

US EPA ARCHIVE DOCUMENT

## REGION 6 EXECUTIVE SUMMARY

TOPIC: EPA Region 6 GHG PSD Permit for Lon C. Hill Power Station

DATE: October 23, 2014

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PURPOSE/ACTION NEEDED: Issue final permit

DEADLINE DATE: October 31, 2014

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### BACKGROUND:

On November 7, 2013, Lon C. Hill, LP, submitted to EPA Region 6 a Prevention of Significant Deterioration (PSD) permit application for Greenhouse Gas (GHG) emissions. In connection with the same proposed project, Lon C. Hill, LP, submitted a PSD permit application for non-GHG pollutants to the Texas Commission on Environmental Quality (TCEQ) on November 7, 2013.

The project that Lon C. Hill proposes is to construct a new 700 MW (nominal) electric power plant in Corpus Christi, Texas, Nueces County. With this proposed project, Lon C. Hill plans to construct two natural gas-fired turbines and associated equipment including cooling towers, a firewater pump engine, auxiliary boiler, and electrical equipment insulated with sulfur hexafluoride. For the purposes of this proposed permitting action GHG emissions are permitted from the two turbines, firewater pump engine, circuit breakers and maintenance, startup and shut down emissions. The remaining units are not considered to be potential GHG emission sources. The total greenhouse emissions from the proposed project will be 2,517,468 tpy of CO<sub>2</sub>e. The total estimated capital cost of the proposed project is \$888 Million and the proposed project is anticipated to add approximately 150 temporary and 15-20 permanent jobs.

### CURRENT STATUS:

- A. **6PD-R: Air Permits Section:** A draft permit and statement of basis have been proposed. No comments were received during public comment. EPA did not receive a request for a public hearing so the public hearing was cancelled. The hearing cancellation was posted on October 15, 2014. EPA received confirmation from the State Historic Preservation Officer that no historic properties would be affected in the construction of this facility on August 28, 2014.
- B. The GHG PSD permit will allow Lon C. Hill to construct two new natural gas fired-combined cycle turbines equipped with heat recovery steam generators and duct burners, and an emergency generator engine and firewater pump engine. Additional greenhouse gas emissions are also included from the circuit breakers and fugitive leaks.



FIN	EPN	Description	GHG Mass Basis		TPY CO <sub>2</sub> e <sup>1,2</sup>	BACT Requirements
				TPY <sup>1</sup>		
CC-101 CC-102	STK-101 STK-102	Natural Gas Fired-Simple Cycle Turbine, each	CO <sub>2</sub>	1,255,491 <sup>3</sup>	1,256,763 <sup>3</sup>	·BACT limit of 920 lb CO <sub>2</sub> /MW-hr (gross). ·See permit condition IV.A.1 and Table 2.
			CH <sub>4</sub>	23.30 <sup>3</sup>		
			N <sub>2</sub> O	2.33 <sup>3</sup>		
ABL-100	ABLSTK- 100	Auxiliary Boiler	CO <sub>2</sub>	2,779	2,779	Good combustion and operating practices. Limit to 500 hours of operation per year. Special Condition IV.B.
			CH <sub>4</sub>	0.052		
			N <sub>2</sub> O	0.005		
EGEN-100	EGENSTK- 100	Emergency Generator	CO <sub>2</sub>	80	80	Good combustion and operating practices. Limit to 100 hours of operation per year. See special conditions IV.C.
			CH <sub>4</sub>	No Numerical Limit Established <sup>4</sup>		
			N <sub>2</sub> O	No Numerical Limit Established <sup>4</sup>		
FWP-100	FWP-100	Firewater Pump Engine	CO <sub>2</sub>	35.2	35.2	- Not to exceed 100 hours of non-emergency operation on a 12-month rolling basis - Use of Good Combustion Practices. See permit condition IV.C.
			CH <sub>4</sub>	No Numerical Limit Established <sup>4</sup>		
			N <sub>2</sub> O	No Numerical Limit Established <sup>4</sup>		
SF6-100	SF6-100	Fugitive SF <sub>6</sub> Circuit Breaker Emissions	SF <sub>6</sub>	0.0002	4.1	Work Practices. See permit condition IV.D.
NG-FUG	NG-FUG	Components Fugitive Leak Emissions	CH <sub>4</sub>	41.7	Not applicable	Implementation of AVO LDAR Program. See permit condition III.D.
<b>Totals<sup>5</sup></b>			CO <sub>2</sub>	2,518,530	<b>2,517,468 CO<sub>2</sub>e</b>	
			CH <sub>4</sub>	89		
			N <sub>2</sub> O	4.67		
			SF <sub>6</sub>	0.02		

1. The TPY emission limits specified in this table are not to be exceeded for this facility and include emissions from the facility during all operations and include MSS activities.
2. Global Warming Potentials (GWP):  $\text{CO}_2=1$ ,  $\text{CH}_4 = 25$ ,  $\text{N}_2\text{O} = 298$ ,  $\text{SF}_6=22,800$
3. The GHG Mass Basis TPY limit and the  $\text{CO}_2\text{e}$  TPY limit for the natural gas fired combined cycle turbines applies to each turbine and is not a combined limit.
4. All values indicated as “No Numerical Limit Established” are less than 0.01 TPY with appropriate rounding. The emission limit will be a design/work practice standard as specified in the permit.
5. Total emissions include the PTE for fugitive emissions. Totals are given for informational purposes only and do not constitute emission limits.

**ENVIRONMENTAL/PUBLIC HEALTH CONCERNS:**

None

**TECHNICAL CONCERNS:**

None.

**RECOMMENDATION:**

Sign the final permit

