

PERMIT #1629 TECHNICAL SUPPORT DOCUMENT (TSD)

March 27, 2007

I. GENERAL COMMENTS:

A. Company Information

Physical and mailing address:

1. Carondelet St. Joseph's Hospital
2. 350 N. Wilmot Rd, Tucson, AZ 85711

B. Background

The Carondelet St. Joseph's Hospital (CSJH) currently operates under the old Class II air quality permit. It is considered a synthetic minor for NO_x and SO_x and a true minor for all other pollutants.

This TSD was written to address a minor permit revision that was submitted January 24, 2007 to add two 2172 HP generators. These two "new" generators replace two older generators.

Table 1: Summary of permit actions since last application

Date Received (Most Recent First)	Permit Action
March 14, 2007	Received email from consultant Harry Patton containing updated PTE numbers. Previous numbers did not use PCC fuel sulfur content limit but delivered sulfur content which cannot always be proven.
January 24, 2007	Updates to January 2, 2007 minor permit revision received. Previous application was not signed by the Responsible Official (RO). Previous RO had also changed. Update contained information on new RO.
January 2, 2007	Minor permit revision application received.
November 29, 2005	First five year permit for facility permit issued. (Conversion from 1-yr permit)
October 18, 2004	Renewal permit application received. (Conversion from 1-yr permit to 5-yr permit)
August 19, 2004	Permit application request letter sent.

C. Attainment Classification

The CSJH is located in an area that is in attainment for all pollutants.

II. SOURCE DESCRIPTION

A. Process Description

CSJH provides a variety of medical services to the community. The CSJH operates three boilers and two

emergency generators in support of its operations.

The boilers have been manufactured to fire either natural gas or distillate fuel oil. The source has reported that the primary fuel for the boilers is natural gas and that they do not envisage the use of distillate fuel oil unless, it becomes financially practicable to use as opposed to natural gas. The boilers are fired continuously for more than 8 hours. The emergency generators are fired exclusively with diesel fuel.

B. Air Pollution Control Equipment

No air pollution control equipment is proposed in this minor permit revision.

III. REGULATORY HISTORY

CSJH is currently in compliance with all Pima County Code requirements.

IV. EMISSIONS ESTIMATES

Emission estimates for the CSJH were derived using emission factors from AP-42 tables. AP-42 tables 3.4-1 thru 3.4-4 (Large Stationary Diesel and All Stationary Dual Fuel Engines) were used for emergency generator emission factors. Since there were no changes to the boilers, the previous calculations for the renewals were not changed but were simply carried over.

The emergency generators are fired exclusively with diesel fuel and are sufficiently large that uncontrolled emissions from the generators combined with the boilers (when fired by natural gas or diesel fuel) would result in the CSJH facility being a major source of nitrogen oxides and sulfur oxides. The uncontrolled emissions from the facility when the boilers are firing fuel oil would increase the source wide potential to emit emissions resulting in CSJH becoming a major source for NOx and SOx. Consequently, this permit limits each of the emergency generators to no more than 500 hours per year of operation and the boilers (when fired by fuel oil) limited to 5580 hours per year each.

The following tables outline the CSJH’s total potential to emit uncontrolled (8760 hr/yr) and controlled (500 hr/yr limitation on generators and 5580 hr/yr limitation on the boilers combined when fired by distillate fuel oil).

The PTE has been calculated for the boilers fired by natural gas and distillate fuel oil.

Potential to Emit (Tons per Year) Diesel Fired Generators and Natural Gas Fired Boilers						
	NOx	CO	VOC	SOx	PM ₁₀	HAPs
Uncontrolled*	320.26	27.12	12.11	138.79	2.72	3.11
Controlled**	31.79	12.90	1.43	8.00	1.18	0.43

Potential to Emit (Tons per Year) Diesel Fired Generators and # Distillate Fuel Oil Fired Boilers						
	NOx	CO	VOC	SOx	PM ₁₀	HAPs
Uncontrolled*	326.78	20.30	11.68	271.93	5.07	2.88
Controlled***	30.74	4.18	0.87	92.78	2.28	0.19

- * Generators and boilers operating 8760 hrs/yr
- ** Generators operating 500 hrs/yr and boilers operating 8760hrs/yr
- *** Generators operating 500 hrs/yr and boilers operating 5580hrs/yr

V. APPLICABLE REQUIREMENTS

There are no additional applicable requirements associated with this revision.

VI. PERMIT CONTENTS:

There are no additional permit conditions that have been added to CSJH's current permit. The only change in the permit has been the updating of the equipment to reflect the latest change at the facility.