UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

DATE: FEB 03 2003

SUBJECT: AES Puerto Rico Total Energy Project. – Review of the October 2002 Test Report

FROM: Donald G. Wright, Environmental Scientist
Air and Water QA Team (2DESA-MAB)

TO: Francisco Claudio, Environmental Engineer
Enforcement & Superfund Branch (2CEPD-ESB)

I have reviewed the October 2002 Stationary Source Sampling Report for Duke/Fluor Daniel Caribbean, S.E. Guayama, Puerto Rico (AES Puerto Rico Total Energy Project). This report was prepared by Trigon Engineering Consultants, Inc. I have attached 5 tables from this report that summarize the emissions from the various emission points. Please note those emissions highlighted in yellow.

I have corrected the sulfuric acid mist emissions from Unit 1 after finding mistakes in the calculations. The second run was conducted at sampling rates slightly greater than the maximum sampling rate specified in the method, 1.0 cfm. The percent isokinetic for run 3 was 110.8%, slightly exceeding the criterion in the method of 100% ± 10%. These two problems should not significantly affect the results.

If you have any questions or wish to discuss this matter, please feel free to contact me at 732-321-6764.

Attachment

cc: John P. Aponte, 2CEPD-ESB

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ▸ 5

To Frank Jon	From Don Wright
Dept./Agency 2DEPP-APB	Phone # 732-321-6764
Fax # 212-637-3801	Fax #

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

CONCURRENCES

Name: Donald G. Wright Init: DW Date: 2/3/03 Filename: F:\USER\DWRIGHT\AIR\AES Puerto Rico Guayama Report Review.wpd

Symbol	2DESA-MAB	2DESA-MAB	2DESA-MAB					
Surname	DWright	MKantz	RBraun					
Date	2/3/03	02/03/03	02/03/03					

REGION II FORM 1320-1 (9/85)

Summary of Emission Compliance Test Results Unit 1				
Pollutant	**Permit Limit**	**Concentration ppm@7%O_2**	**Emission Rate lb/hr**	**Emission Rate lb/mmBtu**
Particulate Matter	36.9 lb/hr or 0.015 lb/mmBtu	N/A	31.1	0.013
Sulfuric Acid Mist	5.9 lb/hr, 0.0024 lb/mmBtu or 0.64 ppm@7%O_2	~~1.17~~ 1.41	~~11.4~~ 13.75	~~0.004~~ 0.005
Total Fluoride	1.18 lb/hr or 0.000478 lb/mmBtu	N/A	<0.663	<0.0003
Sulfur Dioxide	54.1 lb/hr, 0.022 lb/mmBtu or 9.00 ppm@7%O_2	0.15	0.91	0.00037
Oxides of Nitrogen	246.1 lb/hr, 0.10 lb/mmBtu or 57 ppm@7%O_2	47.2	204.1	0.071
Carbon Monoxide	246.1 lb/hr, 0.10 lb/mmBtu or 94 ppm@7%O_2	16.4	43.1	0.015
VOCs[2]	11.6 lb/hr, 0.0047 lb/mmBtu or 7.70 ppm@7%O_2	1.43	1.71	0.00066
Lead	0.6 tpy[3]	N/A	0.0077 (0.034 tpy)	0.0000032
PM_{10}	36.9 lb/hr or 0.015 lb/mmBtu	N/A	59.0	0.023

[1] Sulfuric acid mist corrected to 7 percent O_2 assumes a molecular weight of 98.08 (sulfuric acid).
[2] Volatile organic compounds reported as total gaseous organics.
[3] 0.6 tpy is a PSD significance level, not a permit limit.
lb/hr – pounds per hour, lb/mmBtu – pounds per million Btu, tpy – tons per year

Summary of Emission Compliance Test Results Unit 2				
Pollutant	Permit Limit	Concentration ppm@7%O_2	Emission Rate lb/hr	Emission Rate lb/mmBtu
Particulate Matter	36.9 lb/hr or 0.015 lb/mmBtu	N/A	117.8	0.048
Sulfuric Acid Mist	5.9 lb/hr, 0.0024 lb/mmBtu or 0.64 ppm@7%O_2	0.169[1]	1.58	0.0006
Total Fluoride	1.18 lb/hr or 0.000478 lb/mmBtu	N/A	<0.837	<0.0003
Sulfur Dioxide	54.1 lb/hr, 0.022 lb/mmBtu or 9.00 ppm@7%O_2	0.54	3.22	0.0013
Oxides of Nitrogen	246.1 lb/hr, 0.10 lb/mmBtu or 57 ppm@7%O_2	49.4	213.3	0.074
Carbon Monoxide	246.1 lb/hr, 0.10 lb/mmBtu or 94 ppm@7%O_2	17.3	45.4	0.016
VOCs[2]	11.6 lb/hr, 0.0047 lb/mmBtu or 7.70 ppm@7%O_2	0.253	0.284	0.00012
Lead	0.6 tpy[3]	N/A	0.010 (0.044 tpy)	0.000004
PM_{10}	36.9 lb/hr or 0.015 lb/mmBtu	N/A	46.7	0.019

Summary of Emission Compliance Test Results Limestone Dryer			
Pollutant	Permit Limit	Emission Rate lb/hr	Emission Rate lb/mmBtu
Particulate Matter	1.24 lb/hr or 0.095 lb/mmBtu	0.942	0.081
Sulfur Dioxide	0.26 lb/hr or 0.02 lb/mmBtu	0.0	0.0
Oxides of Nitrogen	1.95 lb/hr or 0.15 lb/mmBtu	0.520	0.044
Carbon Monoxide	0.26 lb/hr or 0.02 lb/mmBtu	0.0	0.0
PM_{10}	1.24 lb/hr or 0.095 lb/mmBtu	1.10	0.101

Summary of Ammonia Emissions on Unit 1 and Unit 2				
Source	**Boiler Load**	**Urea Injection Rate**	**Permit Limit**	**Concentration, ppm@7%O_2**
Unit No. 1	74%	71 GPH	10 ppm @7%O_2	2.02
Unit No. 1	100%	148 GPH	10 ppm @7%O_2	2.38
Unit No. 1	64%	95 GPH	10 ppm @7%O_2	5.00
Unit No. 1	64%	150 GPH	10 ppm @7%O_2	7.36
Unit No. 1	85%	150 GPH	10 ppm @7%O_2	3.90
Unit No. 1	85%	71 GPH	10 ppm @7%O_2	2.28
Unit No. 1	50%	99 GPH	10 ppm @7%O_2	12.75
Unit No. 1	53%	68 GPH	10 ppm @7%O_2	9.41
Unit No. 1	53%	80 GPH	10 ppm @7%O_2	4.33
Unit No. 1	52%	120 GPH	10 ppm @7%O_2	7.29
Unit No. 2	64%	88 GPH	10 ppm @7%O_2	3.68
Unit No. 2	65%	150 GPH	10 ppm @7%O_2	5.39
Unit No. 2	85%	150 GPH	10 ppm @7%O_2	3.98
Unit No. 2	85%	102 GPH	10 ppm @7%O_2	3.26
Unit No. 2	100%	134 GPH	10 ppm @7%O_2	1.92
Unit No. 2	100%	120 GPH	10 ppm @7%O_2	3.16
Unit No. 2	53%	148 GPH	10 ppm @7%O_2	8.96
Unit No. 2	53%	174 GPH	10 ppm @7%O_2	5.91

ppm – parts per million

GPH – gallons per hour

Summary of Opacity Observation at Miscellaneous Sources			
Source	**Permit Limit**	**Regulatory Reference**	**Opacity[1]**
Unit No. 1	20%	40 CFR 60 App. B, PS 1, Subpart Da	5.2%
Unit No. 2	20%	40 CFR 60 App. B, PS 1, Subpart Da	4.4%
Limestone Dryer	20%	40 CFR 60 App. B, PS 1, Subpart OOO	0.0%
Coal Crusher	10%	40 CFR 60 App. B, PS 1, Subpart Y	0.0%
Power House Dust Collector	10%	40 CFR 60 App. B, PS 1, Subpart Y	0.0%
Limestone Silo "A"	20%	40 CFR 60 App. B, PS 1, Subpart OOO	0.0%
Limestone Silo "B"	20%	40 CFR 60 App. B, PS 1, Subpart OOO	0.0%
Limestone Reclaim Baghouse	20%	40 CFR 60 App. B, PS 1, Subpart OOO	0.0%
Ash Silo East	20%	40 CFR 60 App. B, PS 1, Subpart OOO	0.0%
Ash Silo West	20%	40 CFR 60 App. B, PS 1, Subpart OOO	0.0%
Ash Silo Unloading	20%	40 CFR 60 App. B, PS 1, Subpart OOO	28.3%

[1] Highest six-minute average.