	11	3,421	3,387	3,132	2,975
2008	12	3,668	3,629	3,361	3,168
2009	01	4,615	4,582	4,320	4,080
2009	02	3,778	3,736	3,597	3,973
2009	03	3,546	3,516	3,249	3,058
2009	04	3,511	3,472	3,406	3,133
2009	05	4,017	3,988	3,805	3,545
2009	06	4,216	4,192	4,038	4,015
2009	07	4,350	4,331	4,182	3,796
2009	08	4,342	4,321	4,155	
2009	09	4,185	4,161	3,970	
2009	10	3,902	3,873	3,692	
2009	11	3,524	3,489	3,216	
2009	12	3,778	3,735	3,441	
2010	01	4,745	4,708	4,369	
2010	02	3,887	3,843	3,642	
2010	03	3,652	3,618	3,293	
2010	04	3,616	3,572	3,454	
2010	05	4,132	4,098	3,858	
2010	06	4,336	4,307	4,096	
2010	07	4,472	4,448	4,243	
2010	08	4,464	4,438	4,219	
2010	09	4,303	4,274	4,030	
2010	10	4,014	3,980	3,748	
2010	11	3,628	3,587	3,267	
2010	12	3,886	3,838	3,492	

2. Please complete the following table with TECO's monthly forecasted available capacity for the period 2008 through 2010, developed for each of the following documents: 2007 Ten Year Site Plan, 2008 Ten Year Site Plan, 2009 Ten Year Site Plan. Also complete the table with the actual values as available.

   a. Please provide an explanation for all changes to capacity, including type and amount of change.

Monthly Available Capacity Calculation: (Source)								
DATE		Total Installed Capacity (MW)	Capacity Imports (MW)	Capacity Exports (MW)	QF Purchases (MW)	Total Capacity Available (MW)	Scheduled Maintenance (MW)	Remaining Capacity Available (MW)
2008	01							
2008	02							
2008	03							
2008	04							
2008	05							
2008	06							
2008	07							
2008	08							
2008	09							
2008	10							
2008	11							
2008	12							
2009	01							
2009	02							
2009	03							
2009	04							
2009	05							
2009	06							
2009	07							
2009	08							
2009	09							
2009	10							
2009	11							
2009	12							
2010	01							
2010	02							

Monthly Available Capacity Calculation: (Source)								
DATE		Total Installed Capacity (MW)	Capacity Imports (MW)	Capacity Exports (MW)	QF Purchases (MW)	Total Capacity Available (MW)	Scheduled Maintenance (MW)	Remaining Capacity Available (MW)
2010	03							
2010	04							
2010	05							
2010	06							
2010	07							
2010	08							
2010	09							
2010	10							
2010	11							
2010	12							

A. See the attached tables for the requested monthly forecasted available capacity developed for Tampa Electric's 2007, 2008, and 2009 Ten Year Site Plans for the period 2008 through 2010 as well as the actual values through July 2009.

a. The 2010 total installed capacity change in Tampa Electric's 2007 Ten Year Site Plan was due to the planned installation of three aero combustion turbines ("CTs") each rated at 47 MW winter and 43 MW summer.

The 2009 total installed capacity changes in Tampa Electric's 2008 Ten Year Site Plan were due to 1) upratings at Big Bend, 2) the planned retirement of Big Bend CT 1, 2 and 3, and 3) the planned capacity additions of five aero CTs (two in May and three in October) rated at 62 MW winter and 52 MW summer. The total installed capacity change in 2010 was due to an uprating at Big Bend.

The 2009 total installed capacity change in Tampa Electric's 2009 Ten Year Site Plan was due to the planned installation of five aero CTs (two in April and three in Sept) rated at 61 MW winter and 56 MW summer. The total installed capacity change in 2010 was due to a derating of Big Bend 1 and Polk 1.

Monthly Available Capacity Calculation: 2007 TYSP

Date		Total Installed Capacity [MW]	Capacity Imports [MW]	Capacity Exports [MW]	QF Purchases [MW]	Total Capacity Available [MW]	Scheduled Maintenance [MW]	Remaining Capacity Available [MW]
2008	01	4,686	914	0	65	5,665	423	5,242
2008	02	4,686	914	0	65	5,665	423	5,242
2008	03	4,686	914	0	65	5,665	423	5,242
2008	04	4,332	684	0	65	5,081	1,217	3,864
2008	05	4,332	684	0	65	5,081	0	5,081
2008	06	4,332	684	0	65	5,081	0	5,081
2008	07	4,332	684	0	65	5,081	0	5,081
2008	08	4,332	684	0	65	5,081	0	5,081
2008	09	4,332	684	0	65	5,081	391	4,690
2008	10	4,332	684	0	65	5,081	678	4,403
2008	11	4,332	684	0	65	5,081	447	4,634
2008	12	4,686	914	0	65	5,665	401	5,264
2009	01	4,686	1,049	0	65	5,800	401	5,399
2009	02	4,686	1,049	0	65	5,800	401	5,399
2009	03	4,686	1,049	0	65	5,800	401	5,399
2009	04	4,332	799	0	65	5,196	0	5,196
2009	05	4,332	799	0	65	5,196	0	5,196
2009	06	4,332	799	0	65	5,196	0	5,196
2009	07	4,332	799	0	65	5,196	0	5,196
2009	08	4,332	799	0	65	5,196	0	5,196
2009	09	4,332	799	0	65	5,196	0	5,196
2009	10	4,332	799	0	65	5,196	287	4,909
2009	11	4,332	799	0	65	5,196	255	4,941
2009	12	4,531	1,049	0	65	5,645	0	5,645
2010	01	4,827	1,064	0	65	5,956	401	5,555
2010	02	4,827	1,064	0	65	5,956	401	5,555
2010	03	4,827	1,064	0	65	5,956	656	5,300
2010	04	4,461	799	0	42	5,302	287	5,015
2010	05	4,461	799	0	42	5,302	0	5,302
2010	06	4,461	799	0	42	5,302	0	5,302
2010	07	4,461	799	0	42	5,302	0	5,302
2010	08	4,461	799	0	42	5,302	0	5,302
2010	09	4,461	799	0	42	5,302	0	5,302
2010	10	4,461	799	0	42	5,302	287	5,015
2010	11	4,461	799	0	42	5,302	447	4,855
2010	12	4,657	1,064	0	42	5,763	0	5,763

Note: Capacity imports represent only firm purchases.

Monthly Available Capacity Calculation: 2008 TYSP

Date		Total Installed Capacity [MW]	Capacity Imports [MW]	Capacity Exports [MW]	QF Purchases [MW]	Total Capacity Available [MW]	Scheduled Maintenance [MW]	Remaining Capacity Available [MW]
2008	01	4,604	894	0	64	5,562	397	5,165
2008	02	4,604	894	0	64	5,562	652	4,910
2008	03	4,604	894	0	64	5,562	1,443	4,119
2008	04	4,202	709	0	64	4,975	928	4,047
2008	05	4,202	709	0	64	4,975	0	4,975
2008	06	4,202	709	0	64	4,975	0	4,975
2008	07	4,202	709	0	64	4,975	0	4,975
2008	08	4,202	709	0	64	4,975	0	4,975
2008	09	4,202	709	0	64	4,975	375	4,600
2008	10	4,202	709	0	64	4,975	375	4,600
2008	11	4,202	709	0	64	4,975	582	4,393
2008	12	4,604	894	0	64	5,562	0	5,562
2009	01	4,611	1,026	0	64	5,701	400	5,301
2009	02	4,611	1,026	0	64	5,701	400	5,301
2009	03	4,611	1,026	0	64	5,701	418	5,283
2009	04	4,209	941	0	64	5,214	17	5,197
2009	05	4,225	941	0	64	5,230	0	5,230
2009	06	4,225	941	0	64	5,230	0	5,230
2009	07	4,225	941	0	64	5,230	0	5,230
2009	08	4,225	941	0	64	5,230	0	5,230
2009	09	4,225	941	0	64	5,230	0	5,230
2009	10	4,396	941	0	64	5,401	287	5,114
2009	11	4,396	941	0	64	5,401	422	4,979
2009	12	4,921	1,026	0	64	6,011	380	5,631
2010	01	4,797	1,026	0	64	5,887	400	5,487
2010	02	4,797	1,026	0	64	5,887	400	5,487
2010	03	4,797	1,026	0	64	5,887	1,209	4,678
2010	04	4,401	941	0	40	5,382	287	5,095
2010	05	4,401	941	0	40	5,382	0	5,382
2010	06	4,401	941	0	40	5,382	0	5,382
2010	07	4,401	941	0	40	5,382	0	5,382
2010	08	4,401	941	0	40	5,382	0	5,382
2010	09	4,401	941	0	40	5,382	0	5,382
2010	10	4,401	941	0	40	5,382	287	5,095
2010	11	4,401	941	0	40	5,382	417	4,965
2010	12	4,797	1,026	0	40	5,863	0	5,863

Note: Capacity imports represent only firm purchases.

Monthly Available Capacity Calculation: 2009 TYSP

Date		Total Installed Capacity [MW]	Capacity Imports [MW]	Capacity Exports [MW]	QF Purchases [MW]	Total Capacity Available [MW]	Scheduled Maintenance [MW]	Remaining Capacity Available [MW]
2008	01	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	03	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	04	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	06	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	07	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	08	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	09	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2009	01	4,443	990	0	65	5,498	383	5,115
2009	02	4,443	990	0	65	5,498	976	4,522
2009	03	4,443	990	0	65	5,498	1,159	4,339
2009	04	4,172	905	0	65	5,142	701	4,441
2009	05	4,172	905	0	65	5,142	0	5,142
2009	06	4,172	905	0	65	5,142	0	5,142
2009	07	4,172	905	0	65	5,142	0	5,142
2009	08	4,172	905	0	65	5,142	0	5,142
2009	09	4,340	905	0	65	5,310	217	5,093
2009	10	4,340	805	0	65	5,210	634	4,576
2009	11	4,340	805	0	65	5,210	417	4,793
2009	12	4,726	890	0	65	5,681	389	5,292
2010	01	4,737	890	0	65	5,692	647	5,045
2010	02	4,737	890	0	65	5,692	766	4,926
2010	03	4,737	890	0	65	5,692	971	4,721
2010	04	4,334	805	0	42	5,181	0	5,181
2010	05	4,334	805	0	42	5,181	0	5,181
2010	06	4,334	805	0	42	5,181	0	5,181
2010	07	4,334	805	0	42	5,181	0	5,181
2010	08	4,334	805	0	42	5,181	0	5,181
2010	09	4,334	805	0	42	5,181	417	4,764
2010	10	4,334	805	0	42	5,181	0	5,181
2010	11	4,334	805	0	42	5,181	522	4,659
2010	12	4,737	890	0	42	5,669	0	5,669

Note: Capacity imports represent only firm purchases.

Monthly Available Capacity Calculation: Actual Data

Date		Total Installed Capacity [MW]	Capacity Imports [MW]	Capacity Exports [MW]	QF Purchases [MW]	Total Capacity Available [MW]	Scheduled Maintenance [MW]	Remaining Capacity Available [MW]
2008	01	4,561	894	0	64	5,518	397	5,121
2008	02	4,518	894	0	64	5,475	397	5,078
2008	03	4,423	894	0	64	5,380	397	4,983
2008	04	3,792	422	0	64	4,278	387	3,891
2008	05	3,931	684	0	64	4,679	0	4,679
2008	06	3,061	684	0	64	3,808	0	3,808
2008	07	4,182	684	0	64	4,929	0	4,929
2008	08	4,172	684	0	64	4,919	0	4,919
2008	09	3,802	784	0	64	4,650	0	4,650
2008	10	4,103	784	0	64	4,950	217	4,733
2008	11	3,381	497	0	64	3,941	541	3,400
2008	12	4,143	516	0	64	4,722	780	3,942
2009	01	4,420	637	0	65	5,122	383	4,739
2009	02	4,459	990	0	65	5,514	623	4,891
2009	03	4,408	990	0	65	5,463	623	4,840
2009	04	4,043	905	0	65	5,013	959	4,055
2009	05	3,626	618	0	65	4,309	0	4,309
2009	06	3,030	905	0	65	4,000	0	4,000
2009	07	3,778	618	0	65	4,461	0	4,461
2009	08	-	-	-	-	-	-	-
2009	09	-	-	-	-	-	-	-
2009	10	-	-	-	-	-	-	-
2009	11	-	-	-	-	-	-	-
2009	12	-	-	-	-	-	-	-
2010	01	-	-	-	-	-	-	-
2010	02	-	-	-	-	-	-	-
2010	03	-	-	-	-	-	-	-
2010	04	-	-	-	-	-	-	-
2010	05	-	-	-	-	-	-	-
2010	06	-	-	-	-	-	-	-
2010	07	-	-	-	-	-	-	-
2010	08	-	-	-	-	-	-	-
2010	09	-	-	-	-	-	-	-
2010	10	-	-	-	-	-	-	-
2010	11	-	-	-	-	-	-	-
2010	12	-	-	-	-	-	-	-

Note: Capacity imports represent only firm purchases.
The actual total installed capacity changes due to power purchases being unavailable or unplanned outages of existing units.

3. Please complete the following table with TECO's monthly reserve capacity for the period 2008 through 2010, developed for each of the following documents: 2007 Ten Year Site Plan, 2008 Ten Year Site Plan, 2009 Ten Year Site Plan. Also complete the table with the actual values as available.

Monthly Reserve Margin Calculation: (Source)									
DATE		Total Capacity Available	Firm Peak Demand	Reserve Margin Before Maintenance		Scheduled Maintenance		Reserve Margin After Maintenance	
		(MW)	(MW)	(MW)	(%)	(MW)		(MW)	(%)
2008	01								
2008	02								
2008	03								
2008	04								
2008	05								
2008	06								
2008	07								
2008	08								
2008	09								
2008	10								
2008	11								
2008	12								
2009	01								
2009	02								
2009	03								
2009	04								
2009	05								
2009	06								
2009	07								
2009	08								
2009	09								
2009	10								
2009	11								
2009	12								
2010	01								
2010	02								
2010	03								
2010	04								
2010	05								

Monthly Reserve Margin Calculation: (Source)									
DATE		Total Capacity Available	Firm Peak Demand	Reserve Margin Before Maintenance		Scheduled Maintenance		Reserve Margin After Maintenance	
2010	06								
2010	07								
2010	08								
2010	09								
2010	10								
2010	11								
2010	12								

A. See the attached tables for the requested monthly reserve capacity developed for Tampa Electric's 2007, 2008, and 2009 Ten Year Site Plans for the period 2008 through 2010 as well as the actual values through July 2009.

Monthly Reserve Margin Calculation: 2007 TYSP

Date		Total Capacity Available [MW]	Firm Peak Demand [MW]	Reserve Margin Before Maintenance		Scheduled Maintenance	Reserve Margin After Maintenance	
				[MW]	[%]	[MW]	[MW]	[%]
2008	01	5,665	4,365	1,300	30%	423	877	20%
2008	02	5,665	3,585	2,080	58%	423	1,657	46%
2008	03	5,665	3,375	2,290	68%	423	1,867	55%
2008	04	5,081	3,358	1,723	51%	1,217	506	15%
2008	05	5,081	3,847	1,234	32%	0	1,234	32%
2008	06	5,081	4,041	1,040	26%	0	1,040	26%
2008	07	5,081	4,169	912	22%	0	912	22%
2008	08	5,081	4,176	905	22%	0	905	22%
2008	09	5,081	4,016	1,065	27%	391	674	17%
2008	10	5,081	3,749	1,332	36%	678	654	17%
2008	11	5,081	3,344	1,737	52%	447	1,290	39%
2008	12	5,665	3,588	2,077	58%	401	1,676	47%
2009	01	5,800	4,496	1,304	29%	401	903	20%
2009	02	5,800	3,696	2,104	57%	401	1,703	46%
2009	03	5,800	3,482	2,318	67%	401	1,917	55%
2009	04	5,196	3,462	1,734	50%	0	1,734	50%
2009	05	5,196	3,962	1,234	31%	0	1,234	31%
2009	06	5,196	4,160	1,036	25%	0	1,036	25%
2009	07	5,196	4,291	905	21%	0	905	21%
2009	08	5,196	4,299	897	21%	0	897	21%
2009	09	5,196	4,135	1,061	26%	0	1,061	26%
2009	10	5,196	3,862	1,334	35%	287	1,047	27%
2009	11	5,196	3,449	1,747	51%	255	1,492	43%
2009	12	5,645	3,700	1,945	53%	0	1,945	53%
2010	01	5,956	4,628	1,328	29%	401	927	20%
2010	02	5,956	3,810	2,146	56%	401	1,745	46%
2010	03	5,956	3,589	2,367	66%	656	1,711	48%
2010	04	5,302	3,567	1,735	49%	287	1,448	41%
2010	05	5,302	4,077	1,225	30%	0	1,225	30%
2010	06	5,302	4,280	1,022	24%	0	1,022	24%
2010	07	5,302	4,413	889	20%	0	889	20%
2010	08	5,302	4,421	881	20%	0	881	20%
2010	09	5,302	4,253	1,049	25%	0	1,049	25%
2010	10	5,302	3,974	1,328	33%	287	1,041	26%
2010	11	5,302	3,554	1,748	49%	447	1,301	37%
2010	12	5,763	3,809	1,954	51%	0	1,954	51%

Note: Capacity imports represent only firm purchases.

Monthly Reserve Margin Calculation: 2008 TYSP

Date		Total Capacity Available [MW]	Firm Peak Demand [MW]	Reserve Margin Before Maintenance		Scheduled Maintenance	Reserve Margin After Maintenance	
				[MW]	[%]	[MW]	[MW]	[%]
2008	01	5,562	4,321	1,240	29%	397	843	20%
2008	02	5,562	3,540	2,021	57%	652	1,369	39%
2008	03	5,562	3,336	2,225	67%	1,443	782	23%
2008	04	4,975	3,314	1,660	50%	928	732	22%
2008	05	4,975	3,813	1,161	30%	0	1,161	30%
2008	06	4,975	4,011	964	24%	0	964	24%
2008	07	4,975	4,133	841	20%	0	841	20%
2008	08	4,975	4,149	825	20%	0	825	20%
2008	09	4,975	3,984	990	25%	375	615	15%
2008	10	4,975	3,710	1,265	34%	375	890	24%
2008	11	4,975	3,298	1,676	51%	582	1,094	33%
2008	12	5,562	3,540	2,022	57%	0	2,022	57%
2009	01	5,701	4,428	1,272	29%	400	872	20%
2009	02	5,701	3,630	2,070	57%	400	1,670	46%
2009	03	5,701	3,421	2,279	67%	418	1,861	54%
2009	04	5,214	3,400	1,814	53%	17	1,797	53%
2009	05	5,230	3,909	1,321	34%	0	1,321	34%
2009	06	5,230	4,111	1,118	27%	0	1,118	27%
2009	07	5,230	4,235	995	23%	0	995	23%
2009	08	5,230	4,245	984	23%	0	984	23%
2009	09	5,230	4,085	1,145	28%	0	1,145	28%
2009	10	5,401	3,806	1,595	42%	287	1,308	34%
2009	11	5,401	3,388	2,013	59%	422	1,591	47%
2009	12	5,882	3,626	2,256	62%	380	1,876	52%
2010	01	5,887	4,548	1,339	29%	400	939	21%
2010	02	5,887	3,733	2,154	58%	400	1,754	47%
2010	03	5,887	3,520	2,367	67%	1,209	1,158	33%
2010	04	5,382	3,495	1,887	54%	287	1,600	46%
2010	05	5,382	4,013	1,369	34%	0	1,369	34%
2010	06	5,382	4,220	1,162	28%	0	1,162	28%
2010	07	5,382	4,345	1,037	24%	0	1,037	24%
2010	08	5,382	4,355	1,027	24%	0	1,027	24%
2010	09	5,382	4,192	1,190	28%	0	1,190	28%
2010	10	5,382	3,908	1,475	38%	287	1,188	30%
2010	11	5,382	3,482	1,900	55%	417	1,483	43%
2010	12	5,863	3,724	2,139	57%	0	2,139	57%

Note: Capacity imports represent only firm purchases.

Monthly Reserve Margin Calculation: 2009 TYSP

Date		Total Capacity Available [MW]	Firm Peak Demand [MW]	Reserve Margin Before Maintenance		Scheduled Maintenance	Reserve Margin After Maintenance	
				[MW]	[%]	[MW]	[MW]	[%]
2008	01	5,562	4,321	1,240	29%	397	843	20%
2008	02	5,562	3,540	2,021	57%	1,443	578	16%
2008	03	5,562	3,336	2,225	67%	1,443	782	23%
2008	04	4,975	3,314	1,660	50%	604	1,056	32%
2008	05	4,975	3,813	1,161	30%	387	774	20%
2008	06	4,975	4,011	964	24%	0	964	24%
2008	07	4,975	4,133	841	20%	0	841	20%
2008	08	4,975	4,149	825	20%	0	825	20%
2008	09	4,975	3,984	990	25%	0	990	25%
2008	10	4,975	3,710	1,265	34%	250	1,015	27%
2008	11	4,975	3,298	1,676	51%	1,145	531	16%
2008	12	5,562	3,540	2,022	57%	395	1,627	46%
2009	01	5,498	4,174	1,324	32%	383	941	23%
2009	02	5,498	3,493	2,005	57%	976	1,029	29%
2009	03	5,498	3,155	2,343	74%	1,159	1,184	38%
2009	04	5,142	3,331	1,811	54%	701	1,110	33%
2009	05	5,142	3,724	1,418	38%	0	1,418	38%
2009	06	5,142	3,955	1,187	30%	0	1,187	30%
2009	07	5,142	4,095	1,047	26%	0	1,047	26%
2009	08	5,142	4,078	1,064	26%	0	1,064	26%
2009	09	5,310	3,892	1,418	36%	217	1,201	31%
2009	10	5,210	3,622	1,588	44%	634	954	26%
2009	11	5,210	3,118	2,092	67%	417	1,675	54%
2009	12	5,681	3,337	2,344	70%	389	1,955	59%
2010	01	5,692	4,217	1,476	35%	647	829	20%
2010	02	5,692	3,534	2,158	61%	766	1,392	39%
2010	03	5,692	3,195	2,497	78%	971	1,526	48%
2010	04	5,181	3,374	1,807	54%	0	1,807	54%
2010	05	5,181	3,770	1,411	37%	0	1,411	37%
2010	06	5,181	4,006	1,175	29%	0	1,175	29%
2010	07	5,181	4,149	1,032	25%	0	1,032	25%
2010	08	5,181	4,135	1,046	25%	0	1,046	25%
2010	09	5,181	3,945	1,236	31%	417	819	21%
2010	10	5,181	3,672	1,509	41%	0	1,509	41%
2010	11	5,181	3,165	2,016	64%	522	1,494	47%
2010	12	5,669	3,384	2,285	68%	0	2,285	68%

Note: Capacity imports represent only firm purchases.

Monthly Reserve Margin Calculation: Actual Data

Date		Total Capacity Available [MW]	Firm Peak Demand [MW]	Reserve Margin Before Maintenance [MW]	Reserve Margin Before Maintenance [%]	Scheduled Maintenance [MW]	Reserve Margin After Maintenance [MW]	Reserve Margin After Maintenance [%]
2008	01	5,518	3,862	1,656	43%	397	1,259	33%
2008	02	5,475	3,136	2,339	75%	397	1,942	62%
2008	03	5,380	2,971	2,409	81%	397	2,012	68%
2008	04	4,278	3,325	953	29%	387	566	17%
2008	05	4,679	3,823	856	22%	0	856	22%
2008	06	3,808	4,101	(293)	-7%	0	(293)	-7%
2008	07	4,929	4,052	877	22%	0	877	22%
2008	08	4,919	4,063	856	21%	0	856	21%
2008	09	4,650	3,946	704	18%	0	704	18%
2008	10	4,950	3,565	1,385	39%	217	1,168	33%
2008	11	3,941	3,119	822	26%	541	281	9%
2008	12	4,722	3,313	1,409	43%	780	629	19%
2009	01	5,122	3,821	1,301	34%	383	918	24%
2009	02	5,514	3,779	1,735	46%	623	1,112	29%
2009	03	5,463	2,950	2,513	85%	623	1,890	64%
2009	04	5,013	3,054	1,959	64%	959	1,001	33%
2009	05	4,309	3,460	849	25%	0	849	25%
2009	06	4,000	3,935	65	2%	0	65	2%
2009	07	4,461	3,639	822	23%	0	822	23%
2009	08	-	-	-	-	-	-	-
2009	09	-	-	-	-	-	-	-
2009	10	-	-	-	-	-	-	-
2009	11	-	-	-	-	-	-	-
2009	12	-	-	-	-	-	-	-
2010	01	-	-	-	-	-	-	-
2010	02	-	-	-	-	-	-	-
2010	03	-	-	-	-	-	-	-
2010	04	-	-	-	-	-	-	-
2010	05	-	-	-	-	-	-	-
2010	06	-	-	-	-	-	-	-
2010	07	-	-	-	-	-	-	-
2010	08	-	-	-	-	-	-	-
2010	09	-	-	-	-	-	-	-
2010	10	-	-	-	-	-	-	-
2010	11	-	-	-	-	-	-	-
2010	12	-	-	-	-	-	-	-

Note: Capacity imports represent only firm purchases.

4. Please complete the following table with TECO's monthly reserve capacity for the period 2009 through 2010, assuming the following scenarios: I) Only the two May CTs are completed, 2) Only one of the September CTs is completed, 3) none of the 2009 CTs are completed.

Monthly Reserve Margin Calculation: (Scenario)									
DATE		Total Capacity Available	Firm Peak Demand	Reserve Margin Before Maintenance		Scheduled Maintenance		Reserve Margin After Maintenance	
		(MW)	(MW)	(MW)	(%)	(MW)		(MW)	(%)
2009	01								
2009	02								
2009	03								
2009	04								
2009	05								
2009	06								
2009	07								
2009	08								
2009	09								
2009	10								
2009	11								
2009	12								
2010	01								
2010	02								
2010	03								
2010	04								
2010	05								
2010	06								
2010	07								
2010	08								
2010	09								
2010	10								
2010	11								
2010	12								

A. See the attached tables for the requested monthly reserve capacity for the period 2009 through 2010, assuming the following scenarios: I) Only the two May combustion turbines ("CTs") are completed, 2) Only one of the September CTs is completed, 3) none of the 2009 CTs are completed.

Monthly Reserve Margin Calculation: Scenario 1 - Only two May CTs

Date		Total Capacity Available [MW]	Firm Peak Demand [MW]	Reserve Margin Before Maintenance		Scheduled Maintenance	Reserve Margin After Maintenance	
				[MW]	[%]	[MW]	[MW]	[%]
2009	01	5,565	4,428	1,137	26%	400	737	17%
2009	02	5,565	3,630	1,935	53%	400	1,535	42%
2009	03	5,565	3,421	2,144	63%	418	1,726	50%
2009	04	5,078	3,400	1,678	49%	17	1,661	49%
2009	05	5,094	3,909	1,185	30%	0	1,185	30%
2009	06	5,094	4,111	983	24%	0	983	24%
2009	07	5,094	4,235	859	20%	0	859	20%
2009	08	5,094	4,245	849	20%	0	849	20%
2009	09	5,094	4,085	1,009	25%	0	1,009	25%
2009	10	5,094	3,806	1,288	34%	287	1,001	26%
2009	11	5,094	3,388	1,706	50%	422	1,284	38%
2009	12	5,560	3,626	1,934	53%	380	1,554	43%
2010	01	5,565	4,548	1,017	22%	400	617	14%
2010	02	5,565	3,733	1,832	49%	400	1,432	38%
2010	03	5,565	3,520	2,045	58%	1,209	836	24%
2010	04	5,075	3,495	1,580	45%	287	1,293	37%
2010	05	5,075	4,013	1,062	26%	0	1,062	26%
2010	06	5,075	4,220	855	20%	0	855	20%
2010	07	5,075	4,345	730	17%	0	730	17%
2010	08	5,075	4,355	720	17%	0	720	17%
2010	09	5,075	4,192	883	21%	0	883	21%
2010	10	5,075	3,908	1,168	30%	287	881	23%
2010	11	5,075	3,482	1,593	46%	417	1,176	34%
2010	12	5,541	3,724	1,817	49%	0	1,817	49%

Note: Only firm power purchases under contract were included in the total capacity available.

Monthly Reserve Margin Calculation: Scenario 2 - Only one Sep. CT

Date		Total Capacity Available [MW]	Firm Peak Demand [MW]	Reserve Margin Before Maintenance		Scheduled Maintenance	Reserve Margin After Maintenance	
				[MW]	[%]	[MW]	[MW]	[%]
2009	01	5,565	4,428	1,137	26%	400	737	17%
2009	02	5,565	3,630	1,935	53%	400	1,535	42%
2009	03	5,565	3,421	2,144	63%	418	1,726	50%
2009	04	5,078	3,400	1,678	49%	17	1,661	49%
2009	05	4,980	3,909	1,071	27%	0	1,071	27%
2009	06	4,980	4,111	869	21%	0	869	21%
2009	07	4,980	4,235	745	18%	0	745	18%
2009	08	4,980	4,245	735	17%	0	735	17%
2009	09	5,037	4,085	952	23%	0	952	23%
2009	10	5,037	3,806	1,231	32%	287	944	25%
2009	11	5,037	3,388	1,649	49%	422	1,227	36%
2009	12	5,498	3,626	1,872	52%	380	1,492	41%
2010	01	5,503	4,548	955	21%	400	555	12%
2010	02	5,503	3,733	1,770	47%	400	1,370	37%
2010	03	5,503	3,520	1,983	56%	1,209	774	22%
2010	04	5,018	3,495	1,523	44%	287	1,236	35%
2010	05	5,018	4,013	1,005	25%	0	1,005	25%
2010	06	5,018	4,220	798	19%	0	798	19%
2010	07	5,018	4,345	673	15%	0	673	15%
2010	08	5,018	4,355	663	15%	0	663	15%
2010	09	5,018	4,192	826	20%	0	826	20%
2010	10	5,018	3,908	1,111	28%	287	824	21%
2010	11	5,018	3,482	1,536	44%	417	1,119	32%
2010	12	5,479	3,724	1,755	47%	0	1,755	47%

Note: Only firm power purchases under contract were included in the total capacity available.

Monthly Reserve Margin Calculation: Scenario 3 - None of the 2009 CTs

Date		Total Capacity Available [MW]	Firm Peak Demand [MW]	Reserve Margin Before Maintenance		Scheduled Maintenance	Reserve Margin After Maintenance	
				[MW]	[%]	[MW]	[MW]	[%]
2009	01	5,565	4,428	1,137	26%	400	737	17%
2009	02	5,565	3,630	1,935	53%	400	1,535	42%
2009	03	5,565	3,421	2,144	63%	418	1,726	50%
2009	04	5,078	3,400	1,678	49%	17	1,661	49%
2009	05	4,980	3,909	1,071	27%	0	1,071	27%
2009	06	4,980	4,111	869	21%	0	869	21%
2009	07	4,980	4,235	745	18%	0	745	18%
2009	08	4,980	4,245	735	17%	0	735	17%
2009	09	4,980	4,085	895	22%	0	895	22%
2009	10	4,980	3,806	1,174	31%	287	887	23%
2009	11	4,980	3,388	1,592	47%	422	1,170	35%
2009	12	5,436	3,626	1,810	50%	380	1,430	39%
2010	01	5,441	4,548	893	20%	400	493	11%
2010	02	5,441	3,733	1,708	46%	400	1,308	35%
2010	03	5,441	3,520	1,921	55%	1,209	712	20%
2010	04	4,961	3,495	1,466	42%	287	1,179	34%
2010	05	4,961	4,013	948	24%	0	948	24%
2010	06	4,961	4,220	741	18%	0	741	18%
2010	07	4,961	4,345	616	14%	0	616	14%
2010	08	4,961	4,355	606	14%	0	606	14%
2010	09	4,961	4,192	769	18%	0	769	18%
2010	10	4,961	3,908	1,054	27%	287	767	20%
2010	11	4,961	3,482	1,479	42%	417	1,062	30%
2010	12	5,417	3,724	1,693	45%	0	1,693	45%

Note: Only firm power purchases under contract were included in the total capacity available.

5. Please explain or describe any retirements, extended outages, or capacity rating reductions of installed units that occurred during 2008 and thus far in 2009.

A. The attached table provides any retirements, additions or capacity reductions of installed units that occurred during 2008 and thus far in 2009. The three retired Big Bend CTs were originally placed into service between February 1969 and November 1974. Due to their respective ages and performance and economic characteristics, they had reached the end of their useful life and were retired from service in 2008. Also, Phillips Station was placed into long-term reserve standby. The two Phillips residual oil fired diesel engines were originally placed into service in June 1983. Given the current pricing of oil versus other fuels, these units have been used on a very limited basis. Future economic analysis will determine what options are best suited for this station. In addition, the capacity ratings for several of the company's generating units were changed slightly. These upratings and deratings are the result of performance testing or actual equipment performance.

Extended outages of installed units that occurred during 2008 and thus far in 2009 are as follows:

- Big Bend 3 — 01/01/2008 – 04/28/2008
  Planned SCR installation outage, which also included repairs of defects in the steam turbine rotor that were discovered during the outage
- Big Bend 2 — 11/24/2008 – 04/07/2009
  Planned SCR installation outage
- Polk 1 — 02/01/2009 – 03/23/2009
  Planned outage which included repairs of defects in the CT that were discovered during the outage
- Big Bend 2 — 04/22/2009 – 05/26/2009 and 06/19/2009 – 08/14/2009
  Forced outages related to turbine component failures

Unit	2008 Capacity (MW)	2009 Capacity (MW)	Delta Capacity (MW)	Explanation
BB 1	375	379	4	Unit Uprate
BB 2	385	385	0	N/A
BB 3	387	381	-6	Unit Derate
BB 4	418	417	-1	Unit Derate
BB CT 1	10	0	-10	Retired 12/31/2008
BB CT 2	49	0	-49	Retired 09/26/2008
BB CT 3	39	0	-39	Retired 09/26/2008
BB CT 4		56	56	Commissioned 08/26/2009
Bayside 1	700	701	1	Unit Uprate
Bayside 2	928	929	1	Unit Uprate
Bayside 3		56	56	Commissioned 07/13/2009
Bayside 4		56	56	Commissioned 07/13/2009
Bayside 5		56	56	Commissioned 04/27/2009
Bayside 6		56	56	Commissioned 04/20/2009
Polk 1	250	235	-15	Unit Derate
Polk 2	159	151	-8	Unit Derate
Polk 3	164	151	-13	Unit Derate
Polk 4	149	151	2	Unit Uprate
Polk 5	149	151	2	Unit Uprate
Phillips 1	17	0	-17	Long-Term Standby 09/04/2009
Phillips 2	17	0	-17	Long-Term Standby 09/04/2009
COT	6	6	0	N/A
Total Installed Generation	4202	4317	115	

All capacities are net summer ratings.

6. Please explain or describe the requirement of a 20% planning reserve margin criteria, its effect upon the reliability of TECO's system, and its origin.

A. The purpose of a 20 percent minimum planning reserve margin criteria is to ensure the availability of adequate supply and demand side resources to meet firm peak demand requirements during both the summer and winter system peak periods. This additional installed capacity ensures reliable service in the event an unplanned outage occurs on a generating unit during the seasonal peak periods.

The minimum 20 percent reserve margin criteria was established due to an expressed concern by the Florida Public Service Commission ("Commission") regarding the adequacy of the planned reserve margin for Peninsular Florida, after reviewing the Ten Year Site Plans filed in 1997 and 1998. In Docket No. 981890-EU, the Commission issued Order No. PSC-99-2507-S-EU on December 22, 1999, which approved the stipulation between Florida Power & Light, Florida Power Corporation and Tampa Electric Company whereby the companies voluntarily agreed to meet a minimum 20 percent installed reserve requirement by summer 2004. The Stipulation also preserved the Commission's authority with regard to evaluating the adequacy of reserves in peninsular Florida. Tampa Electric maintains the minimum 20 percent reserve margin planning criterion as shown in its Ten Year Site Plan through energy resources in excess of the planned seasonal (*i.e.* winter and summer) firm peak demand. The 20 percent minimum planning reserve margin requirement has enabled Tampa Electric to ensure reliability of service during planned outages and peak demand periods. For example, Tampa Electric Company does not typically schedule planned outages during summer or winter peak demand periods; however, due to the extended outages related to the installation of the SCRs on each of the Big Bend coal assets, the reserve margin provided the opportunity for the company to schedule planned outages for these units during the winter peak periods. The final SCR outage on Big Bend Unit 1 is scheduled for November 28, 2009 through April 8, 2010. The five aero CTs will provide capacity and energy during the extended outage.

7. Please explain or describe TECO's blackstart requirements, and how they have changed annually for periods 2007, 2008, and projected for 2009.
a. How was TECO's blackstart capability served previously in 2007 and 2008?
b. How have the two combustion turbines installed in 2009 contributed to TECO's blackstart capabilities?
c. How will the three additional combustion turbines to be installed in 2009 serve TECO's blackstart needs?

A. Black start capability is the ability to start the unit independent of an energized connection to the bulk electric system such as in a blackout condition. A relatively small, on-site engine driven generator can provide the electric power required to start these units. Once an aero-derivative unit has been started, energy can be switched internally to power the auxiliaries required to start a larger generating unit at the station. This generation can be used to re-energize the electric grid to provide power to Tampa Electric customers without waiting for an external source from another electric utility. This black start capability allows for faster restoration of electric service to customers following hurricanes or other major system disturbances.

a. Tampa Electric is required to maintain sufficient blackstart generator capability to initiate restoration of the power system or to make contractual arrangements with others to provide that restoration capability. Tampa Electric met this requirement in 2007 by designating Big Bend CT1 as its blackstart unit. This unit was capable of starting without electrical assistance from the grid and thus, be used to start larger steam units that do not possess that capability. Prior to the retirement of Big Bend CT1 on December 31, 2008, the Phillips Station was designated as the company's blackstart unit. This designation was made as an interim solution until the aero CTs were placed in service. Beginning in May 2009, the addition of the aero CTs and the associated starting diesel generator has greatly increased the quality and robustness of the company's blackstart capabilities.

b. Bayside CTs 5 and 6 and the associated starting diesel generator went into commercial operation in late April 2009. These units serve Tampa Electric's blackstart capabilities by being directly connected to the 69 kV system at the Bayside Power Station, which provides starting power to other Bayside units without the need for an energized connection to the grid. Bayside CTs 5 and 6 also provide the capability to serve customers directly from the 69 kV system. These capabilities

provide a great deal of needed flexibility during restoration of the electrical grid. Particularly, from an event that damages the transmission interconnection with adjacent utilities.

c. Bayside CTs 3 and 4 went into commercial operation in July 2009. These units, when started by its blackstart diesel generator serve Tampa Electric's blackstart capabilities by being directly connected to the 138 kV system at the Gannon substation which provides an alternative path for starting power to other Bayside units without the need for an energized connection to the grid. Bayside CTs 3 and 4 also provide the capability to serve customers directly from the 138 kV system. Again, these capabilities provide even more flexibility and restoration options following an event that damages the transmission interconnection with adjacent utilities.

Prior to placing Bayside CTs 3 through 6 in service, Bayside Power Station had no black start capability. Tampa Electric was dependent on receiving power over the grid to restart Bayside Power Station in blackout conditions.

Big Bend CT 4 went into commercial operations in August 2009. This unit serves Tampa Electric's blackstart capabilities by being directly connected to the 230 kV system at the Big Bend Station which provides starting power to other Big Bend units without the need for an energized connection to the grid. Big Bend CT 4 also provides the capability to serve customers utilizing the 230 kV system. This unit can operate on either natural gas or distillate oil fuel. This provides additional reliability for blackstart needs as well as the ability to serve load during periods of natural gas supply or transportation shortages.

8. Please explain or describe TECO's Operating Reserve Margin requirements and its effect upon the reliability of TECO's system, and its origin.

a. Please discuss TECO's level one contingency requirements, spinning reserve, and non-spinning reserve. Please also discuss how these requirements relate to each other, and how these influence how TECO's plans for reliability requirements.

A. Tampa Electric Company is a member of the Florida Reserve Sharing Group ("FRSG"). As a member of the FRSG, Tampa Electric's operating reserve obligation or allocation is 9.3 percent or 86 MW of the total reserve requirement of 930 MW. Operating reserves are necessary to ensure sufficient capability exists to meet the North America Electric Reliability Corporation ("NERC") Disturbance Control Standard and to reestablish resource and demand balance following a reportable disturbance. The origin of this requirement emanates from NERC.

a. A key element of this operating reserve requirement is that the reserve MW must be fully available to support reliability of the bulk electric system within 10 minutes of being called upon. The most common method of providing operating reserves in Florida is through the combination of supply-side spinning reserves and demand-side load management. The five CTs have quick start capability, which enables these units to go from off-line to full load within 10 minutes. This quick start feature provides a far more economical option to meet the company's operating reserve obligation than through the use of spinning reserves, which are a high-quality, more expensive subset of operating reserves. Typically, spinning reserves are provided by keeping larger base and intermediate-load units running at lower, inefficient load points. The use of quick start, peaking CTs to provide operating reserves in lieu of using spinning reserves benefits customers by: enabling in-service generators to operate at higher average outputs, which improves efficiency; reducing heat rate; lowering overall system fuel and operating costs; lowering emissions. The use of the quick start capable generating units for operating reserves rather than demand-side load management curtailments of customer load is a less impactful alternative, which limits the need to interrupt customer load in such circumstances.

The quick start capability of the five CTs is expected to provide fuel savings of approximately $25 million over the life of the assets. The

2009 savings resulting from this quick start capability were factored into Tampa Electric's most recent fuel adjustment mid-course correction that reduced the company's fuel adjustment factor effective May 8, 2009. Because Big Bend CT 4 and Bayside CTs 3 and 4 were placed in service well ahead of schedule, additional fuel savings were incorporated into the fuel adjustment true-up and will be flowed through to customers in revised fuel factors effective January 2010.

9. Please explain or describe how TECO served its Operating Reserve Margin requirements for 2007, 2008, and projected for 2009. Please also include what the impact will be of the remaining 2009 combustion turbines, if put into service on schedule.

A. Tampa Electric met its 2007 and 2008 operating reserve obligation of 88 MW by having a minimum of 22 MW of spinning reserves available at all times and with demand side assets. The addition of Bayside CTs 5 and 6 has already avoided the need to interrupt demand-side load management customer load on 15 occasions through August 2009. When reserves are called upon by the FRSG, the company provides the necessary reserves immediately and then has 15 minutes to get back to its pre-disturbance condition. Effective August 10, 2009, Tampa Electric's operating reserve obligation was changed to 86 MW.

The remaining 2009 CTs were put into service ahead of schedule and have positively impacted Tampa Electric's by providing operating reserves when the other aero combustion turbines are already economically dispatched to meet load requirements. Also, the addition of Bayside CTs 3 and 4 has already avoided the need to interrupt demand-side load management customer load on six occasions through August 2009. While demand-side load management remains an important part of Tampa Electric's integrated resource plan, it is important not to interrupt these customers so frequently that they may not remain on this program.

10. Please explain or describe how the Operating Reserve Margin relates to the company's planning reserve margin criteria.

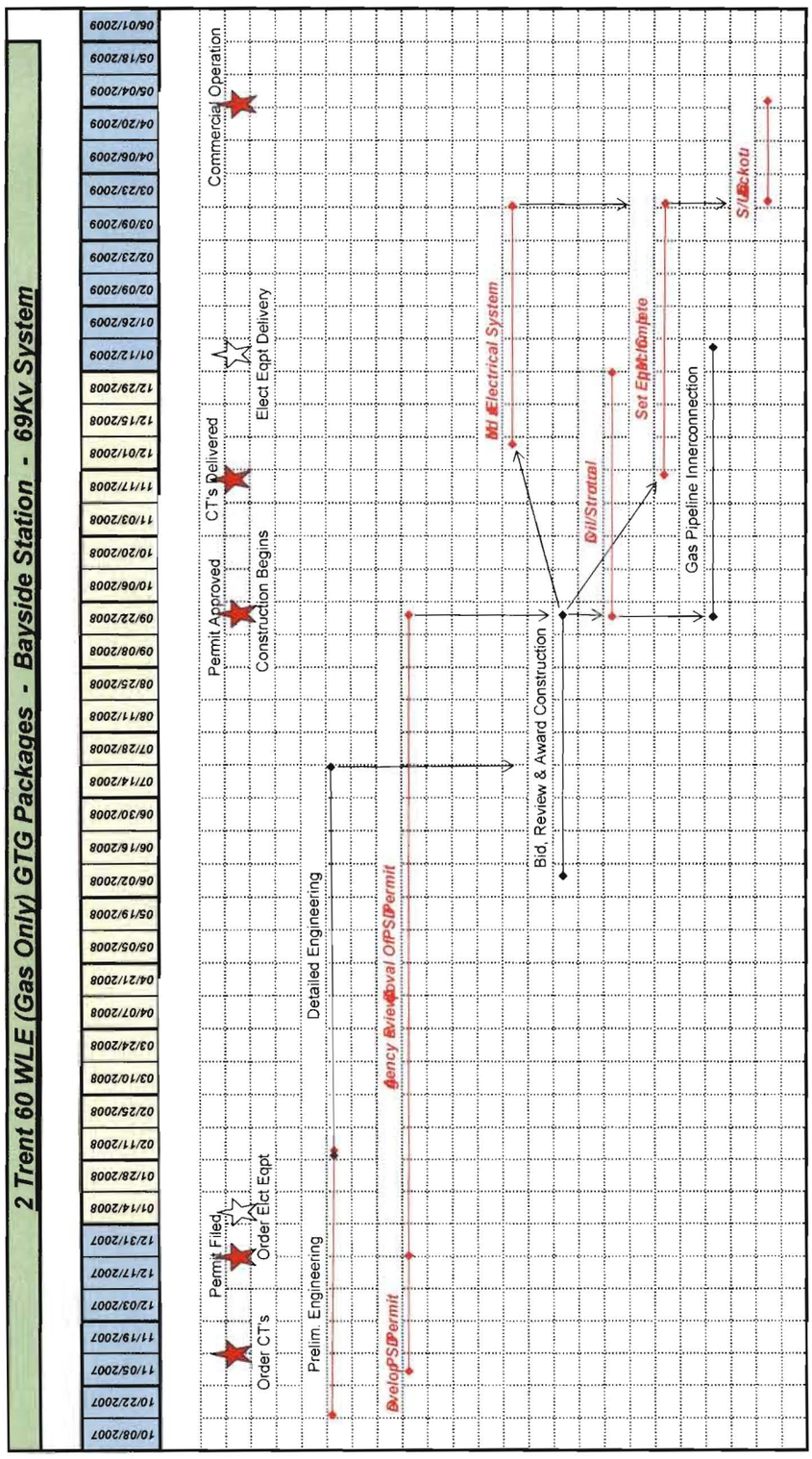
A. Tampa Electric's operating reserve margin is independent of the planning reserve margin criteria. Tampa Electric's required operating reserve margin of 86 MW is a function of its share of the statewide operating reserves needed to provide for unexpected supply interruptions. These operating reserves are managed in real time as part of the normal operations of the system. The operating reserve margin obligation affects daily unit commitment and economic dispatch decisions.

The minimum planning reserve margin criteria of 20 percent is a long-term requirement that ensures adequate generating assets and demand side options will be available to meet forecasted peak demand periods on Tampa Electric's system. The minimum planning reserve margin criteria affects capital allocation decisions over a much greater time horizon.

11. Please provide a copy of the timelines for the 2009 combustion turbines (CT) including all major dates, such as when need for future generating capacity is identified, date project evaluations were started and completed, date project evaluations were submitted to the Board of Directors and approved by the Board of Directors, dates permits were obtained, procure equipment, construction, start-up and commissioning and similar events.

A. The initial 2009 need for aero CTs was identified in the company's 2006 Ten Year Site Plan, which was filed with the Commission on April 1, 2006. Tampa Electric issued a peaking capacity RFP on August 31, 2006. After evaluating the proposals, the company pursued a self build option to help meet its forecasted capacity need. The final evaluation of the CT technology alternatives was completed on December 10, 2007. A copy of the final evaluation memorandum regarding the recommended CT technology is provided in the company's response to Staff's Data Request No. 12. The contract for the CT generator equipment was awarded December 21, 2007.

Attached are copies of the summary and detail activity project timelines for the 2009 CTs which include milestones such as permitting, engineering (preliminary and design), procurement, delivery of major equipment, site construction and unit commissioning. In addition, attached are excerpts from the November 1, 2007 Board of Directors briefing book and meeting minutes discussing and approving the project recommendations to construct the five aero CTs.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11/19/2007
12/03/2007
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12/31/2007
01/14/2008
01/28/2008
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02/25/2008
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12/15/2008
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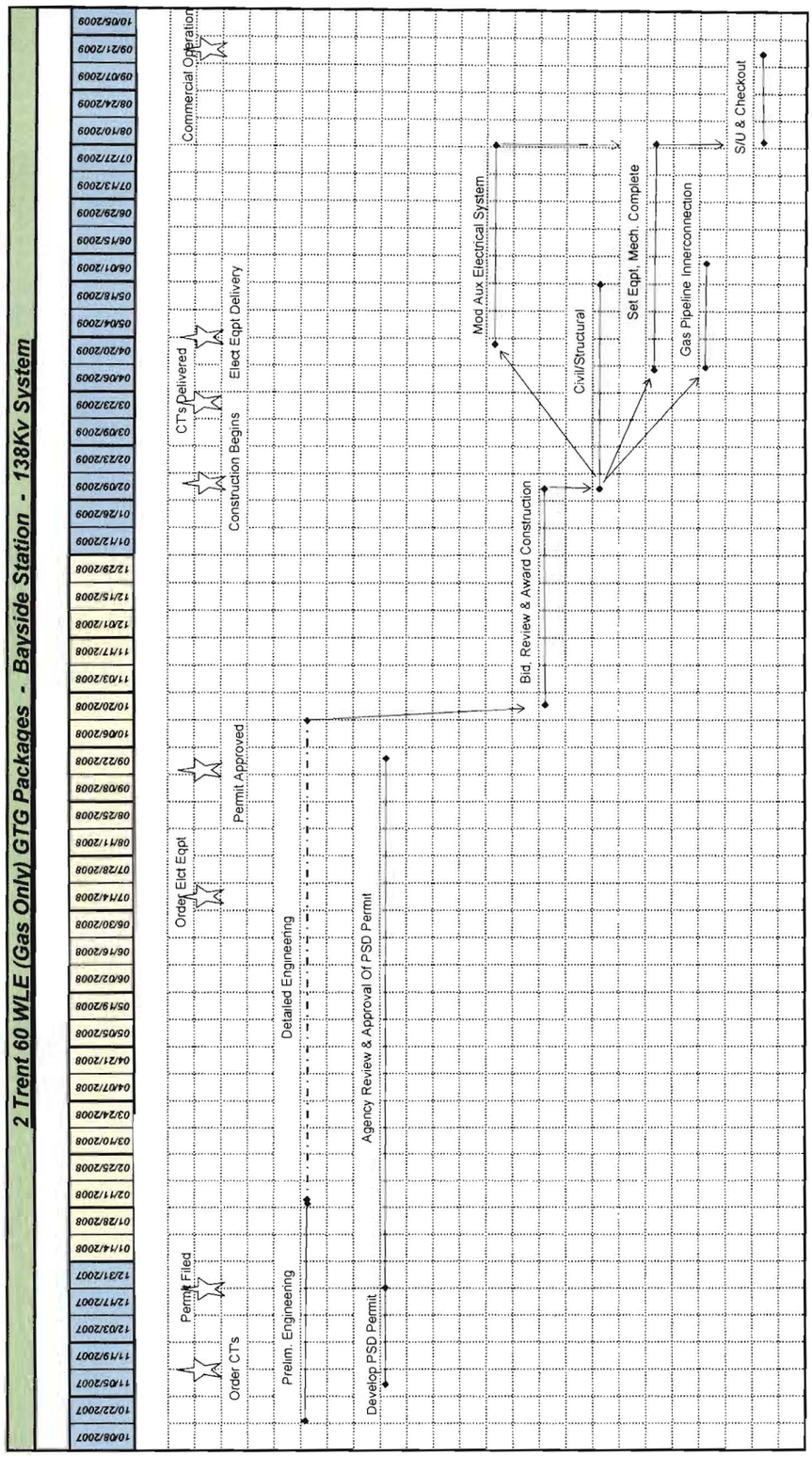
02/09/2009
02/23/2009
03/09/2009
03/23/2009
04/06/2009
04/20/2009
05/04/2009
05/18/2009
06/01/2009
Order CTs
Permit Filed
Order Elct Eqpt
Prelim. Engineering
Develop PSD Permit
Detailed Engineering
Agency Review/Approval of PSD Permit
Permit Approved
Construction Begins
CT's Delivered
Elect Eqpt Delivery
Bid, Review & Award Construction
Mfr Electrical System
Bill/Stratal
Set Eqpt/Complete
Gas Pipeline Interconnection
Commercial Operation

12/18/07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11/19/2007
12/3/2007
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02/09/2009
02/23/2009
03/09/2009
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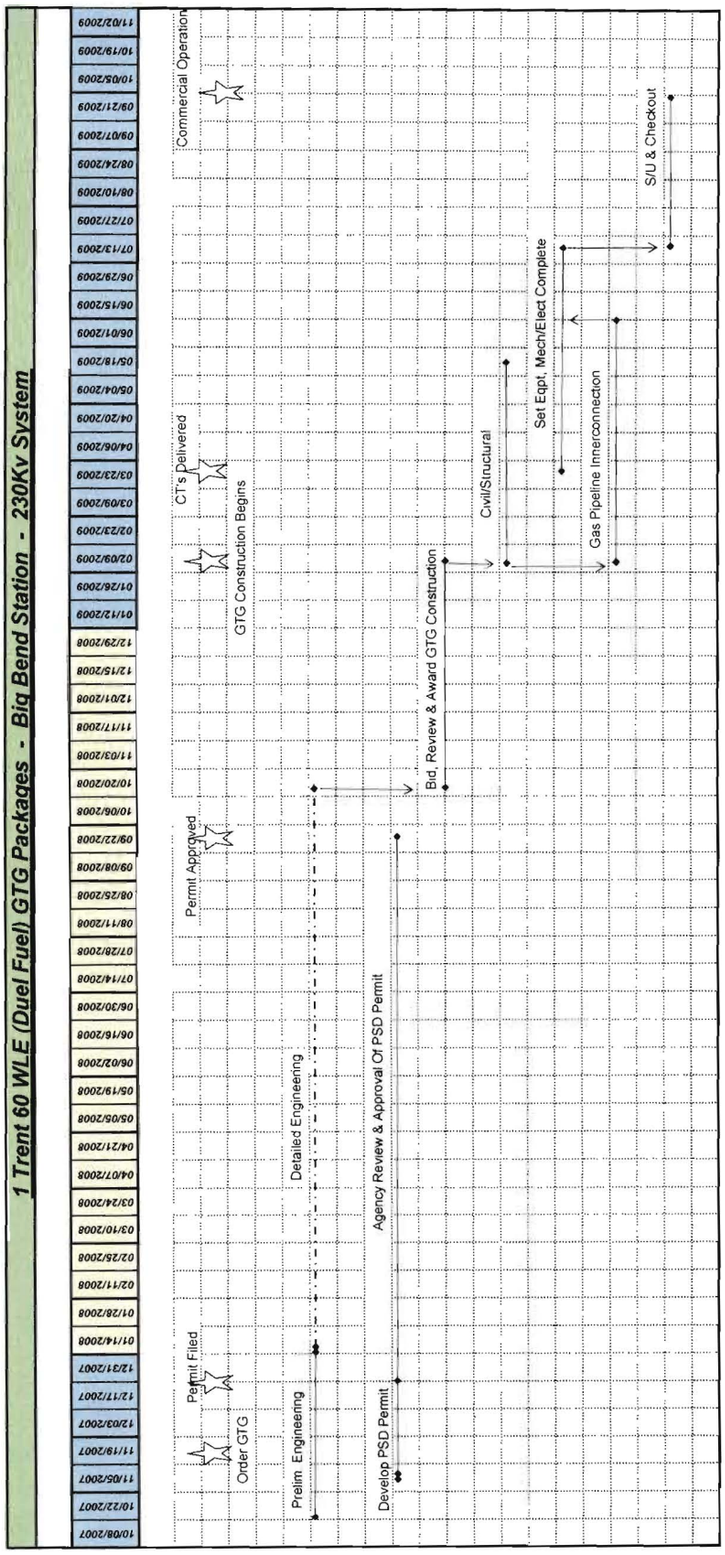
06/15/2009
06/29/2009
07/13/2009
07/27/2009
08/10/2009
08/24/2009
09/07/2009
09/21/2009
10/05/2009
Order CT's
Permit Filed
Prelim. Engineering
Develop PSD Permit
Agency Review & Approval Of PSD Permit
Detailed Engineering
Order Elct Eqpt
Permit Approved
Bid, Review & Award Construction
Construction Begins
CTs Delivered
Elect Eqpt Delivery
Commercial Operation
Mod Aux Electrical System
Civil/Structural
Set Eqpt, Mech. Complete
Gas Pipeline Innerconnection
S/U & Checkout

12/18/07


1 Trent 60 WLE (Duel Fuel) GTG Packages - Big Bend Station - 230Kv System
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11/05/2007
11/19/2007
12/03/2007
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02/25/2008
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03/24/2008
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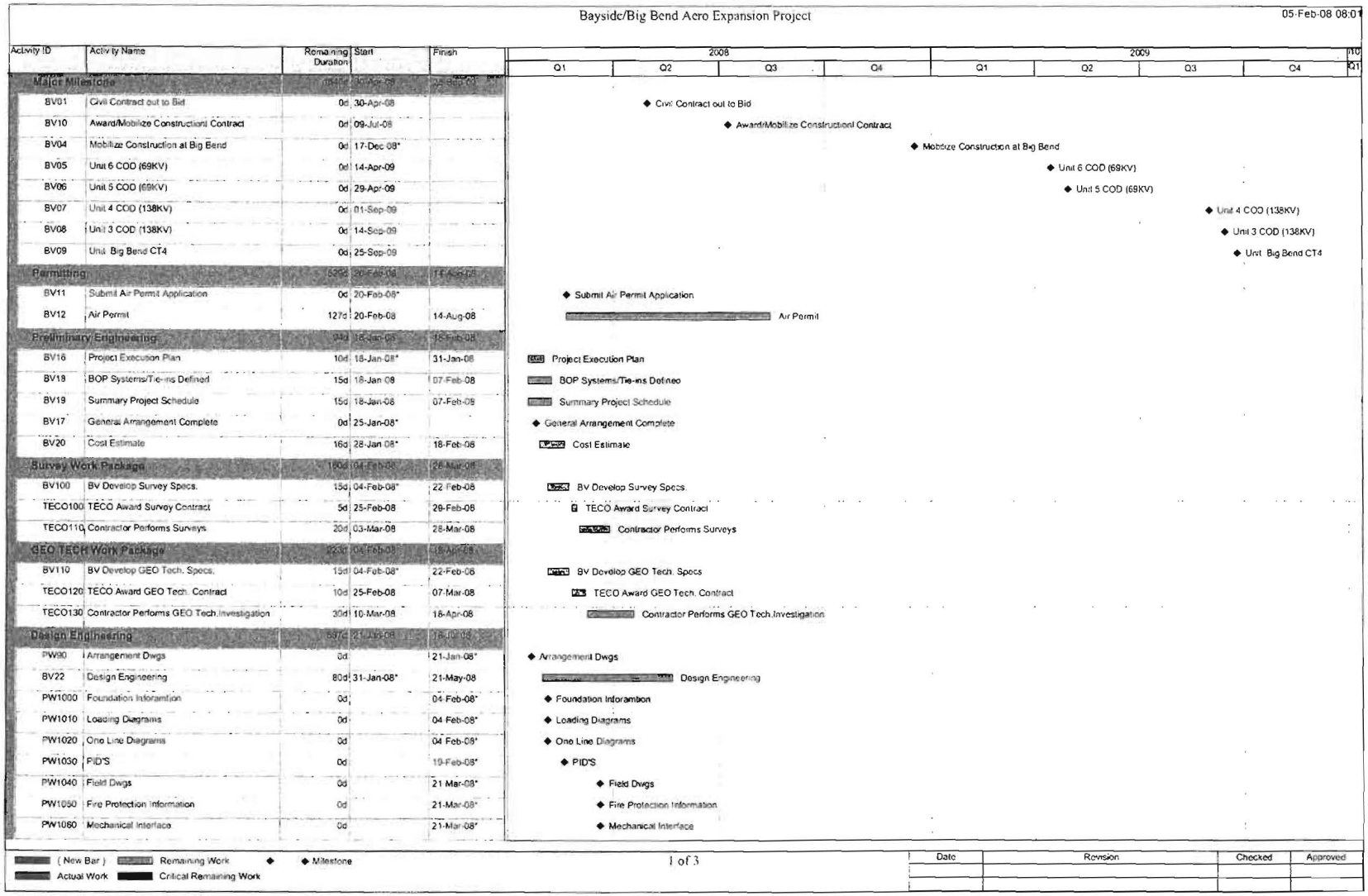
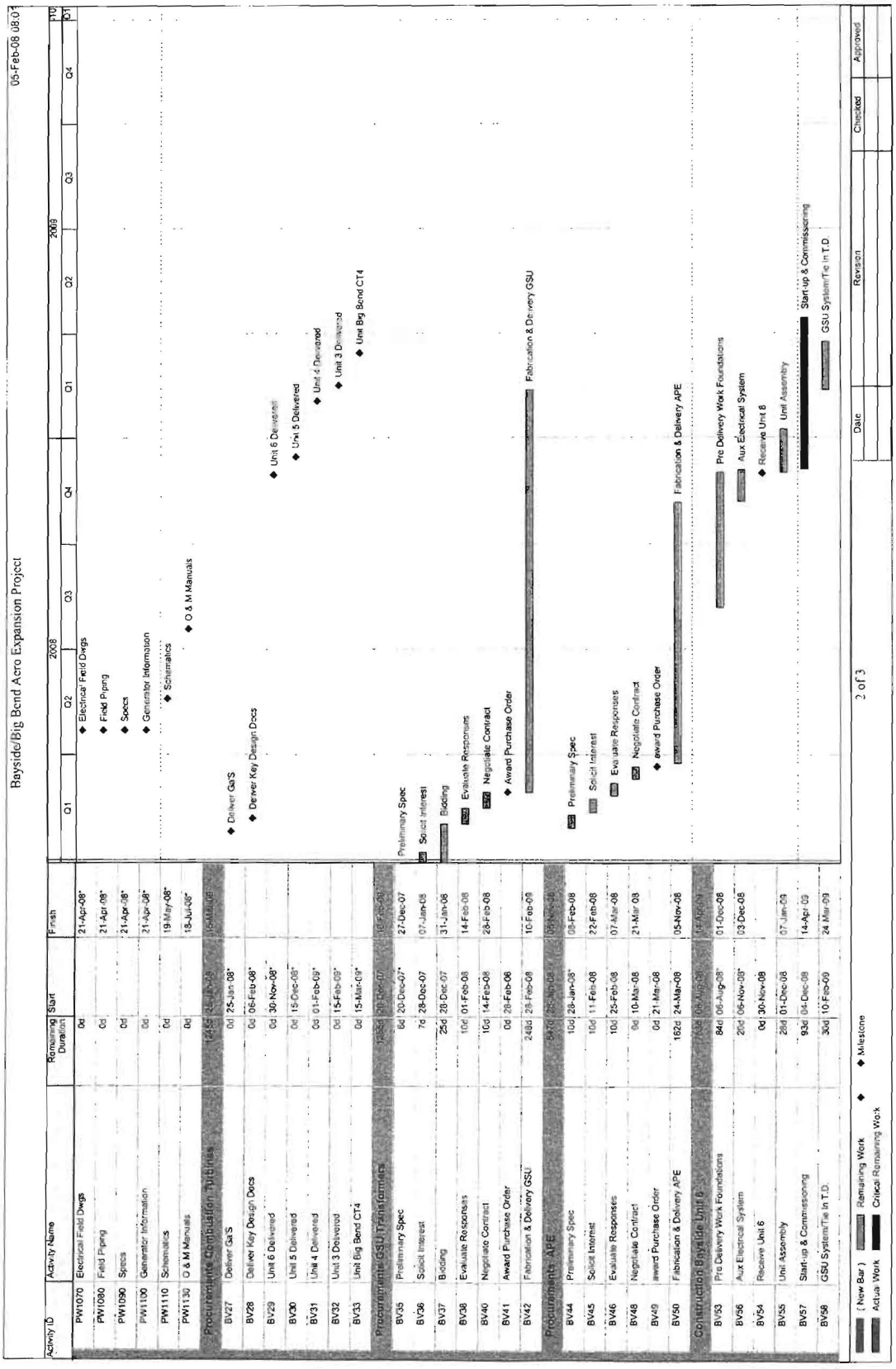
07/13/2009
07/27/2009
08/10/2009
08/24/2009
09/07/2009
09/21/2009
10/05/2009
10/19/2009
11/02/2009
Permit Filed
Order GTG
Prelim Engineering
Develop PSD Permit
Detailed Engineering
Agency Review & Approval Of PSD Permit
Permit Approved
GTG Construction Begins
CT's Delivered
Bid, Review & Award GTG Construction
Civil/Structural
Set Eqpt. Mech/Elect Complete
Gas Pipeline Interconnection
S/U & Checkout
Commercial Operation

12/18/07


Bayside/Big Bend Acro Expansion Project
05-Feb-08 08:01
Activity ID
Activity Name
Remaining Duration
Start
Finish
2008
2009
Q1
Q2
Q3
Q4
Major Milestone
BV01 Civil Contract out to Bid 0d 30-Apr-08
BV10 Award/Mobilize Construction Contract 0d 09-Jul-08
BV04 Mobilize Construction at Big Bend 0d 17-Dec-08*
BV05 Unit 6 COD (69KV) 0d 14-Apr-09
BV06 Unit 5 COD (69KV) 0d 29-Apr-09
BV07 Unit 4 COD (138KV) 0d 01-Sep-09
BV08 Unit 3 COD (138KV) 0d 14-Sep-09
BV09 Unit Big Bend CT4 0d 25-Sep-09
Permitting
BV11 Submit Air Permit Application 0d 20-Feb-08*
BV12 Air Permit 127d 20-Feb-08 14-Aug-08
Preliminary Engineering
BV16 Project Execution Plan 10d 18-Jan-08* 31-Jan-08
BV18 BOP Systems/Tie-ins Defined 15d 18-Jan-08 07-Feb-08
BV19 Summary Project Schedule 15d 18-Jan-08 07-Feb-08
BV17 General Arrangement Complete 0d 25-Jan-08*
BV20 Cost Estimate 16d 28-Jan-08* 18-Feb-08
Survey Work Package
BV100 BV Develop Survey Specs. 15d 04-Feb-08* 22-Feb-08
TECO100 TECO Award Survey Contract 5d 25-Feb-08 29-Feb-08
TECO110 Contractor Performs Surveys 20d 03-Mar-08 28-Mar-08
GEO TECH Work Package
BV110 BV Develop GEO Tech. Specs. 15d 04-Feb-08* 22-Feb-08
TECO120 TECO Award GEO Tech. Contract 10d 25-Feb-08 07-Mar-08
TECO130 Contractor Performs GEO Tech Investigation 30d 10-Mar-08 18-Apr-08
Design Engineering
PW90 Arrangement Dwgs 0d 21-Jan-08*
BV22 Design Engineering 80d 31-Jan-08* 21-May-08
PW1000 Foundation Inforamtion 0d 04-Feb-08*
PW1010 Loading Diagrams 0d 04-Feb-08*
PW1020 One Line Diagrams 0d 04-Feb-08*
PW1030 PID'S 0d 19-Feb-08*
PW1040 Field Dwgs 0d 21-Mar-08*
PW1050 Fire Protection Information 0d 21-Mar-08*
PW1060 Mechanical Interface 0d 21-Mar-08*
Civil Contract out to Bid
Award/Mobilize Construction Contract
Mobilize Construction at Big Bend
Unit 6 COD (69KV)
Unit 5 COD (69KV)
Unit 4 COD (138KV)
Unit 3 COD (138KV)
Unit Big Bend CT4
Submit Air Permit Application
Air Permit
Project Execution Plan
BOP Systems/Tie-ins Defined
Summary Project Schedule
General Arrangement Complete
Cost Estimate
BV Develop Survey Specs.
TECO Award Survey Contract
Contractor Performs Surveys
BV Develop GEO Tech. Specs
TECO Award GEO Tech. Contract
Contractor Performs GEO Tech.Investigation
Arrangement Dwgs
Design Engineering
Foundation Inforambon
Loading Diagrams
One Line Diagrams
PID'S
Field Dwgs
Fire Protection Information
Mechanical Interface
(New Bar)
Actual Work
Remaining Work
Critical Remaining Work
Milestone
1 of 3
Date
Revision
Checked
Approved


Bayside/Big Bend Acro Expansion Project
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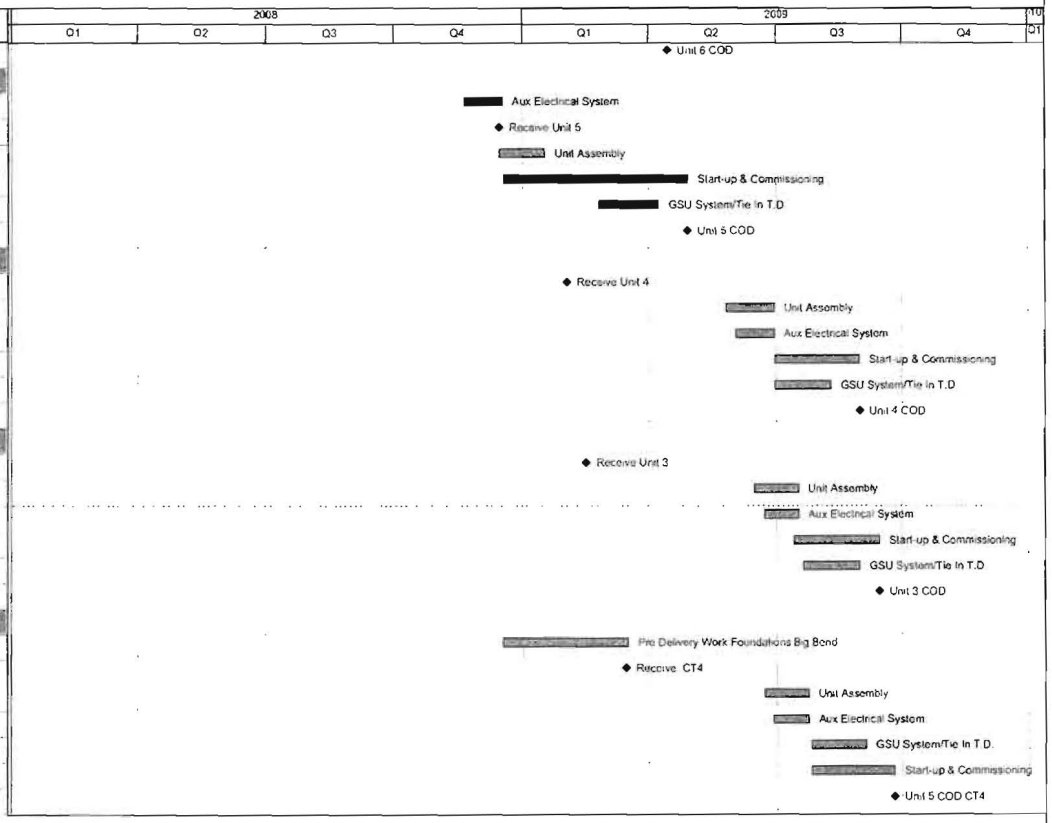
Activity ID
Activity Name
Remaining Duration
Start
Finish
2008
2009
Q1
Q2
Q3
Q4
PW1070 Electrical Field Dwgs
PW1080 Field Piping
PW1090 Specs
PW1100 Generator Information
PW1110 Schematics
PW1130 O & M Manuals
Procurement: Distribution Turbines
BV27 Deliver GaS
BV28 Deliver Key Design Docs
BV29 Unit 6 Delivered
BV30 Unit 5 Delivered
BV31 Unit 4 Delivered
BV32 Unit 3 Delivered
BV33 Unit Big Bend CT4
Procurements: GSU Transformers
BV35 Preliminary Spec
BV36 Solicit Interest
BV37 Bidding
BV38 Evaluate Responses
BV40 Negotiate Contract
BV41 Award Purchase Order
BV42 Fabrication & Delivery GSU
Procurements: APE
BV44 Preliminary Spec
BV45 Solicit Interest
BV46 Evaluate Responses
BV48 Negotiate Contract
BV49 award Purchase Order
BV50 Fabrication & Delivery APE
Construction Bayside Unit 6
BV53 Pre Delivery Work Foundations
BV56 Aux Electrical System
BV54 Receive Unit 6
BV55 Unit Assembly
BV57 Start-up & Commissioning
BV58 GSU System/Tie In T.D.
Electrical Field Dwgs
Field Piping
Specs
Generator Information
Schematics
O & M Manuals
Deliver GaS
Deliver Key Design Docs
Unit 6 Delivered
Unit 5 Delivered
Unit 4 Delivered
Unit 3 Delivered
Unit Big Bend CT4
Preliminary Spec
Solicit Interest
Bidding
Evaluate Responses
Negotiate Contract
Award Purchase Order
Fabrication & Delivery GSU
Preliminary Spec
Solicit Interest
Evaluate Responses
Negotiate Contract
award Purchase Order
Fabrication & Delivery APE
Pre Delivery Work Foundations
Aux Electrical System
Receive Unit 6
Unit Assembly
Start-up & Commissioning
GSU System/Tie In T.D
(New Bar)
Actual Work
Remaining Work
Critical Remaining Work
Milestone
2 of 3
Date
Revision
Checked
Approved

Bayside/Big Bend Acro Expansion Project — 05-Feb 08 08:01

Activity ID	Activity Name	Remaining Duration	Start	Finish
BV59	Unit 6 COD	0d		14-Apr-09*
Construction Bayside Unit 5		478d	20-Nov-08	28-Apr-09
BV62	Aux Electrical System	20d	20-Nov-08*	17-Dec-08
BV60	Receive Unit 5	0d	15-Dec-08	
BV61	Unit Assembly	25d	15-Dec-08	16-Jan-09
BV63	Start-up & Commissioning	94d	18-Dec-08	28-Apr-09
BV64	GSU System/Tie In T.D.	31d	24-Feb-09	07-Apr-09
BV65	Unit 5 COD	0d		28-Apr-09*
Construction Bayside Unit 4		633d	01-Feb-09	31-Aug-09
BV67	Receive Unit 4	0d	01-Feb-09	
BV68	Unit Assembly	25d	26-May-09*	29-Jun-09
BV69	Aux Electrical System	20d	02-Jun-09*	29-Jun-09
BV70	Start-up & Commissioning	45d	30-Jun-09	31-Aug-09
BV71	GSU System/Tie In T.D.	30d	30-Jun-09	10-Aug-09
BV72	Unit 4 COD	0d		31-Aug-09*
Construction Bayside Unit 3		634d	15-Feb-09	14-Sep-09
BV73	Receive Unit 3	0d	15-Feb-09	
BV74	Unit Assembly	25d	15-Jun-09*	17-Jul-09
BV75	Aux Electrical System	20d	22-Jun-09*	17-Jul-09
BV76	Start-up & Commissioning	45d	14-Jul-09	14-Sep-09
BV77	GSU System/Tie In T.D.	30d	21-Jul-09	31-Aug-09
BV78	Unit 3 COD	0d		14-Sep-09*
Construction Big Bend CT4		447d	17-Dec-08	25-Sep-09
BV80	Pre Delivery Work Foundations Big Bend	64d	17-Dec-08*	16-Mar-09
BV81	Receive CT4	0d	15-Mar-09	
BV82	Unit Assembly	25d	22-Jun-09*	24-Jul-09
BV83	Aux Electrical System	20d	29-Jun-09*	24-Jul-09
BV85	GSU System/Tie In T.D.	30d	27-Jul-09*	04-Sep-09
BV84	Start-up & Commissioning	45d	27-Jul-09	25-Sep-09
BV86	Unit 5 COD CT4	0d		25-Sep-09*

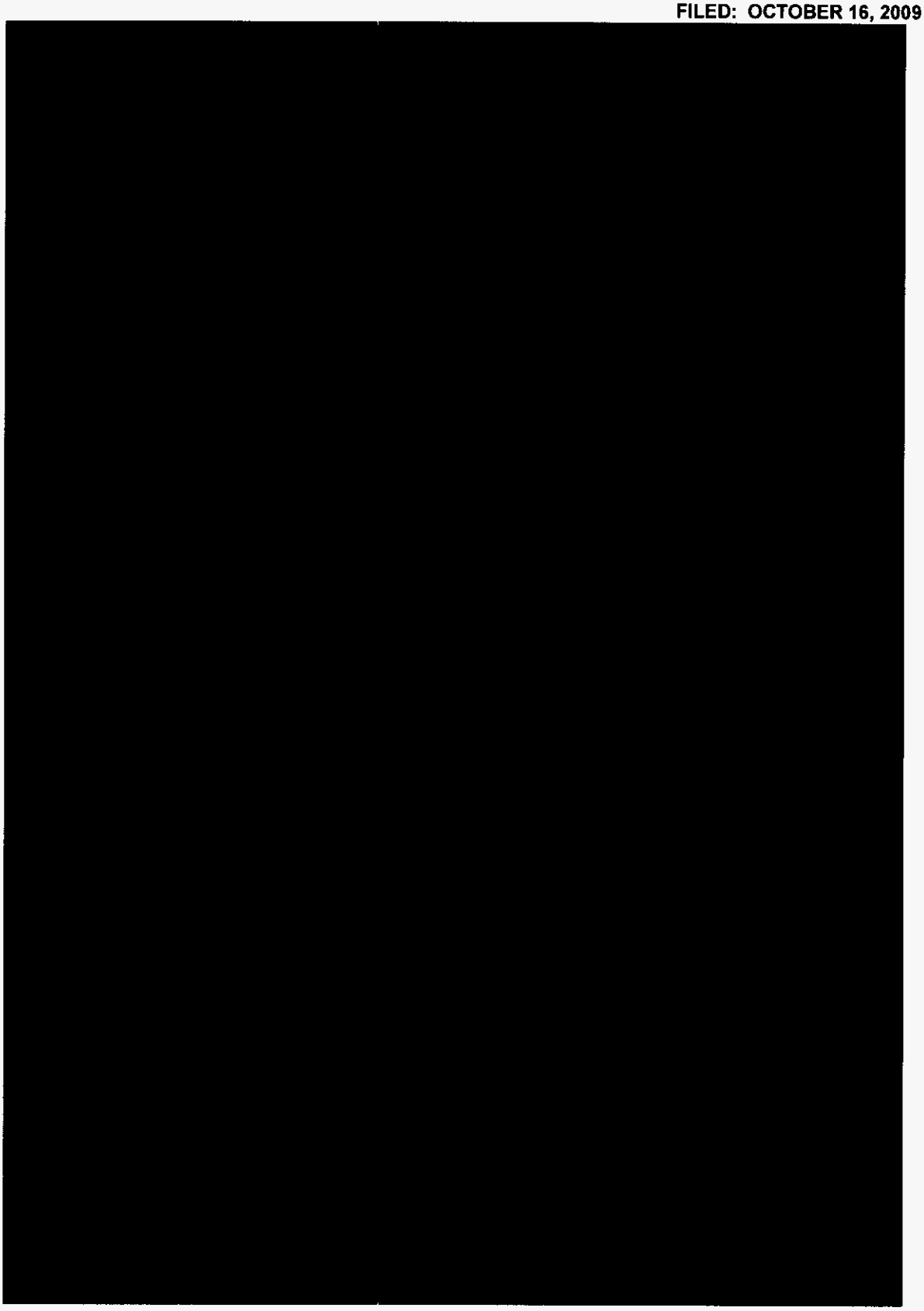


(New Bar) Remaining Work ◆ Milestone
Actual Work Critical Remaining Work

3 of 3

Date	Revision	Checked	Approved

REDACTED



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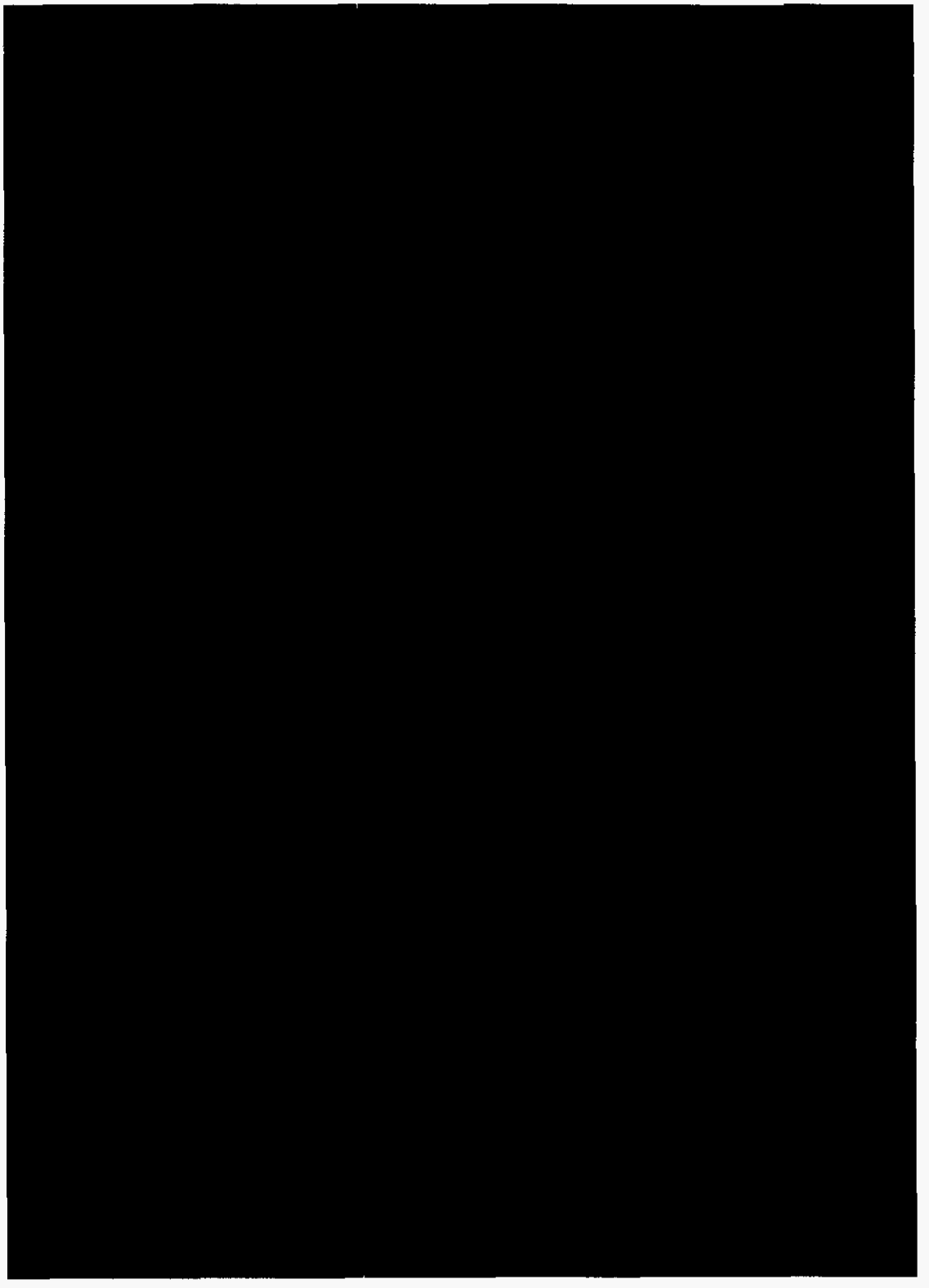

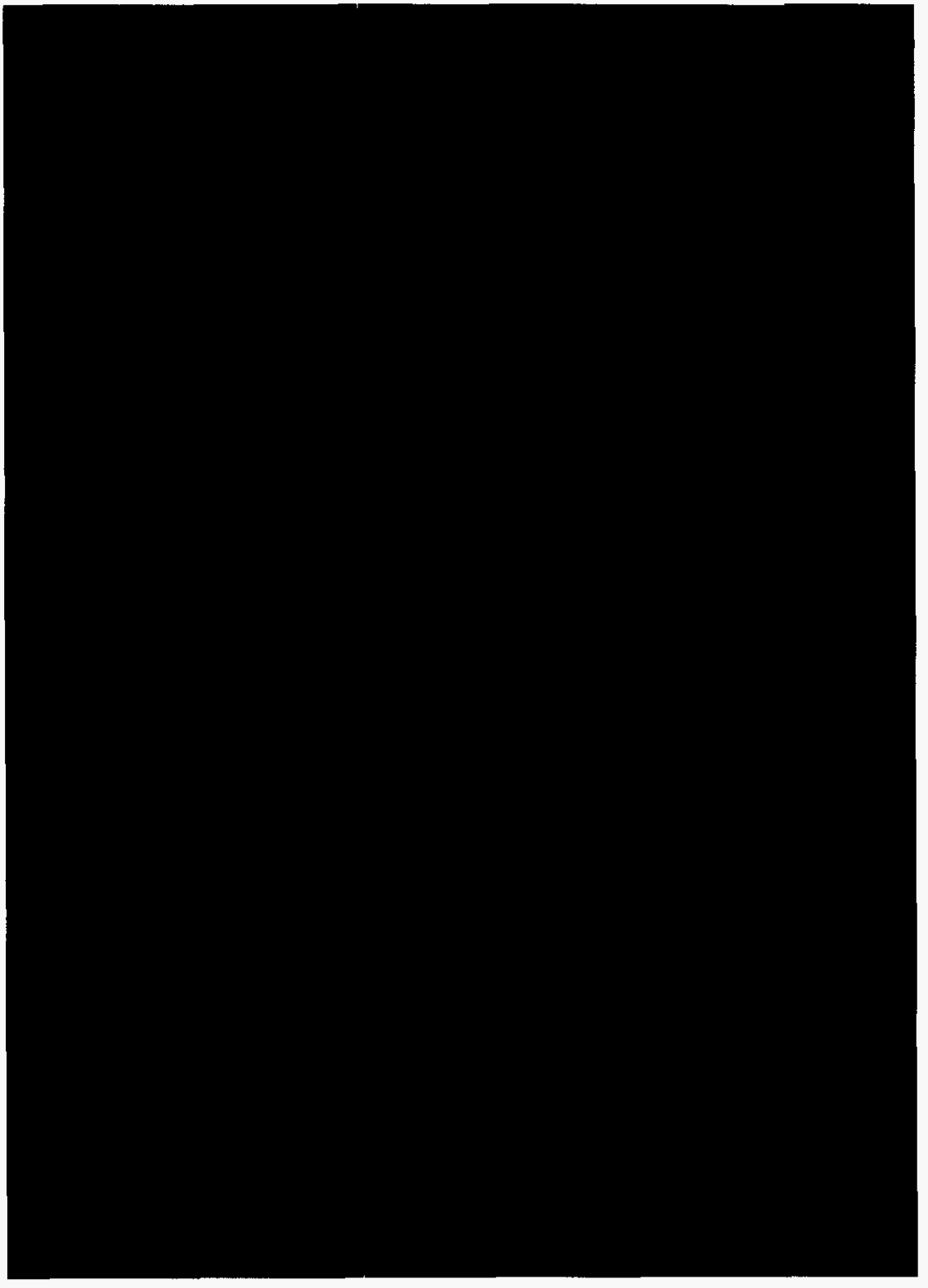

12. What alternatives were considered to the three combustion turbines scheduled to be in commercial service in September, 2009?

A. Initial alternatives considered to the three combustion turbines scheduled to go into service in September 2009 included coal, natural gas combined cycle, large industrial combustion turbines, aero derivative combustion turbine technologies and purchase power agreements. Base and intermediate load capacity additions were eliminated given Tampa Electric's existing generating portfolio, which includes sufficient base and intermediate load capacity. In addition, the size of the forecasted capacity additions did not support construction of larger generating units that require a longer lead time. Tampa Electric issued a peaking capacity RFP on August 31, 2006. After evaluating the power purchase proposals, the company pursued a self build option to help meet its forecasted capacity need.

Therefore, alternatives between industrial and aero combustion turbine technologies were evaluated before selecting aero combustion technology, which have quick start and black start capabilities, as the preferred technology to meet the capacity need in 2009. The Pratt & Whitney technology was selected for the project. A copy of the final evaluation memorandum completed on December 10, 2007 regarding the recommended CT technology is attached. Key factors of the Pratt & Whitney equipment that were identified in the selection process included: the combustion turbines were the lowest evaluated cost on a dollars per kilowatt basis, Pratt & Whitney's ability to meet the project's schedule, the Pratt & Whitney CTs do not require a gas compression skid and supplier diversity within the Tampa Electric combustion turbine fleet.

[redacted]
TAMPA ELECTRIC

TO: **Jim Badgerow**

FROM: **Catherine Magliocco**

DATE: **December 10, 2007**

SUBJECT: **Generation Expansion – Addition of Aero-Derivative Combustion Turbines**
Letter of Recommendation for Turbine Supply

TEC's generation expansion plan requires the addition of five aero-derivative combustion turbines entering commercial operation between May 2009 and January 2010. Four of the aero-derivative turbines are to be located at the Bayside Power Station with two scheduled for commercial operation as of May 1, 2009 and two scheduled for commercial operation as of January 1, 2010. The fifth aero-derivative turbine is to be located at the Big Bend Power Station and is scheduled for commercial operation as of January 1, 2010.

The expansion will require the first two turbines at the Bayside Power Station to be connected to the 69kV system and the second two to be connected to the 138kV system. The turbine at the Big Bend Power Station will be connected to the 230kV system.

Proposals were solicited from three suppliers: GE (LM6000), Pratt & Whitney (FT8 Swiftpac) and Rolls Royce (Trent 60). The base proposal was for five aero-derivative turbines, including evaporative coolers and single fuel operation. Options were requested for inlet air chilling, black start capability, SCR's and dual fuel capability. Performance was requested at 92°F with evaporative coolers in service and out of service, firing natural gas and firing liquid fuel.

The proposals were evaluated on several criteria, including:

- Ability to meet schedule
- Performance
- Emissions profile
- Site specific considerations
- Evaluated cost

Schedule

In order to support the in-service date for the first two machines at Bayside of May 2009, initial equipment delivery is needed in the fall of 2008. All three suppliers are able to provide the first machine for shipment by mid-November 2008 with the second machine to follow by mid-December 2008. These dates are for shipment from the factory and are valid through December 2007, subject to prior

commitment. The shipping dates for the five turbines from each supplier are summarized in the table below.

	GE LM6000	Rolls-Royce Trent	[redacted]
CT 1 Delivery	09/19/08	11/15/08	10/20/08
CT 2 Delivery	10/17/08	12/15/08	11/01/08
CT 3 Delivery	01/23/09	01/15/09	11/28/08
CT 4 Delivery	01/30/09	02/15/09	12/10/08
CT 5 Delivery	03/06/09	03/01/09	12/31/08

Performance

Performance characteristics were requested from the three suppliers assuming base load operation at 92°F. The base case for performance included natural gas as the fuel and assumed evaporative coolers were in service. The performance of the three machines is summarized in the table below.

Natural Gas Performance - With Evaporative Cooling			
	GE LM6000	Rolls-Royce Trent	[redacted]
Load	Base	Base	100%
Output (kW) (gross)	45153	51566	57642
Heat Rate (Btu / kW-hr) LHV (Gross)	8620	8815	9413
Ambient Temp (°F)	92	92	92
Evap Coolers	On	On	On
Fuel Type	Natural Gas	Natural Gas	Natural gas
Fuel Flow (lb/hr)	20486	21824	26250
Fuel LHV (Btu/lb)	19000	20561	20671
Water Injection (gpm)	29.2	49.78	29.6
Evap Water (GPM)	Not Available	6.32	3.5
Exhaust Temp (F)	861.2	845.2	771

Emissions Performance

The three proposals include water injection for NOx control. None of the suppliers would recommend supplying the combustion turbine without outlet emissions control due to the high raw NOx values

(expected to be in the range of 250ppm) and the impact to the performance of the machine. The estimated NOx emissions from all three suppliers with the use of water injection are 25ppm. The estimated CO emissions have greater variability across the suppliers (55.9ppm – 143ppm). However, CO emissions are expected to be lower with base load operation and clean equipment. The estimated emissions are summarized in the table below.

Natural Gas Performance - With Evaporative Cooling			
	GE LM6000	Rolls-Royce Trent	[redacted]
Ambient Temp (°F)	92	92	92
Evap Coolers	On	On	On
Fuel Type	Natural Gas	Natural Gas	Natural gas
Fuel Flow (lb/hr)	20486	21824	26250
Fuel LHV (Btu/lb)	19000	20561	20671
Nox ppm	25	25	25
CO ppm	143	55.9	60

The need for SCR and CO catalysts is dependent upon the projected operation of the machines. There is an annual project emissions threshold of 40 tons for NOx and 100 tons for CO. Once this threshold is triggered, a BACT analysis is required. It is estimated that the cost analysis would require SCR and CO catalyst between approximately 1300 and 1700 hours of operation. Completion of a BACT analysis will be needed in order to determine whether SCR and CO catalyst is required.

Site Specific Considerations

The site-specific considerations reviewed include the availability of balance of plant services (such as instrument air, service water, fuel, etc), the need and ability to include black start capability, the need and ability to include dual fuel operation and the ability to connect the machines to the system. With the exception of natural gas requirements, the site specific considerations are similar for each supplier and do not affect the evaluation. The Rolls Royce machines require natural gas delivered at the turbine skid at 800 psig. This is greater than the current supply pressure to the existing GE 7FA turbines currently at Bayside. It also exceeds the design pressure of the piping and the separation vessel currently in use. In order to supply the pressure required, a compressing skid would be needed. The GE LM6000 requires a natural gas pressure of 675 psig at the skid boundary. This is in the range of the existing equipment (design limit of 720 psig). However, should the existing metering and regulating system and the natural gas piping be recertified for a higher pressure, additional regulator valves would be required for the existing turbines. The Pratt & Whitney FT8 requires natural gas supplied at 475 psig, which is in the range of the existing natural gas equipment used at Bayside.

Cost

The pricing as received from each of the suppliers was adjusted to put the proposals on an equivalent basis. The Pratt & Whitney proposal included field support, an electrical package and an exhaust stack which the other suppliers specifically excluded from their proposals. The base amount for site service included in the Pratt & Whitney proposal was deducted in order to put the proposals on an equivalent

basis. Adjustments were made to the GE and the Rolls Royce proposals to account for modifications required to the natural gas supply system at Bayside due to the high natural gas pressure required. The following table summarizes the as-received costs, as well as the adjustments and the options for the suppliers and is for CT equipment costs only.

	GE LM6000	Rolls-Royce Trent	[redacted]
As-Received Price (per machine)	2008 - $14,886,560 2009 - $15,035,425	$15,517,600	$18,696,200
Total As-Received Price (5 Machines)	$74,879,395	$77,588,000	$93,481,000
Adjustement: Site Support	$0	$0	-$627,000
Adjustment: Electrical Package	$0	$0	-$500,000
Adjustment: Gas Compression	$281,250	$3,900,000	$0
Adjustment: Exhaust Stack	$2,000,000	$2,000,000	$0
Total Adjusted Cost (per 5 machines) (CT Equipment Only)	$77,160,645	$83,488,000	$92,354,000
Option 1: Dual Fuel Capability (per machine)	$333,900	$302,000	$290,800
Total Adjusted Cost with options (CT Equipment Cost Only)	$77,494,545	$83,790,000	$92,644,800
Total Output per Machine, kW, Gross (92F, Evap Coolers, NG)	45153	51566	57642
Total Output, 5 Machines kW, Gross (92F, Evap Coolers, NG)	225765	257830	288210
Cost per kW (CT Equipment Cost Only)	$343	$325	$321

Option pricing was received for including inlet air chillers (in lieu of the base case which included evaporative coolers), for including black start generators, for including SCRs and for including dual fuel operation. The option pricing for including dual fuel capability was included in the above summary for each supplier. However, the costs for the other three options were not included. The turbine suppliers outsource supply of the equipment associated with the other options (black start engines, SCRs and inlet

air chillers). Several bidders provided option pricing to provide elements of this equipment. However, it will be more economical for these systems to be designed and procured by the Engineer for the project.

Recommendation

Based on the proposal evaluation completed by the Engineering and Construction Group and the information discussed above, it is recommended that discussions be opened with Pratt & Whitney for the supply of five FT8-3 Swiftpac aero-derivative combustion turbine sets for installation at the Bayside and Big Bend Power Stations. Pratt & Whitney offers the lowest evaluated cost on a dollars per kilowatt basis and can meet the project schedule. Though the evaluation conducted by the Generation Planning group indicated that the Pratt & Whitney machines are a more expensive option over a 30-year life, there is less than 0.1% difference in savings over the life of the machines when compared with the base case, which is within the margin of error of the values being used to complete the analysis.

The addition of the Pratt & Whitney machines will help to diversify the combustion turbine fleet of Tampa Electric, reducing the dependence on any one supplier for parts and service. Further, the FT8-3 Swiftpac starts and achieves full load in less than 10 minutes, meeting the quick start requirements for spinning reserve. Additionally, the Pratt & Whitney machines are capable of providing black start capability with the addition of a black start generator, allowing power to be restored after a complete station shutdown.

Further, the Pratt & Whitney FT8-3 Swiftpac has the lowest natural gas pressure requirement, allowing the machines to be added to the Bayside Power Station with minimal modifications to the existing FGT pipeline serving Units 1&2 and without having to add a compression skid. This lower pressure requirement also ensures that the machines will be able to receive natural gas from either the existing FGT gas supply line or the future Gulfstream gas supply pipeline.

There are multiple FT8 installations in the Unites States, including several that include SCRs. The Swiftpac design also incorporates two turbines connected to a single generator, increasing the reliability of the overall unit. Each turbine can be operated independently of the other, providing power in 25MW and 50MW increments without efficiency penalties. Further, Pratt & Whitney uses a Woodward Micronet Plus control system which is a well-known and reliable control system familiar to TEC.

Discussions with existing users of the Pratt & Whitney FT8-3 machines indicate that the machines are reliable and that operators are generally pleased with the operation of the machines. Pratt & Whitney does not restrict the number of starts for the Swiftpac machines. All maintenance activities are based on hours of operation. Pratt & Whitney also offers a Long Term Service Agreement for the inspection and maintenance of the machines.

Approved, James. B Badgerow

Approved, Michael R. Rivers

13. Please explain how TECO would meet its peak load requirements or operating reserve requirements if the three combustion turbines scheduled to be in commercial service in September, 2009, are either delayed or cancelled.

A. At the time the need for these five CTs was identified and the decision to approve construction of these units was made, each unit was required to meet the company's obligation to provide a 20 percent reserve margin in 2009. Therefore, any delay or cancellation of the three CTs scheduled for September 2009 would have required the company to meet its peak load requirements or operating reserves through some other planned unit addition or purchased power agreement.

During 2009 the company has experienced lower than forecasted demands and energy sales. Because of the advanced stage of construction when evidence of reduced demand and energy became a reality, Tampa Electric had no cost effective option to cease construction of the CTs scheduled to be in commercial service in September 2009.

Postponement of Bayside CTs 3 and 4, which went in service July 13, 2009, was not a cost-effective alternative. As discussed in the company's response to Staff's Data Request No. 14, the majority of funds for contracts on these CTs were committed and substantial construction had been completed at the time of the base rate hearing held in January. In addition, the postponement of Bayside CTs 3 and 4 would have eliminated the benefits of 120 MW of black start and quick start capability, thereby requiring spinning reserves from more expensive sources and increasing fuel costs. Therefore, postponement of Bayside CTs 3 and 4 was not a cost-effective option at any time after it was apparent that Tampa Electric's load growth would be less than projected for 2009. Additionally, postponement of Big Bend CT 4 was never an option since postponement would have left Big Bend Station without black start capability. Further, the postponement would have resulted in the loss of 60 MW of quick start capability. As previously stated, Big Bend CT 4 also has the capability to operate either on natural gas or fuel oil. This dual fuel capability is beneficial in situations when the supply of natural gas is limited or where the price of natural gas is higher than distillate oil. The capability to use oil as fuel was cost effectively applied to Big Bend CT 4 by using an existing oil tank and associated equipment that is currently in service at the facility.

14. Please discuss any contracts that could have been effected by a delay of either the May Combustion Turbines or the September Combustion Turbines. Please include what the approximate financial impact of delay would result in relating to these contracts.

A. As previously stated in the company's response to Staff's Data Request No. 13, Tampa Electric had no cost effective option to cease construction of the CTs in 2009 given the advanced stage of construction when evidence of reduced demand and energy became a reality. As of January 15, 2009, there were 29 separate contracts in place covering the civil, structural, mechanical, electrical, instrumentation, procurement and construction of these units. A table detailing each of the 29 contracts and their status as of January 15, 2009 is attached. This represented a total contract value of $149,079,666. At that point in time, 71 percent of the value for these contracts, or $106,433,780, was committed, not including transmission construction costs, other owner's costs and AFUDC. If the projects were delayed, to be completed at a later date or cancelled, there would be additional costs associated with demobilization of contractors, storage of equipment and remobilization of contractors when work recommenced.

15. Please discuss any contracts that could have been effected by a cancellation of either the May Combustion Turbines or the September Combustion Turbines. Please include what the approximate financial impact of cancellation would result in relating to these contracts.

A. See the company's response the Staff's First Data Request No. 14.