

## BACT DETERMINATION 661-1

**Emission Unit:** Diesel fired emergency internal combustion (IC) engine  
**Rating:** 685 BHP

**Facility Name:** University of California, Davis  
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**Engineer:** Alex Huth  
**Date:** December 26, 2012

**Application #:** C-12-125

**I. Proposal:** The applicant is proposing to install a 685 BHP diesel fired emergency IC engine to power an electric generator when electrical power from the utility grid is interrupted.

**II. Applicability:** The proposed emissions for the new emergency engine are shown below.

	VOC	CO	NO <sub>x</sub> (as NO <sub>2</sub> )	SO <sub>x</sub> (as SO <sub>2</sub> )	PM <sub>10</sub>
Proposed Emissions	9.7 lb/day	13.4 lb/day	98.4 lb/day	0.2 lb/day	1.1 lb/day
Rule 3.4, Section 301.1 Triggers	10.0 lb/day	250.0 lb/day	10.0 lb/day	80.0 lb/day	80.0 lb/day

The engine is a new emissions unit and results in an increase in quarterly potential to emit for all pollutants. As shown above, BACT is not triggered for VOC, CO, SO<sub>x</sub> and PM<sub>10</sub> because the proposed emissions do not exceed the trigger levels specified by Rule 3.4, Section 301.1. BACT is triggered for NO<sub>x</sub> emissions because the proposed emissions exceed the trigger level specified by Rule 3.4, Section 301.1 and the application results in a quarterly increase in potential to emit.

**III. BACT for NO<sub>x</sub>:** Per a District Memorandum<sup>1</sup> (dated June 13, 2008), after June 30, 2008 any new emergency diesel-fired engine with a rating greater than or equal to 175 BHP, but less than or equal to 750 BHP, must meet the NO<sub>x</sub> standards of EPA Tier III engines (effective in 2006). The applicant has provided a copy of the engine manufacturer's guarantee showing that the engine meets the Tier III standard of 3.0 g/bhp-hr for NO<sub>x</sub> + HC. Therefore, BACT is satisfied for NO<sub>x</sub>.

<sup>1</sup>: BACT for Emergency Diesel Internal Combustion Engines, Engineering Section Policies and Procedures Manual.