TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT NO. 63129

ARIZONA PUBLIC SERVICE COMPANY- APS MCAS, YUMA

I. INTRODUCTION

This Class II synthetic minor permit is issued to Arizona Public Service Company, the Permittee, for the installation and operation of a microgrid, consisting of 40 diesel-fired internal combustion engines in Yuma. The microgrid will provide back up power to US Marine Corps Air Station during grid outage. APS may also operate the generators for supplying power to the grid for peak shaving.

A. Company Information

1. Facility Name: APS MCAS-Yuma
2. Facility Location: 3672 S Marontate Ave. Box 99110 Yuma, AZ 85369
3. Mailing Address: 400 N 5th Street Phoenix, AZ 85004

B. Attainment Classification

The facility is located in an area that is classified as non-attainment for PM_{10} and attainment for all other criteria pollutants.

II. PROCESS DESCRIPTION

The facility proposes to install and operate a mincrogrid consisting of 40 (forty) 685-kW internal combustion engines (ICEs) in Yuma. The microgrid will support the military base for back up power during grid outage. The generators may also be operated in parallel to grid for peak shaving.

III. LEARNING SITES EVALUATION

ADEQ has established the Learning Site Policy to ensure that children at learning sites are protected from adverse air impacts. Learning sites consist of all existing public schools, charter schools and private schools the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board.

Upon review of the ADEQ's database, it was determined that there are two (2) learning sites within two miles of the facility.

1. Yuma Lutheran School
2. James B Rolle School

The ambient impact assessment for criteria pollutants is handled by the modeling that is required through the Minor New Source Review (Minor NSR) program (See Section VII). The Department also conducted a modeling analysis to assess the impact of hazardous air pollutants (HAPs) from the facility on these schools. As shown in table below, the modeled concentration of all HAPs was below the health based acute and chronic ambient air concentration (AAC) levels in A.A.C R18-2-1708.C.

Table 1

Pollutant	1-hr		Annual	
	Modeled concentration	Acute AAC	Modeled concentration	Chronic AAC
Acetaldehyde	1.37E-05	306	1.42E-07	8.62E-04
Acrolein	4.28E-06	0.23	4.44E-08	2.09E-05
Arsenic	2.17E-06	2.5	2.25E-08	4.41E-07
Benzene	4.22E-04	1276	4.37E-06	2.43E-04
Beryllium	1.63E-06	0.013	1.69E-08	7.90E-07
Cadmium	1.63E-06	0.25	1.69E-08	1.05E-06
Chromium	1.63E-06	0.1	1.69E-08	1.58E-07
Formaldehyde	4.29E-05	17	4.45E-07	1.46E-04
Mercury	1.63E-06	1	1.69E-08	3.13E-04
Naphthalene	7.06E-05	75	7.33E-07	5.58E-05
Nickel	1.63E-06	5	1.69E-08	7.90E-06
Selenium	8.15E-06	0.5	8.45E-08	1.83E-02
Toluene	1.53E-04	1923	1.58E-06	5.21E+00
Xylenes	1.05E-04	1736	1.09E-06	1.04E-01

IV. EMISSIONS

The emissions from the engines based on Tier 4f emission standards for new non-road CI engines in 40 CFR 1039.101, and 850 hours of operation per year are as below:

Table 2: Potential Emissions

Pollutant	**Emissions (tons per year)**
PM_{10}	0.77
$PM_{2.5}$	0.77
NO_x	17.20
CO	89.85
SO_2	0.04
VOC	10.27
GHG (expressed as CO_2e)	17,756

V. APPLICABLE REGULATIONS

Table 3: Verification of Applicable Regulations

Unit	Control Device	Rule	Verification
Stationary IC Engines	Selective Catalytic Reduction (SCR)	40 CFR Subpart IIII	The IC engines are manufactured in 2015 and are, thus, subject to New Source Performance Standards (NSPS) under 40 CFR 60 Subpart IIII. As per 40 CFR 63.6590, the engines comply with National Emission Standards for Hazardous Air Pollutants (NESHAP) under 40 CFR 63 Subpart ZZZZ by complying with NSPS standards under 40 CFR 60 Subpart IIII.
Diesel Tank	N/A	A.A.C. R18-2-730	These standards are applicable to unclassified sources.
Fugitive dust sources	Water Trucks Dust Suppressants	A.A.C. R18-2 Article 6 A.A.C. R18-2-702	These standards are applicable to all fugitive dust sources at the facility.
Abrasive Blasting	Wet blasting; Dust collecting equipment; Other approved methods	A.A.C. R-18-2-702 A.A.C. R-18-2-726	These standards are applicable to any abrasive blasting operation.
Spray Painting	Enclosures	A.A.C. R18-2-702 A.A.C. R-18-2-727	This standard is applicable to any spray painting operation.
Demolition/renovation operations	N/A	A.A.C. R18-2-1101.A.8	This standard is applicable to any asbestos related demolition or renovation operations.
Mobile sources	None	A.A.C. R18-2-801	These are applicable to off-road mobile sources, which either move while emitting air pollutants or are frequently moved during the course of their utilization.

VI. MONITORING REQUIREMENTS

A. IC Engines

1. The Permittee is required to purchase engines certified to the applicable emission standards, and install the engines according to the manufacturer's specifications.

2. To demonstrate compliance with the emission standards the Permittee is required to:

   a. Operate and maintain the engines and control devices according to the

manufacturer's emission-related written instructions;

b. Change only those emission-related settings that are permitted by the manufacturer.

B. Fugitive Dust

1. The Permittee is required to keep record of the dates and types of dust control measures employed.

2. The Permittee is required to show compliance with the opacity standards by having a Method 9 certified observer perform monthly survey of visible emission from fugitive dust sources. The observer is required to conduct a 6-minute Method 9 observation if the results of the initial survey appear on an instantaneous basis to exceed the applicable standard.

3. The Permittee is required to keep records of the name of the observer, the time, date, and location of the observation and the results of all surveys and observations.

4. The Permittee is required to keep records of any corrective action taken to lower the opacity of any emission point and any excess emission reports.

C. Periodic Activities

1. The Permittee is required to record the date, duration and pollution control measures of any abrasive blasting project.

2. The Permittee is required to record the date, duration, quantity of paint used, any applicable MSDS, and pollution control measures of any spray painting project.

3. The Permittee is required to maintain records of all asbestos related demolition or renovation projects. The required records include the "NESHAP Notification for Renovation and Demolition Activities" form and all supporting documents.

D. Mobile Sources

The Permittee is required to keep records of all emission related maintenance performed on the mobile sources.

VII. AMBIENT AIR IMPACT ANALYSIS

The facility is subject to Minor New Source Review (NSR) requirements. As the potential to emit for all Minor NSR pollutants except carbon monoxide (CO) is less than the permitting exemption threshold, the facility is only subject to minor NSR requirements for CO. The facility conducted air dispersion modeling for CO to demonstrate compliance with National Ambient Air Quality Standards (NAAQS). The following table demonstrates that the 1-hr and 8-hr modeled concentrations of CO combined with background concentrations of CO are less than the applicable standards.

Table 4

Pollutant	Averaging Timeframe	Modeled Impact ($\mu g/m^3$)	Background concentrations ($\mu g/m^3$)	Total ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	% of NAAQS
CO	8-hour	4,383	4,810	9,193	10,000	92%
CO	1-hour	6,139	5,730	11,869	40,000	30%

VIII. LIST OF ABBREVIATIONS

AAAQG ..... Arizona Ambient Air Quality Guideline
A.A.C. ..... Arizona Administrative Code
ADEQ ..... Arizona Department of Environmental Quality
CO ..... Carbon Monoxide
CO_2e ..... Carbon Dioxide equivalent
HAP ..... Hazardous Air Pollutant
ICE ..... Internal Combustion Engine
lb ..... Pound
mg/m^3 ..... Milligram per Cubic Meter
MMBtu ..... Million British Thermal Units
$\mu g/m^3$ ..... Microgram per Cubic Meter
NAAQS ..... National Ambient Air Quality Standard
NESHAP ..... National Emission Standards for Hazardous Air Plollutants
NO_x ..... Nitrogen Oxide
NO_2 ..... Nitrogen Dioxide
NSPS ..... New Source Performance Standards
NSR ..... New Source Review
PM ..... Particulate Matter
PM_{10} ..... Particulate Matter Nominally less than 10 Micrometers
$PM_{2.5}$ ..... Particulate Matter Nominally less than 2.5 Micrometers
PTE ..... Potential-to-Emit
SO_2 ..... Sulfur Dioxide
TPY ..... Tons per Year
VOC ..... Volatile Organic Compound
yr ..... Year