

## PERMIT #1617 TECHNICAL SUPPORT DOCUMENT (TSD) FORMAT

### **I. GENERAL COMMENTS:**

#### **A. Company Information**

1. Northwest Medical Center
2. 6200 N. La Cholla Blvd.  
Tucson, AZ 85741

#### **B. Background**

The Northwest Medical Center currently has a five-year class II air quality permit. It is considered a synthetic minor for NO<sub>x</sub>, SO<sub>x</sub> VOC and CO.

This permit is the first five-year renewal for the source.

#### **C. Attainment Classification**

The Northwest Medical Center is located in an area that is in attainment for all pollutants.

### **II. SOURCE DESCRIPTION**

#### **A. Process Description**

Northwest Medical Center provides a variety of medical services to the community. The Medical Center operates several boilers and emergency generators in support of its operations. The boilers have been manufactured to fire either natural gas or diesel fuel but are only connected to natural gas pipes. This permit only allows the boilers to fire natural gas. The emergency generators are fired exclusively with diesel fuel and are sufficiently large that uncontrolled emissions from them combined with the boilers would result in the Center being a major source of nitrogen oxides, sulfur oxides and carbon monoxide.

#### **B. Air Pollution Control Equipment**

No air pollution control equipment is used at the source. This permit limits the emergency generators to no more than 500 hours per year of operation each.

### **III. REGULATORY HISTORY**

#### **A. Testing & Inspections**

The Medical Center has been permitted since 1983 and has had regular inspections after that. The source is currently in compliance but has had violations in its history. These violations occurred in 2000 and 2004 for planning, constructing, or operating without a permit (P.C.C. 17.12.140 and 17.12.020). In both cases the Medical Center had installed emergency generators without submitting the required permit applications.

Testing is only required at the Control Officers request.

#### **B. Excess Emissions**

No reports of excess emissions.

#### IV. EMISSIONS ESTIMATES

Emissions estimates for the Medical Center were derived 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. AP-42 tables 1.4-1 thru 1.4-2 (natural gas combustion) were used for the natural gas fired boilers.

The emergency generators are fired exclusively with diesel fuel and are sufficiently large that uncontrolled emissions from them combined with the boilers would result in the Medical Center being a major source of nitrogen oxides, sulfur oxides and carbon monoxide. Consequently, this permit limits the emergency generators to no more than 500 hours per year of operation each.

The following tables outline the Medical Center's total potential to emit (8760 hr/yr) and allowable emission totals with a 500 hr/yr limitation on generators:

##### Potential to emit (Operating 8760 hrs/yr)

NO <sub>x</sub>	CO	PM <sub>10</sub>	VOC	SO <sub>x</sub>	HAPS
680.14	161.27	7.79	20.21	226.34	0.45

##### Allowable emission totals (500hrs/yr limitation on emergency generators)

NO <sub>x</sub>	CO	PM <sub>10</sub>	VOC	SO <sub>x</sub>	HAPS
47.16	16.21	1.08	1.61	12.97	0.18

#### V. APPLICABLE REQUIREMENTS

##### **New Source Performance Standards (NSPS):**

No NSPS rules apply to the source

The following NSPS rules could but do not apply for the following reasons:

40 CFR Subpart D Standards of Performance for Fossil Fuel Fired Steam Generators for Which Construction is Commenced After August 17, 1971.

*This rule does not apply because the affected facilities (boilers) at the Medical Center do not have a capacity greater than 73 megawatts (250 MMBTU).*

40 CFR Subpart Db Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.

*This rule does not apply because the affected facilities (boilers) at the Medical Center do not have a heat input capacity greater than 29 MW (100 million Btu/hour).*

40 CFR Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.

*This rule does not apply because the affected facilities (boilers) at the Medical Center do not have a heat input capacity greater than or equal to 2.9 MW (10 million Btu/hour).*

##### **National Emission Standards for Hazardous Air Pollutants (NESHAP):**

No NESHAP rules apply to the source

The following NESHAP rule could but does not apply for the following reason:

40 CFR Subpart DDDDD Industrial, Commercial and Institutional Boilers and Process Heaters.  
*This rule does not apply because the affected facilities (boilers) at the Medical Center are not located at a major source for hazardous air pollutants.*

**Pima County SIP:**

Rule 321 - Emissions-Discharge Opacity Limiting Standards-Standards and Applicability  
Rule 343 - Visibility Limiting Standard  
Rule 344.A - Odor Limiting Standard

**Pima County Code (PCC) Title 17, Chapter 17.16.:**

17.16.010 Local rules and standards.  
17.16.030 Odor Limiting Standards  
17.16.040 Standards and applicability (Includes NESHAP)  
17.16.050 Visibility limiting standard  
17.16.130 New and Existing Stationary Source Performance Standards  
17.16.165 Standards of performance for fossil-fuel fired industrial and commercial equipment  
17.16.340 Standards of performance for stationary rotating machinery

The following PCC rule could but does not apply for the following reason:

17.16.160 Standards of performance for fossil fuel fired steam generators and general fuel burning equipment.  
*This rule does not apply because there are no affected facilities (boilers) at the facility with a capacity greater than 73 megawatts (250 MMBTU).*

**VI. PERMIT CONTENTS:**

**A. Emission Limits/ Standards:**

Natural Gas Fired Boilers

Particulate Matter Standard	17.16.165.C.1
Visibility Limiting Standards	SIP Rule 321, 17.16.130.B.2 & 17.16.130.B.3
Visible Emissions	SIP 343, 17.16.050.D
Fuel Limitation	17.12.180.A.2

Emergency Generators

Particulate Matter Standard	17.16.340.C.1
Opacity Standard	SIP Rule 321, 17.16.340.E, 17.16.040
Sulfur Dioxide Standard	17.16.340.F
Fuel Limitation	17.16.340.H, 17.04.340.A.123, 17.12.350
Diesel Fired Units	17.12.180.A.2, 17.12.220.B, 17.12.350.A.3.a

General Standards

Odor Limiting Standard	SIP 344, 17.16.030
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**B. Monitoring Requirements:**

Natural Gas Fired Boilers

Emission limitation	17.12.180.A.2
Visible emissions	17.12.180.A.3, & 17.16.040
Fuel Limitation	17.12.180.A.3

Emergency Generators

Visible emissions observations	17.12.180.A.3 & A.4
Installation of non-resetable engine hour meter	17.12.180.A.2, 17.12.220.B & 17.12.350.A.3.c

**C. Record Keeping Requirements:**

Natural Gas Fired Boilers

When required maintain all documentation showing compliance with visible emissions observations and fuel limitation requirements.	17.12.180.A.4
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Emergency Generators

Monthly totals of the engine-hours of operation	17.12.180.A.2, 17.12.220.B & 17.12.180.A.4
Rolling monthly totals of the engine-hours of operation	17.12.180.A.2, 17.12.220.B & 17.12.180.A.4
Operational Log	17.12.180.A.4
Fuel use verification	17.16.010.C & 17.12.180.A.4
Fuel sulfur content and lower heating value	17.16.010.C & 17.16.340.I
Visible emissions observations	17.12.180.A.3 & A.4

When required maintain all documentation showing compliance with engine hour monitoring, visible emissions observations, operational log and fuel limitation requirements.	17.12.180.A.4
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General Standards

Location of Records

Location and retention of permit records	17.12.080, 17.12.180.A.3 & A.4
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**D. Reporting Requirements:**

Natural Gas Fired Boilers

(See General Standards)

Emergency Generators

Exceedences of fuel sulfur content

17.16.340.J & 17.12.180.A.5

General Standards

Excess emissions and permit deviation  
Semiannual summary reports of required monitoring  
Compliance certification reporting  
Emissions inventory reporting

17.12.0180.A.5.b & 17.12.180.E.3.d  
17.12.180.A.5.a  
17.12.210.A.2  
17.12.320

**E. Testing Requirements:**

General Standards

Particulate matter  
Visibility (Opacity)  
Sulfur dioxide  
Sulfur content of liquid and gaseous fuels  
Alternative and equivalent test methods

17.20.180.A.3 & 17.16.165.K.c  
17.12.040  
17.20.010, 17.12.180.A.3 & 17.16.165.K.1.d  
17.16.340.K  
17.12.040.D