State of Utah

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Department of
Environmental Quality

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Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQE-AN107060057-23

March 14, 2023

Boyd Roberts
Dugway Proving Ground
Department of the Army
5450 Doolittle Avenue
Dugway, UT 84022-5000
boyd.roberts.civ@mail.mil

Dear Mr. Roberts:

Re: Approval Order:
Minor Modification to Approval Order DAQE-AN107060055-20 to Update Equipment and Emissions
Project Number: N107060057

The attached Approval Order (AO) is issued pursuant to the Notice of Intent (NOI) received on November 15, 2021. Dugway Proving Ground must comply with the requirements of this AO, all applicable state requirements (R307), and Federal Standards.

The project engineer for this action is **Jake Ries**, who can be contacted at (385) 306-6530 or jries@utah.gov. Future correspondence on this AO should include the engineer's name as well as the DAQE number shown on the upper right-hand corner of this letter. No public comments were received on this action.

Sincerely,

Bryce C. Bird
Director

BCB:JR:jg

cc: Tooele County Health Department
Dan Fagnant, EPA Region 8

STATE OF UTAH
Department of Environmental Quality
Division of Air Quality

APPROVAL ORDER
DAQE-AN107060057-23
Minor Modification to Approval Order DAQE-AN107060055-20 to Update Equipment and Emissions

Prepared By
Jake Ries, Engineer
(385) 306-6530
jries@utah.gov

Issued to
Dugway Proving Ground - U.S. Army - Dugway Proving Ground

Issued On
March 14, 2023

Issued By

Bryce C. Bird
Director
Division of Air Quality

TABLE OF CONTENTS

GENERAL INFORMATION

CONTACT/LOCATION INFORMATION

Owner Name
Dugway Proving Ground

Source Name
Dugway Proving Ground - U.S. Army - Dugway Proving Ground

Mailing Address
Department of the Army
5450 Doolittle Avenue
Dugway, UT 84022-5000

Physical Address
Department of the Army
5450 Doolittle Avenue
Dugway, UT 84022-5000

Source Contact
Name Boyd Roberts
Phone (435) 831-2546
Email boyd.roberts.civ@mail.mil

UTM Coordinates
309,300 m Easting
4,444,300 m Northing
Datum NAD27
UTM Zone 12

SIC code 9711 (National Security)

SOURCE INFORMATION

General Description
Dugway Proving Ground (DPG), a United States Army installation, is responsible for testing chemical and biological defense systems.

NSR Classification
Minor Modification at Major Source

Source Classification
Located in Attainment Area
Tooele County
Airs Source Size: A

Applicable Federal Standards
NSPS (Part 60), A: General Provisions
NSPS (Part 60), Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
NSPS (Part 60), IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
MACT (Part 63), A: General Provisions
MACT (Part 63), ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
MACT (Part 63), CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities
MACT (Part 63), JJJJJJ: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources
Title V (Part 70) Major Source

Project Description
DPG has requested a modification to AO DAQE-AN107060055-20, to remove three diesel-fired emergency generator engines, install a diesel-fired emergency generator engine, replace a diesel-fired emergency generator engine, and replace a hot water boiler. Facility-wide PTE was re-evaluated based on the updated equipment list. The following updates were made to the AO:

1) Addition of a 713 hp diesel-fired emergency generator engine (II.A.6)
2) Removal of three diesel-fired emergency generator engines, rated at 96 hp, 713 hp, and 755 hp (II.A.6)
3) Replacement of a hot water boiler (II.A.4)
4) Replacement of a 450 hp diesel-fired emergency generator engine with a 324 hp diesel-fired emergency generator engine (II.A.6)
5) Updated PTE to account for updated equipment.

SUMMARY OF EMISSIONS

The emissions listed below are an estimate of the total potential emissions from the source. Some rounding of emissions is possible.

Criteria Pollutant	Change (TPY)	Total (TPY)
CO_2 Equivalent	-55.84	27613.32
Carbon Monoxide	6.54	41.26
Nitrogen Oxides	3.19	163.77
Particulate Matter - PM_{10}	-2.67	7.03
Particulate Matter - $PM_{2.5}$	-2.67	6.91
Sulfur Dioxide	1.72	1.94
Volatile Organic Compounds	-2.78	6.50

Hazardous Air Pollutant	Change (lbs/yr)	Total (lbs/yr)
Generic HAPs (CAS #GHAPS)	-220	140
	Change (TPY)	**Total (TPY)**
Total HAPs	-0.11	0.07

SECTION I: GENERAL PROVISIONS

I.1	All definitions, terms, abbreviations, and references used in this AO conform to those used in the UAC R307 and 40 CFR. Unless noted otherwise, references cited in these AO conditions refer to those rules. [R307-101]
I.2	The limits set forth in this AO shall not be exceeded without prior approval. [R307-401]
I.3	Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved. [R307-401-1]

I.4	All records referenced in this AO or in other applicable rules, which are required to be kept by the owner/operator, shall be made available to the Director or Director's representative upon request, and the records shall include the five-year period prior to the date of the request. Unless otherwise specified in this AO or in other applicable state and federal rules, records shall be kept for a minimum of five (5) years. [R307-401-8]
I.5	At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this AO, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded. [R307-401-4]
I.6	The owner/operator shall comply with UAC R307-107. General Requirements: Breakdowns. [R307-107]
I.7	The owner/operator shall comply with UAC R307-150 Series. Emission Inventories. [R307-150]
I.8	The owner/operator shall submit documentation of the status of construction or modification to the Director within 18 months from the date of this AO. This AO may become invalid if construction is not commenced within 18 months from the date of this AO or if construction is discontinued for 18 months or more. To ensure proper credit when notifying the Director, send the documentation to the Director, attn.: NSR Section. [R307-401-18]

SECTION II: PERMITTED EQUIPMENT

II.A THE APPROVED EQUIPMENT

II.A.1	**Dugway Proving Ground** Tests Chemical and Biological Defense Systems
II.A.2	**Liquefied Petroleum Gas (LPG)-Fired Boilers** A. Bio Lab (Building 2028) Boilers Rating: 7 MMBtu/hr each Quantity: 2 NSPS Applicability: None B. Bio Lab (Building 2029-A) Boilers Boilers less than 5 MMBtu/hr each, exempt from requirements of this AO as per R307-401-10, listed for informational purposes.

II.A.3	**LPG-Fired Boilers (Cont'd)** C. Combined Chem Lab (Building 4156) Boilers Rating: 10.5 MMBtu/hr each Quantity: 2 Burner Rating: 90 ppm NO_x NSPS Applicability: 40 CFR 60 Subpart Dc D. Material Test Facility (Building 8027) Boilers Rating: 10.461 MMBtu/hr each Quantity: 2 Burner Rating: 40 ppm NO_x NSPS Applicability: 40 CFR 60 Subpart Dc
II.A.4	**Fuel Oil-Fired Boilers and Heaters** 68 fuel oil-fired boilers and heaters smaller than 10 MMBtu/hr, 20 of which are subject to 40 CFR 63 Subpart JJJJJJ A. 31 units larger than or equal to 1 MMBtu/hr with a combined rating of 86.19 MMBtu/hr B. 37 units smaller than 1 MMBtu/hr, exempt from requirements of this AO as per R307-401-10, listed for information purposes only.
II.A.5	**LPG-Fired Emergency Generator Engines** 3 engines rated at less than 600 hp with a combined rating of 471 hp (351 kWm, 265 kWe).
II.A.6	**Diesel-Fired Emergency Generator Engines** A. 21 engines rated at or greater than 600 hp with a combined rating of 37,886 hp (28,253 kWm, 23,131 kWe) (one NEW) B. 42 engines rated at less than 600 hp with a combined rating of 8,157 hp (6,082 kWm, 4,671 kWe).
II.A.7	**Diesel-Fired Non-Emergency Generator Engines** A. Police Firing Range Generator Engine Rating: 201 hp (150 kWm, 100 kWe) Manufacture Date: March 2016 NSPS/MACT Applicability: 40 CFR 60 Subpart IIII/40 CFR 63 Subpart ZZZZ B. Chem Lab Generator Engines Rating: 680 hp (507 kWm, 400 kWe) each Quantity: 2 Manufacture Date: May 2011 NSPS/MACT Applicability: 40 CFR 60 Subpart IIII/40 CFR 63 Subpart ZZZZ
II.A.8	**Outdoor Testing and Training (OT)** Outdoor test materials and training operations such as smoke and obscurants, material and delivery systems, munitions and incendiary devices.

II.A.9	**Open Burn/Open Detonation (Source Wide) (OBOD-0)** Open Burning (OB) and Open Detonation (OD) of residual munitions and propellants, explosives, and pyrotechnics (PEP) are conducted in the Dugway Thermal Treatment Facility (DTTF) and on the open ranges.
II.A.10	**OBOD-1** Open Burn at the DTTF destroys solid propellant, propellant charges, and bulk explosives.
II.A.11	**OBOD-2** Open Detonation at the DTTF destroys conventional range recovered munitions, residual explosive material housed in munitions, hung ordnance, solid propellants and obscurant when the explosive and nonexplosive components cannot be safely separated.
II.A.12	**OBOD-3** Due to safety concerns, some munitions must be destroyed in place. In these emergency situations, explosives ordnance experts use Department of Defense approved procedures best suited to the specific circumstances.
II.A.13	**Underground Storage Tanks (TNK-1)** Four 20,000-gallon underground Fuel Oil No. 2 storage tanks. Three tanks are located at the Baker facility and one tank is located at the Ditto facility. Three underground gasoline storage tanks. One 10,000-gallon tank is located at the AAFES gas station, one 20,000-gallon tank is located at the English Village Motor Pool and one 20,000-gallon tank is located at the Ditto Motor Pool.
II.A.14	**Aboveground Storage Tanks (TNK-2)** Two 24,000-gallon aboveground JP-4 storage tanks located at the Michael Army Airfield.
II.A.15	**Combined Chemical Test Facility (CCTF)*** The CCTF includes emission units CCTF-1 (Bldg 4156) and CCTF-2 (Bldg 4165). Chemical agent operations are conducted at CCTF. Air from each room where chemical agent operations are performed is exhausted to the atmosphere through laboratory exhaust stacks equipped with multiple HEPA and carbon filters in series. Operated in accordance with Army regulations PAM385-61, AR 50-1, and other the rules and standards.
II.A.16	**Bushnell Material Test Facility (BMTF)*** The BMTF and associated buildings (BMTF-1 - 8) are used to test military hardware under varied direct exposure to chemical agents and non-agents. Operations are conducted in Multi-Purpose Chambers, Agent Transfer Chambers, Thermal Pollution Abatement Device, Closed System Chamber, and Agent Repository. Emission controls include Pollution Abatement System, Redundant Pollution Abatement System, HEPA filters, and carbon filters. Operated in accordance with Army regulations PAM385-61 and AR 50-1.
II.A.17	**Life Sciences Test Facility (LSTF)*** The LSTF and associated buildings are used to conduct operations with biosafety level (BSL) 1, 2, and 3 materials. The LSTF includes emission units LSTF 1 through 4. BSL-3 operations are conducted in Class II or III Biological Safety Cabinets (BSCs). HEPA filters controls emissions to the atmosphere from the containment area. Operated in accordance with Army regulations PAM385-10, PAM 385-69, AR 50-1, and other CDC and HHS rules and standards. *Listed for information purposes only.

SECTION II: SPECIAL PROVISIONS

II.B REQUIREMENTS AND LIMITATIONS

II.B.1	**Conditions on permitted sources (Source wide)**
II.B.1.a	Conditions on All Approved Installations A. Emissions from sources of fugitive dust shall be minimized B. For all affected emission units, prompt reporting of deviations from permit requirements shall be defined as written notification within 21 days. [R307-401-8]
II.B.1.b	The owner/operator shall only use diesel and fuel oil that contain less than 15 ppm sulfur. [R307-401-8]
II.B.1.b.1	To demonstrate compliance with the diesel fuel and fuel oil requirements for any diesel fuel and fuel oil purchased, the owner/operator shall keep and maintain fuel purchase invoices. The owner/operator shall obtain certification of sulfur content from the fuel supplier or fuel purchase invoices indicating that the diesel or fuel oil purchased meets the sulfur content requirement. [R307-401-8]
II.B.1.c	Conditions on LPG-Fired Boilers, Heaters and Generators A. Visible emissions shall be no greater than 20 percent opacity for affected emission units constructed after April 25, 1971 B. Visible emissions shall be no greater than 40 percent opacity for affected emission units constructed prior to April 25, 1971 C. The consumption of LPG on DPG for all LPG-fired boilers and heaters, that have a heat input that is greater than 5.0 MMBTU/hr, and all LPG-fired generators, shall not exceed 1,750,000 gallons per rolling 12-month period By the 15th day of each month, DPG shall calculate the total volume of fuel consumed in the previous 12 months. Fuel consumption for each affected emission unit shall be determined by a fuel meter, fuel bills, or trip tickets. Records of fuel consumption shall be kept on a monthly basis for each affected emission unit. [R307-401-8]
II.B.1.d	Additional Conditions on NSPS LPG-Fired Boilers and Heaters A. DPG shall comply with all applicable requirements of 40 CFR 60 Subpart A B. DPG shall keep records of the amount of fuel combusted for each month for each affected emission unit. Fuel consumption for the affected emission units shall be determined by a common line fuel meter, fuel bills, or tank system gauge. Fuel consumption shall be prorated between the affected emission units based upon the respective design heat input rates. [R307-401-8]

II.B.1.e	Conditions on Fuel Oil-Fired Boilers and Heaters A. Visible emissions shall be no greater than 20 percent opacity for affected emission units constructed after April 25, 1971 B. Visible emissions shall be no greater than 40 percent opacity for affected emission units constructed before April 25, 1971 C. The combined consumption of #2 and #1 diesel for all boilers and heaters on DPG that have a heat input that is greater than 1.0 MMBTU/hr, shall not exceed 1,000,000 gallons per rolling 12-month period. [R307-401-8]
II.B.1.f	Conditions on Diesel-Fired Generators A. Visible emissions shall be no greater than 20 percent opacity for affected emission units manufactured after January 1, 1973, except for operation not exceeding 3 minutes in any hour B. Visible emissions shall be no greater than 40 percent opacity for affected emission units manufactured before January 1, 1973, except for operation not exceeding 3 minutes in any hour C. The consumption of diesel on DPG for diesel-fired generators shall be no greater than 250,000 gallons per rolling 12-month period for all emission units except those used for emergency power generation. [R307-401-8]
II.B.1.g	Conditions on Diesel, and LPG-Fired Emergency Generators Emergency generators shall be used for electricity producing operation only during the periods when electric power from the public utility is interrupted or during maintenance. [R307-401-8]
II.B.1.h	Conditions on Outdoor Testing and Training A. Outdoor testing and training shall be performed at a location such that the intended actual point of release is not closer than 2 km from the boundary of property comprising DPG or which DPG has a legal use agreement B. DPG shall submit an annual plan of outdoor tests and training operations for planned releases to be performed in the upcoming year (federal fiscal year beginning October 1) for approval of test parameters no later than June 30 of each year for the new federal fiscal year. The plan shall include all tests and training operations which may result in the release of criteria pollutants and HAPs into the atmosphere and the following information: 1) Name of each test or training operation material(s) which release criteria pollutants and HAPs into the air 2) Maximum quantities which may be released 3) Maximum rates of release (quantity per hour) 4) Projected dates of release. [R307-401-8]

II.B.1.i	Conditions on Open Burn/Open Detonation (Source Wide) A. OB and OD of residual munitions and propellants, explosives, and pyrotechnics (PEP) at the affected emission unit shall be conducted in the DTTF (OBOD-1 and OBOD-2) unless emergency in-place OD on the open range (OBOD-3) is necessary for safety reasons and is conducted in compliance with the Utah State issued Resource Conservation and Recovery Act permit. The DTTF is located in the southeast area of the affected emission unit approximately 1.9 miles west of the affected emission unit east boundary and 1,400 feet north of Durand Road. The 40-acre DTTF is oval-shaped, measuring approximately 1,300 feet by 1,800 feet. B. To meet the clearing index requirement of R307-202-7 and BACT requirement of R307-401-8 (1), all of the following conditions shall exist at the time of each non-emergency OB and OD event at the approximate location of the event: 1) Mixing height greater than or equal to 500 meters, 2) Wind speed greater than or equal to 3 miles per hour, 3) Wind speed less than or equal to 15 miles per hour, and 4) No air quality advisories or alerts for Tooele County. Each event shall be conducted between 1 hour after sunrise and 1 hour before sunset. C. DPG shall conduct each OB and OD event at the DTTF (OBOD-1 & OBOD-2) in accordance with the current sound focusing mitigation plan (SFMP) as approved by the Director. The current approved SFMP is dated March 21, 2001. The SFMP shall include procedures to minimize the effects of over pressure on people outside the DPG boundary. The plan shall contain specific criteria that will be used to decide whether or not to proceed with each OB and OD event. If a nuisance as defined in Section 76-10-803 of the Utah Code is created by an OB event, the OB portion of the SFMP shall be revised and approved by the Director before conducting any additional OB events. If a nuisance as defined in Section 76-10-803 is created by an OD event, the OD portion of the SFMP shall be revised and approved by the Director before conducting any additional OD events D. A sign cautioning the public must be posted on the facility boundary and Durand road if an OB burn event is used to thermally treat waste containing more than 325 pounds of HCl. [R307-401-8]
II.B.2	**Source specific requirements**
II.B.2.a	Conditions to Open Burn in DTTF A. Net explosive weight shall be no greater than 1,500 lbs per event B. Net explosive weight shall be no greater than 150,000 lbs per rolling 12-month period. [R307-401-8]

II.B.2.b	Conditions on Open Detonation in DTTF A. Net explosive weight shall be no greater than 1,500 lbs per event B. Net explosive weight shall be no greater than 150,000 lbs per rolling 12-month period. [R307-401-8]
II.B.2.c	Conditions on Open Detonation on Open Range A. Each event shall be conducted after the area has been secured according to Table 3-4 in PAM 385-64 "Withdrawal Distances for Nonessential Personnel", and between 1 hour after sunrise and 1 hour before sunset B. Net explosive weight shall be no greater than 1,500 lbs per event C. Net explosive weight shall be no greater than 50000 lbs per rolling 12-month period. [R307-401-8]

PERMIT HISTORY

This Approval Order shall supersede (if a modification) or will be based on the following documents:

Supersedes	DAQE-AN107060055-20 dated May 14, 2020
Incorporates	Additional Information dated April 1, 2021
Incorporates	Additional Information dated May 28, 2021
Is Derived From	NOI dated November 15, 2021
Incorporates	Revised NOI dated April 19, 2022
Incorporates	Additional Information dated May 12, 2022
Incorporates	DAQE-MN107060057-22 dated June 28, 2022
Incorporates	Additional Information dated August 4, 2022
Incorporates	Additional Information dated October 26, 2022

ACRONYMS

The following lists commonly used acronyms and associated translations as they apply to this document:

40 CFR	Title 40 of the Code of Federal Regulations
AO	Approval Order
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CDS	Classification Data System (used by Environmental Protection Agency to classify sources by size/type)
CEM	Continuous emissions monitor
CEMS	Continuous emissions monitoring system
CFR	Code of Federal Regulations
CMS	Continuous monitoring system
CO	Carbon monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent - Title 40 of the Code of Federal Regulations Part 98, Subpart A, Table A-1
COM	Continuous opacity monitor
DAQ/UDAQ	Division of Air Quality
DAQE	This is a document tracking code for internal Division of Air Quality use
EPA	Environmental Protection Agency
FDCP	Fugitive dust control plan
GHG	Greenhouse Gas(es) - Title 40 of the Code of Federal Regulations 52.21 (b)(49)(i)
GWP	Global Warming Potential - Title 40 of the Code of Federal Regulations Part 86.1818-12(a)
HAP or HAPs	Hazardous air pollutant(s)
ITA	Intent to Approve
LB/YR	Pounds per year
MACT	Maximum Achievable Control Technology
MMBTU	Million British Thermal Units
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOI	Notice of Intent
NO_x	Oxides of nitrogen
NSPS	New Source Performance Standard
NSR	New Source Review
PM_{10}	Particulate matter less than 10 microns in size
$PM_{2.5}$	Particulate matter less than 2.5 microns in size
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
R307	Rules Series 307
R307-401	Rules Series 307 - Section 401
SO_2	Sulfur dioxide
Title IV	Title IV of the Clean Air Act
Title V	Title V of the Clean Air Act
TPY	Tons per year
UAC	Utah Administrative Code
VOC	Volatile organic compounds