TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

National Aeronautics and Space Administration (NASA)
Kennedy Space Center (KSC)
Mail Code: AA-B
Kennedy Space Center, FL 32899

Facility ID No. 0090051

PROJECT

Project No. 0090051-028-AV
Application for Major Source Air Operation Permit Revision
Project Name: Operation Permit Revision to Incorporate Conditions of Permit 0090051-025-AC

COUNTY

Brevard County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Waste & Air Resource Programs
Central District Office
Orlando, Florida 32803-3767

November 26, 2014 and
Revised January 21, 2015

Prepared by Stephen Amirault, Project Engineer

GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

I. Project Description:

A. Applicant:
Mr. Kelvin Manning, Associate Director
National Aeronautics and Space Administration (NASA)
Kennedy Space Center (KSC)
Mail Code: AA-B
Kennedy Space Center, FL 32899
kelvin.m.manning@nasa.gov

B. Application Professional Engineer of Record

Dr. Mitchell J. Hait, Ph.D., P.E.
786 Shell Street
Satellite Beach, FL 32937
haitinc@gmail.com

C. Project Location:

Kennedy Space Center
Kennedy Space Center, Brevard County, Florida 32899

C. Project Summary:

The proposed permit revises Title V Permit 0090051-023-AV to include conditions of Construction Permit 0090051-025, issued January 3, 2014. The Construction Permit was issued to authorize the construction and installation of oxidation catalyst emission controls to limit or reduce the concentration of carbon monoxide (CO) in the exhaust of nine stationary Reciprocating Internal Combustion Engines in order to comply with amended requirements contained in 40 CFR Part 63 Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants. The engines participate in the Florida Power & Light (FP&L) Commercial/Industrial Load Control (CILC) program. This project also incorporates regulatory updates and changes to covered emission units.

D. Application Information:

Application and appropriate received on: 08/28/2014
Additional Information Requested on: 10/15/2014
Additional Information Received on: 12/1/2014
Application Complete Determination: 12/1/2014
Draft-Proposed Permit issued on: 12/24/2014
Additional Comments from Applicant to Draft-Proposed Permit received on: 01/7/2015

III. PSD Applicability for Project

As provided in the application, the total project emissions will not exceed the PSD significant emission rates; therefore, the project is not subject to the PSD preconstruction review.

II. Rule Applicability

This project is subject to the preconstruction review requirements of Chapter 403, Florida Statutes, and Chapters 62-204 through 62-297, Florida Administrative Code (F.A.C.), as indicated below.

Subject to:	**Y/N**	**Comments**
Rule 62-210.300, F.A.C. – Stationary Source, General Requirements	Y	Not exempt from general permitting requirements
Rule 62-212.400, F.A.C. – Prevention of Significant Deterioration	N	Facility is not a PSD major source

Subject to:	Y/N	Comments
Rule 62-296.320(4), F.A.C. - General Particulate Emission Limiting Standards	Y	Vehicular traffic on paved and unpaved roads at the facility is a potential source of unconfined particulate matter emissions.
Rules 62-296.320(1) and (2), F.A.C. - General Pollutant Emission Limiting Standards (VOCs and Odor)	Y	Facility operations are a source of VOC emissions.
Rule 62-296.400, F.A.C. - Stationary Source Emission Standards	N	There is no applicable source category.
Rule 62-296.500, F.A.C. - Reasonably Available Control Technology (VOC)	N	Brevard County is an attainment area for ozone.
Rule 62-296.700, F.A.C. - Reasonably Available Control Technology (PM)	N	There is no applicable source category.
Rule 62-204.800, F.A.C. - Standards of Performance for New Stationary Sources (NSPS)	N	The NASA/KSC facility is subject to 40 CFR 60, Subparts A, IIII, JJJJ and OOO.
Rule 62-204.800, F.A.C. National Emission Standard for Hazardous Air Pollutants (NESHAPS – 40 CFR 61)	Y	The NASA/KSC facility is subject to 40 CFR 63, Subparts A, JJJJJJ and ZZZZ.
Rule 62-213, F.A.C. – Operation Permits for Major Source of Air Pollution	Y	Facility is a Title V major source of air pollution for the pollutants oxides of nitrogen (NOx) and VOCs.
Rule 62-297.310, F.A.C. - General Compliance Test Requirements, F.A.C.	Y	Subsequent Compliance Tests are required in the permit for non-emergency engines.

III. Summary of Emissions

As provided by the applicant, emissions from the non-emergency engine emission units incorporated in this permit revision are expected to remain below the following values:

Pollutant	EU No. and brief description	Potential Uncontrolled Emissions tons per year (tpy)	Expected Emissions after Catalyst Control Reductions[3] (tpy)
NOx	EU 088[1] EU093[2]	37.26 92.17	37.26 92.17
CO	EU 088 EU093	9.9 19.85	2.97 5.96
PM	EU 088 EU093	1.16 6.48	0.93 5.18

Pollutant	EU No. and brief description	Potential Uncontrolled Emissions tons per year (tpy)	Expected Emissions after Catalyst Control Reductions[3] (tpy)
PM_{10}	EU 088 EU093	1.16 6.48	0.93 5.18
SO_2	EU 088 EU093	0.02 6.06	0.02 6.06
VOC	EU 088 EU093	0.93 7.52	0.19 1.5

1. *Potential emission totals for EU 088 as provided in Attachment 4 (Tab 11) of Permit Application received 11/06/2013 for project 0090051-025-AC. Calculations express emissions using AP-42 Table 3.4.1 October 1996 emission factors for engines greater than 600 hp and are based on permit limitations of: 1,250 hours per year operation and 170,000 gallons per year of diesel fuel containing 15 parts per million sulfur and a heat content of 137,000 British Thermal Units (BTU) per gallon.*

2. *Potential emission totals for EU 093 as provided in Attachment 4 (Tab 11) of Permit Application received 11/06/2013 for project 0090051-025-AC. Calculations express emissions using AP-42 Table 3.3.1 October 1996 emission factors for engines less than 600 hp. Calculations are based on permit limitations of: 305,000 gallons per year of diesel fuel containing 15 parts per million sulfur and a heat content of 137,000 BTU per gallon. (However, some of the 305,000 gallons authorized to be burned will be used in the uncontrolled emergency engines listed in EU 086.)*

3. *As provided in catalyst manufacturer information included in the application for project 0090051-025-AC, emission reductions are based on manufacturer emission reduction data of uncontrolled emissions expected to be: 70 % for CO, 20% for PM and PM_{10}, and 80% for VOCs.*

IV. Federal NSPS and/or NESHAP Provisions

The permitted emission units are subject to the following NSPS and NESHAP provisions:

NSPS, Subpart A – General Provisions.
NSPS, Subpart IIII – Stationary Compression Ignition (CI) Internal Combustion Engines.
NSPS, Subpart JJJJ, Stationary Spark Ignition (SI) Internal Combustion Engines
NSPS, Subpart OOO, Nonmetallic Mineral Processing Plants
NESHAP, Subpart A – General Provisions.
NESHAP, Subpart ZZZZ – Reciprocating Internal Combustion Engines.
NESHAP, Subpart JJJJJJ – Industrial, Commercial, and Institutional Boilers.

V. Conclusions

The emission limits proposed by the applicant will meet all of the requirements of Chapters 62-204 through 297, F.A.C.

The General and Specific Conditions listed in the proposed permit (attached) will assure compliance with all the applicable requirements of Chapters 62-204 through 297, F.A.C.

VI. Preliminary Determination

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Additional details of this analysis may be obtained by contacting the project engineer, Stephen Amirault, at the Florida Department of Environmental Protection, Waste & Air Resource Programs, Central District Office, 3319 Maguire Blvd., Suite 232, Orlando, Florida 32803-3767, 407/897-4100.