



State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQE-AN125290003-12

October 25, 2012

Bruce Taylor
Sevier Power Company
620 S Main
Bountiful, UT 84010

Dear Mr. Taylor:

Re: Approval Order: Notice of Intent to Construct a 580 MW Combined Cycle, Natural Gas,
Combustion Turbine Power Plant
Project Number: N012529-0003

The attached document is the Approval Order for the above-referenced project. Future correspondence on this Approval Order should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. The project engineer for this action is John Jenks, who may be reached at (801) 536-4459.

Sincerely,

Bryce C. Bird
Director

BCB:JJ:kw

cc: Mike Owens
Central Utah Health Department

STATE OF UTAH

Department of Environmental Quality

Division of Air Quality

**APPROVAL ORDER: Notice of Intent to Construct a 580 MW
Combined Cycle, Natural Gas, Combustion Turbine Power Plant**

**Prepared By: John Jenks, Engineer
Phone: (801) 536-4459
Email: jjenks@utah.gov**

APPROVAL ORDER NUMBER

DAQE-AN125290003-12

Date: October 25, 2012

Sevier Power Company

Power Plant

Source Contact:

Bruce Taylor

Phone: (801) 916-7341

**Bryce C. Bird
Director**

Abstract

On September 8, 2011, Sevier Power Company (SPC) submitted a NOI to construct and operate a 580 MW, combined-cycle, natural gas-fired power plant located near Sigurd, Utah; an attainment area for all criteria pollutants. In response to a request for additional information, SPC submitted a revision to its NOI on January 19, 2012. As proposed in this revised NOI, the plant will consist of two natural gas-fired, combustion turbines (CT); two, natural gas duct-fired, heat recovery steam generators (HRSG); a natural gas-fired auxiliary boiler; diesel emergency generator; and other associated equipment. The CT/HRSG units are dry low-NO_x units controlled with both selective catalytic reduction (SCR) and oxidation catalysts (oxy-cat). The auxiliary boiler shall be equipped with ultra-low-NO_x burners (ULNB) and flue gas recirculation (FGR). The SPC power plant shall be subject to the provisions of 40 CFR 60 Subparts A, Dc, IIII and KKKK; and 40 CFR 63 Subparts A and ZZZZ. The proposed source emissions are estimated at the following TPY values: PM₁₀ 106, PM_{2.5} (a subset of PM₁₀) 106, NO_x 168.3, SO₂ 25.7, CO 577, VOC 91.6, combined HAPs 8.5, and GHG 2,019,226.1 (expressed as CO_{2e}).

This source is a new major source under PSD. The proposed emissions of NO_x, PM₁₀ and PM_{2.5} exceed the emission thresholds outlined in R307-406-5 and R307-410-4, and so an air quality impact analysis (AQIA) of the proposed project's impact on federal air quality standards and air quality related values is required.

This air quality AO authorizes the project with the following conditions and failure to comply with any of the conditions may constitute a violation of this order. This AO is issued to, and applies to the following:

Name of Permittee:

Sevier Power Company
620 S Main
Bountiful, UT 84010

Permitted Location:

Power Plant
414,332 m Easting 4,300,261 Northing
Zone 12
Sigurd, UT 84657

UTM coordinates: 414332 m Easting, 4300261 m Northing, UTM Zone 12
SIC code: 4911 (Electric Services)

Section I: GENERAL PROVISIONS

- I.1 The limits set forth in this AO shall not be exceeded without prior approval. [R307-401]
- I.2 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.3 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 two-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.4 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.5 The owner/operator shall comply with UAC R307-107. General Requirements: Breakdowns. [R307-107]
- I.6 The owner/operator shall comply with UAC R307-150 Series. Inventories, Testing and Monitoring. [R307-150]
- I.7 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]

Section II: SPECIAL PROVISIONS

II.A The approved installations shall consist of the following equipment:

- II.A.1 **Power Plant**
Nominal 580 MW natural gas-fired combustion turbine power plant
- II.A.2 **Turbine 1**
F-Class combustion turbine with dry low-NO_x
- II.A.3 **HRSG 1**
Heat recovery steam generator with duct burners, SCR and catalytic oxidation
- II.A.4 **Turbine 2**
F-Class combustion turbine with dry low-NO_x
- II.A.5 **HRSG 2**
Heat recovery steam generator with duct burners, SCR and catalytic oxidation
- II.A.6 **Auxiliary Boiler**
85 MMBtu/hr auxiliary boiler with ULNB and FGR
- II.A.7 **Convection Fuel Heaters**
Two (2) 22.3 MMBtu/hr fuel heaters
- II.A.8 **Emergency Generator**
1,250 kWe emergency diesel generator
- II.A.9 **Emergency Fire Water Pump**
300 kWe diesel-fired fire water pump
- II.A.10 **Water Treatment**
Water treatment and storage facilities
- II.A.11 **Ammonia Storage and Handling**
Aqueous ammonia storage and handling equipment

II.B Requirements and Limitations

II.B.1 Conditions on Permitted Source

II.B.1.a SPC shall notify the Director in writing when the installation of the equipment listed in II.A has been completed and is operational. To ensure proper credit when notifying the Director, send your correspondence to the Director, attn: Compliance Section.

The provisions of R307-405-19. Source Obligation apply to this source.

II.B.1.b The owner/operator shall install, calibrate, maintain, and operate a continuous emissions monitoring system on each of the HRSG stacks. The owner/operator shall record the output of the system, for measuring the NO_x and CO emissions. The monitoring system shall comply with all applicable sections of R307-170; 40 CFR 60.13; and 40 CFR 60, Appendix B. The NO_x monitor shall comply with 40 CFR 75, Appendix A and B.

All continuous emissions monitoring devices as required in federal regulations and state rules shall be installed prior to placing the affected source in operation. These devices shall be certified within 90 days of achieving full load, not to exceed 180 days after startup.

Except for system breakdown, repairs, calibration checks, and zero and span adjustments required under paragraph (d) 40 CFR 60.13, the owner/operator of an affected source shall continuously operate all required continuous monitoring systems and shall meet minimum frequency of operation requirements as outlined in R307-170 and 40 CFR 60.13. [R307-170, 40 CFR 60.13]

II.B.1.c Visible emissions shall not exceed the following values:

All natural gas combustion exhaust stacks - 10% opacity
All other emission points - 20% opacity

Opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9. [R307-401-8]

II.B.1.d The owner/operator shall use natural gas as fuel in the combustion turbines, duct burners and auxiliary boiler. [R307-401-8]

II.B.1.e SPC shall conduct post-construction PM_{2.5} ambient air monitoring for a period of no less than three years or until the Director determines that ambient monitoring for PM_{2.5} is no longer warranted. SPC will submit a post-construction PM_{2.5} ambient air quality monitoring plan for approval by the Director no less than 180 days prior to the start of operations.

Post-construction PM_{2.5} monitoring will begin within 30 days of the start of the SPC operations. SPC will provide post-construction monitoring reports to the DAQ on a schedule outlined in the plan approved by the Director. [R307-401-8]

II.B.2 Conditions on Combustion Turbines and HRSGs

II.B.2.a Emissions to the atmosphere from the indicated emission point(s) shall not exceed the following rates and concentrations:

Source: Each Turbine/HRSG Stack

Pollutant	Limitations	Averaging Period
PM ₁₀ /PM _{2.5}	14 lb/hour (with duct firing)	30-day rolling average
NO _x	2.0 ppmvd at 15% O ₂ *	3-hour

CO	3.0 ppmvd at 15% O ₂ *	3-hour
VOC	3.0 ppmvd at 15% O ₂ *	3-hour

* Under steady state operation

[R307-401-8]

II.B.2.b Stack testing to show compliance with the emission limitations stated in the above condition shall be performed as specified below:

Emissions Point	Pollutant	Status	Frequency
HRSG Stacks	PM ₁₀ /PM _{2.5}	*	\$
	NO _x	*	#
	CO	*	#
	VOC	*	%

Testing Status (To be applied to the sources listed above)

- * Initial compliance testing is required. The initial test date shall be performed as soon as possible and in no case later than 180 days after the start up of a new emission source, an existing source without an AO, or the granting of an AO to an existing emission source that has not had an initial compliance test performed. If an existing source is modified, a compliance test is required on the modified emission point that has an emission rate limit.
- \$ Test every year or testing may be replaced with parametric monitoring if approved by the Director
- % Test every five (5) years or testing may be replaced with parametric monitoring if approved by the Director
- # Compliance shall be demonstrated through use of a Continuous Emissions Monitoring System (CEMS) as outlined in Condition II.B.1.b. The Director may require testing at any time.

[R307-165]

II.B.2.c For all emissions testing the following shall apply:

Notification:

The Director shall be notified at least 30 days prior to conducting any required emission testing. A source test protocol shall be submitted to DAQ when the testing notification is submitted to the Director.

The source test protocol shall be approved by the Director prior to performing the test(s). The source test protocol shall outline the proposed test methodologies, stack to be tested, and procedures to be used. A pretest conference shall be held, if directed by the Director.

Sample Location:

The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, or other methods as approved by the Director. An Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approved access shall be provided to the test location.

Volumetric Flow Rate:

40 CFR 60, Appendix A, Method 2 or EPA Test Method No. 19 "SO₂ Removal & PM, SO₂, NO_x Rates from Electric Utility Steam Generators" or other testing methods approved by the Director.

PM₁₀/PM_{2.5}:

For stacks in which no liquid drops are present, the following methods shall be used: 40 CFR 51, Appendix M, Methods 201, 201a and 202, or other testing methods approved by the Director. All particulate captured shall be considered PM₁₀/PM_{2.5}. The back half condensibles shall be used for compliance demonstration as well as for inventory purposes.

For stacks in which liquid drops are present, methods to eliminate the liquid drops should be explored. If no reasonable method to eliminate the drops exists, then the following methods shall be used: 40 CFR 60, Appendix A, Method 5, 5a, 5d, or 5e as appropriate, or other testing methods approved by the Director. The back half condensibles shall also be tested using the method specified by the Director. The portion of the front half of the catch considered PM₁₀ shall be based on information in Appendix B of the fifth edition of the EPA document, AP-42, or other data acceptable to the Director.

NO_x:

40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other testing methods approved by the Director.

CO:

40 CFR 60, Appendix A, Method 10, or other testing methods approved by the Director.

Calculations:

To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Director, to give the results in the specified units of the emission limitation. [R307-165]

II.B.2.d

Compliance with the 3-hour NO_x and CO emission limitations specified in Condition II.B.2.a shall not be required during short-term excursions, limited to a cumulative total of 160 hours annually. Short-term excursions are defined as 15-minute periods designated by the owner/operator that are the direct result of transient load conditions, not to exceed four consecutive 15-minute periods, when the 15-minute average NO_x and CO concentrations exceed 2.0 ppmv and 3.0 ppmv, dry @ 15% O₂, respectively. Transient load conditions include the following:

1. Initiation/shutdown of combustion turbine inlet air-cooling
2. Rapid combustion turbine load changes
3. Initiation/shutdown of HRSG duct burners
4. Provision of Ancillary Services and Automatic Generation Control

During periods of transient load conditions, the NO_x concentration shall not exceed 25 ppmv and the CO concentration shall not exceed 50 ppmv, dry @ 15% O₂. All NO_x and CO emissions during these events shall be included in all calculations of annual mass emissions as required by this permit. [R307-401-8]

II.B.2.e Steady state operation means all periods of combustion turbine operation, except for periods of startup and shutdown as defined below, and periods of transient load conditions as defined in Condition II.B.2.d. Startup is defined as the period beginning with turbine initial firing until the unit meets the ppmvd emission limits in Condition II.B.2.a for steady state operation. Shutdown is defined as the period beginning with the initiation of turbine shutdown sequence and ending with the cessation of firing of the gas turbine engine.

1. Emissions of NO_x from each CT/HRSG unit shall not exceed 126 lb/hr during startup or shutdown operations
2. Emissions of CO from each CT/HRSG unit shall not exceed 959 lb/hr during startup or shutdown operations.

[R307-401-8]

II.B.2.f Emissions of GHG from both CT/HRSG units combined shall not exceed 1,958,552.1 metric tons of CO₂e per rolling 12-month period. Compliance with the rolling 12-month period shall be determined through use of the CO₂ CEM as outlined in condition II.B.1.b above. Non-CO₂ GHGs shall use Emission factors from Table C-2 of 40 CFR Part 98 and global warming potentials from Table A-1 of 40 CFR part 98, along with the actual measured heat input to the combustion turbines. [R307-401-8, R307-170]

II.B.2.g The height of the CT/HRSG stacks shall be no less than 165 feet, as measured from ground level at the base of the stack. [R307-410-6]

II.B.3 **Conditions on Auxiliary Boiler**

II.B.3.a Emissions to the atmosphere from the indicated emission point(s) shall not exceed the following rates and concentrations:

Source: Auxiliary Boiler #2

Pollutant	Limitations	Averaging Period
PM ₁₀ /PM _{2.5}	0.01 lb/MMBtu	3-hour
NO _x	0.017 lb/MMBtu	3-hour
CO	0.0375 lb/MMBtu	3-hour

[R307-401-8]

II.B.3.b Stack testing to show compliance with the emission limitations stated in the above condition shall be performed as specified below:

Emissions Point	Pollutant	Status	Frequency
Auxiliary Boiler	PM ₁₀ /PM _{2.5}	*	%
	NO _x	*	%
	CO	*	%

Testing Status (To be applied to the sources listed above)

- * Initial compliance testing is required. The initial test date shall be performed as soon as possible and in no case later than 180 days after the start up of a new emission source, an existing source without an AO, or the granting of an AO to an existing emission source that has not had an initial compliance test performed. If an existing source is modified, a compliance test is required on the modified emission point that has an emission rate limit.

% Test every five (5) years or testing may be replaced with parametric monitoring if approved by the Director

[R307-165]

II.B.3.c For all emissions testing the following shall apply:

Notification:

The Director shall be notified at least 30 days prior to conducting any required emission testing. A source test protocol shall be submitted to DAQ when the testing notification is submitted to the Director.

The source test protocol shall be approved by the Director prior to performing the test(s). The source test protocol shall outline the proposed test methodologies, stack to be tested, and procedures to be used. A pretest conference shall be held, if directed by the Director.

Sample Location:

The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, or other methods as approved by the Director. An Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approved access shall be provided to the test location.

Volumetric Flow Rate:

40 CFR 60, Appendix A, Method 2 or EPA Test Method No. 19 "SO₂ Removal & PM, SO₂, NO_x Rates from Electric Utility Steam Generators" or other testing methods approved by the Director.

PM₁₀/PM_{2.5}:

For stacks in which no liquid drops are present, the following methods shall be used: 40 CFR 51, Appendix M, Methods 201, 201a and 202, or other testing methods approved by the Director. All particulate captured shall be considered PM₁₀/PM_{2.5}. The back half condensibles shall be used for compliance demonstration as well as for inventory purposes.

For stacks in which liquid drops are present, methods to eliminate the liquid drops should be explored. If no reasonable method to eliminate the drops exists, then the following methods shall be used: 40 CFR 60, Appendix A, Method 5, 5a, 5d, or 5e as appropriate, or other testing methods approved by the Director. The back half condensibles shall also be tested using the method specified by the Director. The portion of the front half of the catch considered PM₁₀ shall be based on information in Appendix B of the fifth edition of the EPA document, AP-42, or other data acceptable to the Director.

NO_x:

40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other testing methods approved by the Director.

CO:

40 CFR 60, Appendix A, Method 10, or other testing methods approved by the Director.

Calculations:

To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Director, to give the results in the specified units of the emission limitation. [R307-165]

II.B.4 Conditions on Emergency Generator

II.B.4.a Emergency generators shall be used for electricity producing operation only during the periods when electric power from the public utilities is interrupted, and for regular maintenance and testing. Records documenting generator usage shall be kept in a log and they shall show the date the generator was used, the duration in hours of the generator usage, and the reason for each generator usage. [R307-401-8]

II.B.5 Conditions on Diesel-Fired Equipment

II.B.5.a The owner/operator shall use a combination of #1 or #2 fuel oil or diesel fuel in the emergency generators and fire pump.

The sulfur content of any #1 or #2 fuel oil or diesel fuel burned shall not exceed 0.0015 percent by weight. Sulfur content shall be determined by ASTM Method D-4294-89, or approved equivalent. Certification of fuels shall be either by the owner/operator's own testing or test reports from the fuel marketer or supplier. For purposes of demonstrating compliance with this limitation, the owner/operator may obtain the above specifications by testing each purchase of fuel in accordance with the required methods; by inspection of the specifications provided by the vendor for each purchase of fuel; or by inspection of summary documentation of the fuel sulfur content from the vendor; provided that the above specifications are available from the vendor for each purchase if requested. [R307-401-8]

Section III: APPLICABLE FEDERAL REQUIREMENTS

In addition to the requirements of this AO, all applicable provisions of the following federal programs have been found to apply to this installation. This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including UAC R307.

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

NSPS (Part 60), KKKK: Standards of Performance for Stationary Combustion Turbines

MACT (Part 63), A: General Provisions

MACT (Part 63), ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Title IV (Part 72 / Acid Rain)

Title V (Part 70) major source

PERMIT HISTORY

This AO is based on the following documents:

Is Derived From
Incorporates

Source submitted NOI dated September 8, 2011
Additional information received dated January 19, 2012

ADMINISTRATIVE CODING

The following information is for UDAQ internal classification use only:

Sevier County

CDS A

NSR, PSD, MACT (Part 63), Attainment Area, Title IV (Part 72 / Acid Rain), Compliance Assurance Monitoring (CAM), Title V (Part 70) major source, Major criteria source, NSPS (Part 60),

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 EPA 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 - 40 CFR Part 98, Subpart A, Table A-1
COM	Continuous opacity monitor
DAQ	Division of Air Quality (typically interchangeable with UDAQ)
DAQE	This is a document tracking code for internal UDAQ use
EPA	Environmental Protection Agency
FDCP	Fugitive dust control plan
GHG	Greenhouse Gas(es) - 40 CFR 52.21 (b)(49)(i)
GWP	Global Warming Potential - 40 CFR Part 86.1818-12(a)
HAP or HAPs	Hazardous air pollutant(s)
ITA	Intent to Approve
LB/HR	Pounds per hour
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
UDAQ	Utah Division of Air Quality (typically interchangeable with DAQ)
VOC	Volatile organic compounds