

## CONSTRUCTION PERMIT - NSPS SOURCE - REVISED

DRAFT

PERMITTEE

Titan Tire Corporation of Freeport  
 Attn: Daniel Stoehr  
 3769 Route 20 East  
 Freeport, IL 61032

Application No.: 95010051                      I.D. No.: 177813AAA  
Applicant's Designation: CO-GEN-1995   Date Received: September 3, 2008  
Subject: Co-Generation System  
Date Issued: DRAFT  
Location: 3769 Route 20 East, Freeport, Stephenson County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a co-generation system consisting of three gas turbines as described in the above referenced application. This Permit is subject to standard conditions attached hereto and the following special conditions:

- 1a. The gas turbines are subject to a New Source Performance Standard (NSPS) for stationary gas turbines, 40 CFR 60, Subparts A and GG. The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.
- b. The nitrogen oxides (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) emissions from the gas turbines shall not exceed the applicable standards of the NSPS, 40 CFR 60.332 and 60.333 respectively.
- c. At all times, the Permittee shall also, maintain and operate the gas turbines, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to 40 CFR 60.11(d).
- 2a. Total emissions of particulate matter (PM), carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>) and volatile organic material (VOM) from the three gas turbines shall not exceed the following limits:

PM10 Emissions		CO Emissions		VOM Emissions		NO <sub>x</sub> Emissions	
lb/mmBtu	Tons/Yr	lb/mmBtu	Tons/Yr	lb/mmBtu	Tons/Yr	lb/mmBtu	Tons/Yr
0.0236	17.45	0.121	89.48	0.024	17.75	0.099	73.21

The PM10, CO and NO<sub>x</sub> emission limits for the gas turbine are based on nominal emission factors supplied by the Permittee and manufacturer.

VOM emission limits are based on the standard emission factors (AP42) for firing natural gas. Annual limits are based on continuous operation (8760 hr/yr) and nominal emission rates.

- b.
  - i. Natural gas usage for the three boilers shall not exceed 650 million scf per year, total.
  - ii. Emissions from the three boilers (Boiler #2, #3, and #4) shall not exceed the following limits:

Pollutant	Emissions	
	lb/hr (each)	ton/year (total)
NOx	7.7	32.7
CO	6.5	27.5
PM/PM10	0.6	2.5
VOM	0.4	1.8

- c. Compliance with annual limits shall be determined from a running total of 12 months of data.
- 3a. Within 90 days of startup of the co-generation system, one existing boiler at the source (78.4 mmBtu/hour, Wicks boiler, Model: Type "A" 550-3-7, Serial #63034-1) shall be shutdown and cease operation.
  - b. As a consequence of the conditions of this permit, this permit is issued based on this project not constituting a new major source or major modification subject to the federal rules for Prevention of Significant Deterioration (PSD). For NOx and PM/PM10 this is because the project will be accompanied by a contemporaneous decrease in emissions from the natural gas fired boilers at the source due to a reduction in operation. (Refer to Attachments 1 and 2)
- 4a. Only natural gas shall be burned in the gas turbines.
  - b. The fuel input to each gas turbine shall not exceed 65.0 mmbtu/hour.
  - c. The total annual fuel consumption from the three gas turbines shall not exceed 1,480 million cubic feet. Compliance with this limit shall be determined on a running total of the current month and the proceeding 11 months fuel use, and shall be verified each month. For the first 12 months following startup, the limit shall be pro-rated. For example, after 2 months the limit shall be 2/12 of the annual limit.
- 5a. The equipment covered in this permit may be operated for 270 days after initial startup under this construction permit.
  - b. The equipment shall not begin operation until construction, including construction of any air pollution control equipment, is complete, and reasonable measures short of actual operation have been taken to verify proper operation.
- 6a. Within 180 days after initial startup and within 60 days of achieving the maximum rate of operation, the nitrogen oxide (NOx), carbon monoxide (CO), and particulate matter (PM) emissions of the gas turbines shall each be measured by an approved testing service.
  - b. i. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Agency: Refer to 40 CFR 60, Appendix A for USEPA test methods.

Location of Sample Points      USEPA Method 1  
 Gas Flow and Velocity          USEPA Method 2

Carbon Monoxide	USEPA Method 10
Nitrogen Oxides	USEPA Method 20 and 40 CFR 60.335
Particulate Matter	USEPA Method 5 or Method 201

Results from particulate matter testing can assume all particulate matter is PM10.

- ii. The performance test measuring NOx emissions shall be measured at 30, 50, 75 and 100 percent of peak load or at four points in the normal operating range of the gas turbine, including the minimum point in the range and peak load pursuant to 40 CFR 60.335.
- c. The Agency shall be notified in writing a minimum of thirty (30) days prior to the expected date of these tests and further notified a minimum of five (5) working days prior to the test of the exact date, time and place of these tests, to enable the Agency to witness these tests.
- d. Three copies of the Final Report(s) for these tests shall be submitted to the Agency within 14 days after the test results are compiled and finalized. The Final Report shall include as a minimum:
  - i. A summary of results.
  - ii. General information.
  - iii. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule.
  - iv. Detailed description of test conditions, including
    - A. Process information, i.e., mode(s) of operation, process rate, e.g. fuel consumption.
    - B. Equipment condition and operating parameters during testing.
  - v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
- 7a. The Permittee shall install, evaluate, and operate a continuous monitoring system to monitor and record the fuel consumption of the fuel being fired in the gas turbines in accordance with the provisions of 40 CFR 60.334.
- b. The Permittee shall conduct quarterly analysis of the natural gas for monitoring sulfur and nitrogen content of the fuel in accordance with 40 CFR 60.334(b)(2).
- 8a. The Permittee shall fulfill applicable notification and recordkeeping requirements pursuant to 40 CFR 60.7 and 60.334.
- b. The Permittee shall maintain records of the following items, and such other items as may be appropriate to allow the Illinois EPA to review compliance with the requirements of this permit.

- i. Fuel consumption (scf/month and scf/year) for the turbines and for the boilers.
  - ii. Emissions of NOx, CO, VOM and PM/PM10 (ton/month and ton/year) for the turbines and for the boilers.
- c. These records shall be retained for five years and shall be available for inspection and copying by the Agency.
9. Any required reports and notifications concerning equipment operation, performance testing or a continuous monitoring system shall be sent to the Illinois EPA at the following addresses unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance Section (#40)  
P.O. Box 19276  
Springfield, IL 62794-9276

Telephone: 217/782-5811      Fax: 217/782-6348

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Regional Field Office  
9511 West Harrison  
Des Plaines, Illinois 60016

Telephone: 847/294-4000      Fax: 847/294-4018

- 10a. This revised permit no longer requires that Boiler 2 be permanently shutdown and authorize re-activation of this existing natural gas fired Boiler 2, which was idled when the cogeneration system originally began operation.
- b. This revised permit is issued based on the re-activation of Boiler 2 not constituting "reconstruction" as the cost of activities to re-start the boiler is less than 50% of the fixed capital cost that would be required to construct a comparable new boiler, so Boiler 2 is not subject to the NSPS, 40 CFR 60 Subpart Db, pursuant to 40 CFR 60.15.
  - c. This permit is issued based on the re-activation of Boiler 2 also not constituting a major modification subject to the PSD rules because the permitted emissions from the boilers will be less than the significant emissions thresholds of the PSD rules.
  - d. This permit continues to include requirements that were applicable to the original operation of the turbine, e.g., emission testing of the gas turbines, Condition 6. These actions are not required to be repeated in conjunction with the issuance of this revised permit.
  - e. This permit authorizes operation of Boiler 2 under this construction permit until the source's CAAPP permit is renewed or revised to include the emission unit.

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Please note that this construction permit which was originally issued on August 9, 1995, has been revised at the request of the Permittee to allow Boiler 2 to resume operation (See Condition 10.)

If you have any questions on this permit, please call Manish Patel at 217/782-2113.

Edwin C. Bakowski, P.E.                      Date Signed: \_\_\_\_\_  
Acting Manager, Permit Section  
Division of Air Pollution Control

ECB:MNP:

cc:    FOS - Region 1, Illinois EPA  
      CAAPP Permit Analyst, Illinois EPA



Attachment 2

Original Evaluation of Net Emission Change (Tons/Year)  
(evaluation accompanying the original issuance of this Construction Permit for the Cogeneration System in 1995)

Scenario	NOx	CO	PM/PM10
Future Permitted Emissions			
Three New Turbines	73.21	89.48	17.45
Two Remaining Gas Boilers	36.02	10.80	3.54
Subtotal	109.23	100.28	20.99
Past Actual Emissions			
Emissions of Four Existing Boilers (1993 & 1994)	72.04	21.60	7.08
Decrease from Shutdown of Two Boilers***	36.02	10.80	3.54
Net Increase	37.19	78.68	13.91
PSD Significant Emission Rate	40	100	25/15
Major Project?	No	No	No/No

\*\*\* The emissions decrease from the shutdown of two boilers was based on the fuel usage for the boilers during 1993 and 1994, and standard USEPA emission factors (AP-42).

ECB:MNP: