State of Utah

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Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQE-AN160660003-24

December 19, 2024

Anthony Gustin
Novva SLC Common, LLC
6524 West Old Bingham Highway
West Jordan, UT 84081
a.gustin@novva.com

Dear Mr. Gustin:

Re: Approval Order: Modification to Approval Order DAQE-AN160660001-22 to Install New Power Generation Engines
Project Number: N160660003

The attached Approval Order (AO) is issued pursuant to the Notice of Intent (NOI) received on May 30, 2024. Novva SLC Common, LLC must comply with the requirements of this AO, all applicable state requirements (R307), and Federal Standards.

The project engineer for this action is **John Jenks**, who can be contacted at (385) 306-6510 or jjenks@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:JJ:jg

cc: Salt Lake County Health Department
EPA Region 8

STATE OF UTAH
Department of Environmental Quality
Division of Air Quality

APPROVAL ORDER
DAQE-AN160660003-24
Modification to Approval Order DAQE-AN160660001-22 to Install New Power Generation Engines

Prepared By
John Jenks, Engineer
(385) 306-6510
jjenks@utah.gov

Issued to
Novva SLC Common, LLC - West Jordan Data Center

Issued On
December 19, 2024

Issued By

Bryce C. Bird
Director
Division of Air Quality

TABLE OF CONTENTS

GENERAL INFORMATION

CONTACT/LOCATION INFORMATION

Owner Name
Novva SLC Common, LLC

Source Name
Novva SLC Common, LLC - West Jordan Data Center

Mailing Address
6524 West Old Bingham Highway
West Jordan, UT 84081

Physical Address
6524 West Old Bingham Highway
West Jordan, UT 84081

Source Contact
Name: Sophia Gump
Phone: (210) 591-5485
Email: s.gump@novva.com

UTM Coordinates
411,485 m Easting
4,491,982 m Northing
Datum NAD83
UTM Zone 12

SIC code 7376 (Computer Facilities Management Services)

SOURCE INFORMATION

General Description
Novva SLC Common, LLC (Novva) operates a data center in Salt Lake County. The data center houses servers to store, manage, and disseminate data. The servers require both primary power and backup power contingencies to preserve services for customers in the case that local power is interrupted.

NSR Classification
Major Modification at Minor Source

Source Classification
Located in Northern Wasatch Front O3 NAA, Salt Lake City UT $PM_{2.5}$ NAA, Salt Lake County SO_2 NAA
Salt Lake County
Airs Source Size: A

Applicable Federal Standards
NSPS (Part 60), A: General Provisions
NSPS (Part 60), IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
NSPS (Part 60), JJJJ: Standards of Performance for Stationary Spark 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), DDDDD: National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

Project Description
Novva has requested to expand power generation at its existing West Jordan Data Center. The source is requesting to install 72 new natural gas-fired IC engines, which will power generators providing primary power for the site's two (2) new data center buildings. In addition, a second change was requested under a separate NOI submitted on May 30, 2024, which covered multiple updates in both the diesel-fired emergency engine generators and diesel storage tanks. The equipment list will be updated to reflect these changes in previously permitted equipment. This project will reclassify the source as a major CO and HAP source subject to Title V. The source will obtain emission reduction credits in the amount of 47 tpy of NO_x to satisfy the offset requirements of R307-421. Finally, this project also includes updated modeling based on the equipment changes and some adjustments to stack heights.

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)
Ammonia		61.01
CO_2 Equivalent	990854	997261.00
Carbon Monoxide	196.54	202.72
Nitrogen Oxides	43.87	51.28
Particulate Matter - PM_{10}	30.42	30.87
Particulate Matter - $PM_{2.5}$	30.42	30.87
Sulfur Dioxide	15.22	15.26
Volatile Organic Compounds	46.75	48.28

Hazardous Air Pollutant	Change (lbs/yr)	Total (lbs/yr)
1,3-Butadiene (CAS #106990)	180	182
1-METHYLNAPHTHALENE (CAS #90120)	20	26
2,2,4-Trimethylpentane (CAS #540841)	180	180
Acetaldehyde (CAS #75070)	5700	5700
Acrolein (CAS #107028)	3500	3500
Benzene (Including Benzene From Gasoline) (CAS #71432)	229	300
Biphenyl (CAS #92524)	3620	3620
Ethyl Benzene (CAS #100414)	27	27
Formaldehyde (CAS #50000)	46360	46373
Generic HAPs (CAS #GHAPS)	258	280
Hexane (CAS #110543)	725	760
Methanol (CAS #67561)	1700	1700
Naphthalene (CAS #91203)	51	51

PAH, Total (CAS #234)	18	18
Styrene (CAS #100425)	16	16
Toluene (CAS #108883)	38	280
Xylenes (Isomers And Mixture) (CAS #1330207)	-430	120
	Change (TPY)	**Total (TPY)**
Total HAPs	31.10	31.56

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	**West Jordan Data Center**
II.A.2	**Natural Gas-Fired Generator Engines** Seventy-two (72) Jenbacher Model: JGS 620 J715 Rating: 3271.8 kW (4,601 hp) Control: Selective Catalytic Reduction (SCR) and Oxidation Catalyst NSPS/MACT Applicability: 40 CFR 60 Subpart JJJJ, 40 CFR 63 Subpart ZZZZ
II.A.3	**Diesel-fired Emergency Generator Engines** Seventeen (17) MTU 1500 Rating: 1,736 kW (2,328 hp) each Model Year: 2019 Fuel: Ultra-low Sulfur Diesel (ULSD) Control: SCR NSPS/MACT Applicability: 40 CFR 60 Subpart IIII, 40 CFR 63 Subpart ZZZZ
II.A.4	**Diesel-fired Emergency Generator Engine** Cat C15 (Office) Rating: 568 kW (762 HP) Model Year: 2019 Fuel: ULSD Control: SCR NSPS/MACT Applicability: 40 CFR 60 Subpart IIII, 40 CFR 63 Subpart ZZZZ
II.A.5	**Diesel-fired Emergency Generator Engines** Eleven (11) Kohler (KD 2500) Rating: 2,700 kW (3,621 HP) each Model Year: 2019 Fuel: ULSD Control: SCR NSPS/MACT Applicability: 40 CFR 60 Subpart IIII, 40 CFR 63 Subpart ZZZZ
II.A.6	**Diesel-fired Emergency Generator Engines** Four (4) Cummins 2000 Rating: 2,179 kW (2,922 HP) each Model Year: 2019 Fuel: ULSD Control: SCR NSPS/MACT Applicability: 40 CFR 60 Subpart IIII, 40 CFR 63 Subpart ZZZZ
II.A.7	**Diesel-fired Emergency Generator Engines** Two (2) MTU 1750 Rating: 1,910 kW (2,561 HP) each Model Year: 2019 Fuel: ULSD Control: SCR NSPS/MACT Applicability: 40 CFR 60 Subpart IIII, 40 CFR 63 Subpart ZZZZ

II.A.8	**Diesel-fired Emergency Generator Engines** Two (2) MTU 2000 Rating: 2,279 kW (3056 HP) each Model Year: 2019 Fuel: ULSD Control: SCR NSPS/MACT Applicability: 40 CFR 60 Subpart IIII, 40 CFR 63 Subpart ZZZZ
II.A.9	**Eleven (11) Bulk Diesel Storage Tanks** Contents: ULSD Capacity (gallons): 8,000
II.A.10	**Four (4) Diesel Belly Tanks** Contents: ULSD Capacity (gallons): 3,650
II.A.11	**Thirty-two (32) Diesel Day Tanks** Contents: ULSD Capacity (gallons): 400
II.A.12	**Boiler** Rating: <5 MMBtu/hr Fuel: Natural Gas NSPS/MACT Applicability: 40 CFR 63 Subpart DDDDD

SECTION II: SPECIAL PROVISIONS

II.B REQUIREMENTS AND LIMITATIONS

II.B.1	**Natural Gas Generator Engine Requirements**
II.B.1.a	The owner/operator shall not emit more than the following from each natural gas-fired engine on site: A. NO_x: 0.0152 g/bhp-hr (0.15 lb/hr) B. CO: 0.065 g/bhp-hr (0.63 lb/hr) C. VOC: 0.0155 g/bhp-hr (0.15 lb/hr). [R307-401-8]
II.B.1.a.1	To demonstrate compliance with these emission rates, the owner/operator shall test each engine as per the requirements of 40 CFR 60 Subpart JJJJ. [40 CFR 60 Subpart JJJJ, R307-401-8]
II.B.1.b	The owner/operator shall combust only pipeline-quality natural gas as fuel in each natural gas-fired engine. [R307-401-8]
II.B.1.c	The exhaust stack height for each natural gas-fired generator engine shall be no less than 29.9 feet (9.1 meters) as measured from the ground. [R307-401-8]

II.B.2	**Emergency Generator Engine Requirements**
II.B.2.a	The owner/operator shall not emit more than the following from each emergency engine on site: CAT C15: 0.83 lb/hr NO_x Cummins 2000: 3.41 lb/hr NO_x MTU 1500 Miratech: 3.33 lb/hr NO_x MTU 1500 SafetyPower: 3.33 lb/hr NO_x MTU 1750: 3.38 lb/hr NO_x MTU 2000: 3.63 lb/hr NO_x Kohler 2500: 6.67 lb/hr NO_x [R307-401-8]
II.B.2.a.1	To demonstrate compliance with the emission rate, the owner/operator shall test each engine as outlined in 40 CFR 60 Subpart IIII. [40 CFR 60 Subpart IIII, R307-401-8]
II.B.2.b	The owner/operator shall not operate each emergency engine on site for more than 42 hours per rolling 12-month period during non-emergency situations. There is no time limit on the use of the engines during emergencies. [40 CFR 60 Subpart ZZZZ, R307-401-8]
II.B.2.b.1	To determine compliance with a rolling 12-month total, the owner/operator shall calculate a new 12-month total by the 20th day of each month using data from the previous 12 months. Records documenting the operation of each emergency engine shall be kept in a log and shall include the following: A. The date the emergency engine was used B. The duration of operation in hours C. The reason for the emergency engine usage. [40 CFR 60 Subpart ZZZZ, R307-401-8]
II.B.2.b.2	To determine the duration of operation, the owner/operator shall install a non-resettable hour meter for each emergency engine. [R307-401-8, 40 CFR 63 Subpart ZZZZ]
II.B.2.c	The owner/operator shall perform maintenance and testing of the emergency generator engines in accordance with the following: A. The owner/operator shall not operate more than two (2) emergency generator engines at one time for maintenance and testing operations B. Each emergency generator shall only be tested between the hours of 7:00 a.m. and 7:00 p.m. [R307-410]
II.B.2.c.1	The owner/operator shall: A. Record the date and time that the maintenance and testing were performed B. Record the emergency generator engine that was maintained and tested; C. Maintain records of maintenance and testing. [R307-401-8]

II.B.2.d	The exhaust stack height for the CAT C15 (office) emergency generator engine shall be no less than 9.1 feet (2.8 meters) as measured from the ground. The exhaust stack height for all other emergency generator engines (except the CAT C15 emergency generator) shall be no less than 42 feet (12.8 meters) as measured from the ground. [R307-401-8]
II.B.2.e	The owner/operator shall only use diesel fuel (e.g., fuel oil #1, #2, or diesel fuel oil additives) as fuel in each emergency engine. [R307-401-8]
II.B.2.e.1	The owner/operator shall only combust diesel fuel that meets the definition in 40 CFR 1090.305 of ULSD, which has a sulfur content of 15 ppm or less. [R307-401-8]
II.B.2.e.2	To demonstrate compliance with the ULSD fuel requirement, the owner/operator shall maintain records of diesel fuel purchase invoices or obtain certification of sulfur content from the diesel fuel supplier. The diesel fuel purchase invoices shall indicate that the diesel fuel meets the ULSD requirements. [R307-401-8]

PERMIT HISTORY

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

Supersedes	AO DAQE-AN160660001-22 dated February 23, 2022
Is Derived From	NOI dated May 30, 2024
Incorporates	Additional Information Received dated May 30, 2024
Incorporates	Additional Information Received dated September 13, 2024
Incorporates	Additional Information Received dated November 14, 2024

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