NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
U.S. DEPARTMENT OF COMMERCE

Air Emissions Management at NIST-Boulder

NIST S 7301.03
Approval Date: 11/19/2025
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1. PURPOSE

The purpose of this suborder is to communicate to all responsible parties the regulatory and permit requirements that NIST will comply with regarding the emission of air pollutants from the NIST-Boulder Site.

2. BACKGROUND

Under Colorado Air Quality Control Commission regulations (5 CCR 1001), the owners or operators of equipment emitting air pollutants, *i.e.*, sources, are required to obtain a permit to emit air pollutants from existing sources or construct new sources. Permitting requirements are based on the quantity and types of pollutants emitted. The fuel consumption or power produced by a source is commonly a *de facto* means of calculating emissions and determining if an Air Pollutant Emission Notice (APEN) form must be submitted to the Colorado Department of Public Health and Environment (CDPHE).

Permit categories are determined based on the quantities of pollutants emitted. Sites with emissions less than 25,000 tons of criteria pollutants (*e.g.*, carbon monoxide, nitrogen oxides, sulfur oxides, particulate matter, volatile organic compounds) and 10 tons of hazardous air pollutants (HAPs) are required to apply for a "construction permit" to construct sources and emit pollutants. Due to the Front Range area, including the Denver metropolitan area, being designated as a severe nonattainment area for ozone, NIST-Boulder is limited to emitting less than 25 tons of nitrogen oxides (NO_x) per year. Hazardous air pollutants are identified in Appendix B of the Colorado Air Quality Control Commission Regulations (5 CCR 1001-5). Sites emitting quantities greater than those listed above are required to apply for a permit under Title V of the Clean Air Act. As NIST-Boulder has air pollutant emissions sources having the combined potential to emit more than 25 tons of NO_x per year, NIST is permitted as a synthetic minor source required to limit emissions to the quantities of NO_x identified in the permit.

[1] The revision history for this document can be found in Appendix A.

The NIST-Boulder site operates seven boilers, seven diesel-fired emergency generators, eleven natural gas-fired emergency generators, and six natural gas-fired water heaters permitted by the CDPHE, regulated as synthetic minor source. A "Construction Permit" (permit number 09BO0159, referred to as "the permit") was issued on May 28, 2009. It has been re-issued multiple times, most recently on October 22, 2025, identifying NIST-Boulder as a synthetic minor source. The sources are identified in Table 6.1 and Appendix B. The permit is a vehicle for communicating regulatory requirements to NIST.

The NIST-WWV/WWVB facility does not have any sources of air pollutant emissions exceeding the threshold at which the submission of an APEN form is required (See Section 6.a.(1)(b) and (c) below).

3. APPLICABILITY

a. The provisions of this suborder apply to all NIST-Boulder workplaces and to all NIST employees and covered associates on the Boulder site who may cause the generation of regulated air pollutants from an existing, new, or proposed source.

b. The provisions of this suborder apply to existing, new, and proposed air pollutant sources including boilers, emergency generators, portable asphalt melting/mixing equipment, and other sources of volatile organic compounds.

c. In general, micro- or bench-scale laboratory activities at NIST-Boulder are exempt from federal and state regulatory requirements and the provisions of this suborder. However, air emissions should be minimized from all sources. Any questions regarding air emissions shall be directed to the NIST Boulder Safety, Health, and Environment Division (BSHED), x5375, Option 3.

d. The provisions of this suborder do not apply to mobile sources such as motor vehicles, exhaust from construction equipment, *etc.*

4. REFERENCES

Requirements common to all NIST Environmental Suborders can be found in Section 4 of NIST O 7301.00. The requirements specific to this suborder are as follows:

a. Colorado Air Quality Control Commission Regulations, 5 CCR 1001-1 through 23.

b. 40 CFR Chapter I, Subchapter C, Air Programs.

c. Mile High Flood District Urban Storm Drainage Criteria Manual, Volume 3.

d. NIST Boulder (Synthetic Minor) Construction Permit 09BO0159.

e. NIST Boulder Operations and Maintenance (O&M) Plan.

5. APPLICABLE NIST DIRECTIVES

Other NIST Environmental Suborders applicable to work covered by this suborder include the following:

a. NIST S 7101.23: *Safety Education and Training*

b. NIST S 7301.01: *Environmental Management System*

6. REQUIREMENTS

a. General Requirements

(1) New Project Review/Identification of Permitting Requirements

(a) The contracting officer representative for any project installing a boiler or emergency generator shall:

i. Complete the Project Planning Environmental Checklist; and

ii. Provide notification to BSHED allowing 15 business days for BSHED to review and provide assistance with identifying regulatory or permitting requirements.

(b) If an individual source (laboratory, fume hood exhaust stack or piece of equipment) will emit of more than 250 pounds of any hazardous air pollutant (identified in 5 CCR 1001-5) in a calendar year, an APEN form shall be submitted to CDPHE. The director of the OU responsible for the process generating the waste shall ensure that BSHED is notified.

(c) Portable generators, whether used by NIST staff or contractors, may be required to be permitted under 5 CCR 1001-5, Part A, II.D, depending upon emissions and operating hours.

(d) If an emission source emitting more than two tons per year of any criteria pollutant will be constructed, an APEN form shall be submitted to CDPHE.

(e) In an area designated as a nonattainment area for a specific criteria pollutant, if an emission source emitting more than one ton per year of the pollutant for which the area is classified as a nonattainment area will be constructed, an APEN form shall be completed and submitted to CDPHE.

NOTE: The Denver Metropolitan Area, including Boulder County, is identified as a severe nonattainment area for ozone resulting in APEN forms having been submitted for all pollutant emitting sources including stationary equipment fueled with diesel or natural gas.

(2) Particulate Matter from Construction and Demolition

(a) Land disturbing work exceeding 5 acres shall be required to use available and practical methods, which are technologically feasible and economically reasonable, to control emissions of particulates. See 5 CCR 1001-3,III.D.2.b.

(b) Construction and/or demolition activities shall be required to obtain a permit for land disturbing activities exceeding 25 acres or 6 months in duration.

(c) An APEN form and Application for Construction Permit for Land Development form shall be completed and submitted to CDPHE. This requirement is specified in the 5 CCR 1001-5, Part B.

NOTE: The Mile High Flood District Urban Storm Drainage Criteria Manual provides guidance covering the control of particulate emissions.

(3) Asbestos Containing Material

NIST-Boulder shall comply with the requirements of 5 CCR 1001-10, when conducting renovation or demolition activities which may disturb or require abatement of asbestos-containing material.

(4) Ozone Depleting Substances (*e.g.*, Chlorofluorocarbons)

NIST-Boulder shall comply with the requirements in 5 CCR 1001-19 when using regulated ozone depleting substances (https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances), specifically:

(a) The intentional venting of any ozone depleting compound refrigerant shall be prohibited;

(b) Stationary units rated at 100 horsepower or greater by the manufacturer, containing ozone depleting refrigerants shall be registered with CDPHE;

(c) Food refrigeration units containing 300 pounds or more of any ozone depleting compound refrigerant shall be registered with CDPHE and registration shall be updated within 60 days of November 1 of each year;

i. Proof of current registration shall be kept by the division owning a registered unit and shall be made available to CDPHE upon request; and

(d) Refrigerant recovery shall be performed by technicians with the appropriate certification to service the piece of equipment from which refrigerants are to be recovered.

(5) Open Burning

(a) Open burning shall be prohibited within the City of Boulder per BRC 10-8-2(12).

(b) Non-commercial cooking fires (grills) may be used.

(6) Report of Excessive Emissions and Deviations

(a) Releases, including air emissions that could endanger human health or the environment, shall be reported to BSHED in accordance with the NIST-Boulder Occupant Emergency Plan (OEP).

i. Odorous emissions not complying with the terms of 5 CCR 1001-4 shall be reported; and

ii. Upon request by CDPHE, NIST shall report (in writing) all deviations from permit conditions within 5 days of receiving the request.

(7) Testing Requirements

(a) NIST shall conduct testing to determine compliance with the permit upon the request of CDPHE.

(b) Only emission testing methods approved by CDPHE will be used to demonstrate compliance with air permit requirements.

(c) Personnel or contractors measuring opacity shall be certified in accordance with Environmental Protection Agency (EPA) Method 9 (40 CFR 60, Appendix A).

b. Permit Requirements

(1) Subject Equipment

The equipment items which shall be subject to the requirements of this suborder are listed below in Table 6.1. Limits on emissions of NO_x from each source are listed in Appendix B.

Table 6.1: Subject Air Emission Sources

Equipment	AIRS Point	Description	Installation
Boilers #17 and 19	016 and 017	38 MMBtu/hr Superior boilers burning natural gas. Building 42. Owned by Division 194.	2011
Boiler #18	018	38 MMBtu/hr Superior boiler burning natural gas. Building 42. Owned by Division 194.	2012
EMG-025	019	Cummins diesel fueled generator. Maximum horsepower 2220 hp. Northwest corner of Building 81. Owned by Division 194.	2012
EMG-92-001	020	Generac diesel fueled generator. Maximum horsepower 1528 hp. West side of Building 92. Owned by Division 184.	2019
EMG-005	021	Diesel-fueled engine powering an emergency generator. Make: Kohler, Model: 100R0ZJ81, S/N: 338980. Design rated at 134 HP.	1993
EMG-C-019	022	Diesel-fueled engine powering an emergency generator. Make: Cummins, Model: DGHE-5750399, S/N: B060887377. Design rated at 67 HP.	2006

Table 6.1: Subject Air Emission Sources (cont.)			
Equipment	**AIRS Point**	**Description**	**Installation**
EMG-026	023	Diesel-fueled engine powering an emergency generator. Make: Cummins, Model: DSHAB-9272815, S/N: L110279537. Design rated at 235 HP.	2012
EMG-03-001	024	Diesel-fueled engine powering an emergency generator. Make: Generac, Model: SD500, S/N: 30011642029. Design rated at 671 HP.	2017
WH-006	025	Natural gas fired boiler. Make: A.O. Smith, Model: T-M50-N, S/N: 39000286. Design rated at 0.38 MMBTU/hr.	
WH-004	026	Natural gas fired boiler. Make: Takagi, Model: T-M50-N, S/N: 39000288. Design rated at 0.38 MMBTU/hr.	
WH-014	027	Natural gas fired boiler. Make: Rheem, Model: 41V50, S/N: 0203V05459. Design rated at 0.04 MMBTU/hr.	2003
WH-016	028	Natural gas fired boiler. Make: Rinnai, Model: C85, S/N: 07-04-000434. Design rated 0.04 MMBTU/hr.	2007
WH-021	029	Natural gas fired boiler. Make: State, Model: SUF-60-120-NE-300, S/N: 1829111215657. Design rated 0.12 MMBTU/hr.	2018
01-EMG-W5-001	030	Diesel emergency generator. Make: Cat, Model: C18 ACERT, S/N: CAT00C18CT3401665. Design rated at 839 HP.	2023
BLR-12	031	Natural gas fired boiler. Make: Lochinvar, Model: FBN0750, S/N: B954458. Design rated at 0.66 MMBTU/hr.	1960
25-BLR-001	032	Natural gas fired boiler. Make: Harsco, Model: N700, S/N: AH13-16-39140. Design rated at 0.7 MMBTU/hr.	2016

Table 6.1: Subject Air Emission Sources (cont.)

Equipment	AIRS Point	Description	Installation
22-BLR-001	033	Natural gas fired boiler. Make: Crest, Model: FBN1501, S/N 1909113872706. Design rated at 1.5 MMBTU/hr.	2019
21-BLR-001	034	Natural gas fired boiler. Make: Aerco, Model: BMK1500, S/N: G-16-0561. Design rated at 1.5 MMBTU/hr.	2016
EMG-C-023	035	Natural gas fired engine powering an emergency generator. Make: Generac, Model: 12521860600, S/N: 2108766. 4 Stroke Turbocharged w/ Lean Burn, designed at 320 hp. Fuel use rate of 798 SCF/Hour at 100% load.	2011
EMG-C-022	036	Natural gas fired engine powering an emergency generator. Make: Generac, Model: 12521860500, S/N: 2108764. 4 Stroke Turbocharged w/ Lean Burn, designed at 320 hp. Fuel use rate of 798 SCF/Hour at 100% load.	2011
EMG-C-021	037	Natural gas fired engine powering an emergency generator. Make: Generac, Model: 12521860500, S/N: 2108765. 4 Stroke Turbocharged w/ Lean Burn, designed at 320 hp. Fuel use rate of 798 SCF/Hour at 100% load.	2011
EMG-020	038	Natural gas fired engine powering an emergency generator. Make: Cummins, Model: GGFD-5861710, S/N: E070065025. 4 Stroke w/ Rich Burn, designed at 74 hp. Fuel use rate of 194 SCF/Hour at 100% load.	2007

Table 6.1: Subject Air Emission Sources (cont.)			
Equipment	**AIRS Point**	**Description**	**Installation**
EMG-020	038	Natural gas fired engine powering an emergency generator. Make: Cummins, Model: GGFD-5861710, S/N: E070065025. 4 Stroke w/ Rich Burn, designed at 74 hp. Fuel use rate of 194 SCF/Hour at 100% load.	2007
EMG-014	039	Natural gas fired engine powering an emergency generator. Make: Onan, Model: GGHC-3378971, S/N: I990988707. 4 Stroke Turbocharged w/ Lean Burn, designed at 107 hp. Fuel use rate of 281 SCF/Hour at 100% load.	1999
EMG-013	040	Natural gas fired engine powering an emergency generator. Make: Onan, Model: 45GGFF, S/N: L980832362. 4 Stroke w/ Lean Burn, designed at 60 hp. Fuel use rate 157 SCF/Hour at 100% load.	1998
EMG-003	041	Natural gas fired engine powering an emergency generator. Make: Onan, Model: 11-5GNAB, S/N: I978649545. 4 Stroke w/ Lean Burn, designed at 15 hp. Fuel use rate of 39 SCF/Hour at 100% load.	1997
EMG-001	042	Natural gas fired engine powering an emergency generator. Make: Cummins, Model: 100ENBA, S/N: H93056501. 4 Stroke w/ Rich Burn, designed at 134 hp. Fuel use rate 352 SCF/Hour at 100% load.	2006
EMG-008	043	Natural gas fired engine powering an emergency generator. Make: Onan, Model: 60EN L, S/N: K910433240. 4 Stroke w/ Lean Burn, designed at 81 hp. Fuel use rate 1680 SCF/Hour at 100% load.	1991

Table 6.1: Subject Air Emission Sources (cont.)			
Equipment	**AIRS Point**	**Description**	**Installation**
WH-020	044	Natural gas fired boiler. Make: Rheem, Model: XG40T06EC, S/N: 71720560. Design rate at 0.036 MMBTU/hr.	2017
EMG-027	045	Natural gas fired engine powering an emergency generator. Make: Onan, Model: GGHH-1325363, S/N: D130490556. 4 Stroke w/ Lean Burn, designed at 134 hp. Fuel use rate 352 SCF/Hour at 100% load.	2013
EMG-028	046	Natural gas fired engine powering an emergency generator. Make: Generac, Model: GGHH-1325363, S/N: QT02224GNAX. 4 Stroke w/ Lean Burn, designed at 30 hp. Fuel use rate 80 SCF/Hour at 100% load.	2014
01-P-EMG-029	047	Natural gas fired engine powering an emergency generator. Make: Generac, Model: SG100, S/N: 3014977223, 4-Stroke /Rich Burn, 134 hp, 1280 scf/hr	2024
OSY-EMG	TBD	Natural gas fired engine powering an emergency generator. Make: Cummins, Model: C45 N6, S/N: E190562907, 4-Stroke, Lean Burn, 60 HP, 623 scf/hr	2019

(2) Equipment Specific Requirements

(a) Requirements for operation and maintenance of permitted sources may be found in the NIST Boulder Operation and Maintenance (O&M) Plan.

(b) The Chief of the Emergency Services Office is responsible for ensuring that the emergency generator located to the north of Building 22 (temporarily identified as OSY-EMG) is maintained in accordance with the manufacturer's instruction and

operation hours are reported to the program manager following the end of each month.

(3) Routine Reporting

(a) While NIST-Boulder is not required to submit routine reports to CDPHE, NIST shall be required to maintain fuel consumption and emissions data as described below and in Sections 9.e and 9.f. Limits on NO_x emissions for each source are found in Appendix B.

i. NIST shall maintain fuel consumption and emissions data for the permitted boilers and generators.

ii. Emissions data shall be calculated for the following criteria pollutants:

(i) Total Suspended Particulate (TSP) for Boilers 17, 18 and 19;

(ii) PM10 for Boilers 17, 18 and 19;

(iii) PM2.5 for Boilers 17, 18 and 19;

(iv) VOCs for Boilers 17, 18 and 19;

(v) NO_x for all permitted boilers and emergency generators; and

(vi) Carbon Monoxide for Boilers 17, 18 and 19.

iii. As allowed under the Synthetic Minor Source Permit, emissions factors provided in the permit shall be used to calculate emissions. If emissions factors for a source were not provided in the permit, the EPA Compilation of Air Pollutant Emissions Factors (AP) 42 emissions factors relevant to the equipment and the efficiency of low-NOx burners shall be used. The emissions factors identified in the *Notes to Permit Holder* section of the permit shall be used.

iv. On a monthly basis, emissions shall be calculated using the fuel consumption data for each source during the previous month and the emissions factors identified above.

v. Emissions shall be tracked in a spreadsheet or database as a 12-month rolling total.

(b) Boilers and generators shall be operated per the specifications shown in Table 6.2.

i. Equipment subject to this Suborder shall be maintained in a manner that ensures compliance with performance requirements established in the permit.

ii. Procedures for operation and maintenance of boilers, emergency generators and natural gas-fueled water heaters shall be documented in an operations and maintenance plan.

iii. Operation and maintenance requirements are identified in the NIST Boulder Operations and Maintenance Plan.

NOTE: Responsibilities for maintenance are established in Section 9 below.

Table 6.2: Key Operating Parameters			
Equipment	**Key Parameter**	**Critical Operating Range**	**Monitoring Procedure and Frequency**
Natural Gas Boilers, Generators and Water Heaters	Opacity/Visible Emissions	≤20% opacity when operating (EPA Method 9) ≤30% opacity for more than 6 minutes during startup	Opacity Testing at Startup or Issuance of Permit. Upon request by CDPHE.
	Odor	Detectable odor	Upon request by CDPHE.
Diesel Emergency Generators	Opacity/Visible Emissions	≤20% opacity when operating ≤30% opacity for more than 6 minutes during startup	Opacity Testing at Startup or Issuance of Permit. Upon request by CDPHE.
	Odor	Detectable odor	Upon request by CDPHE.
	Fuel	Maximum 15 ppm sulfur and Minimum cetane rating 40 or Maximum aromatic compounds 35%	Maintain specifications sheet from fuel vendor

c. Training

(1) Training shall be provided, documented, and recorded in accordance with the requirements of the NIST S 7101.23.

(2) Parties with responsibilities for the construction or modification of air pollutant emissions sources shall complete:

(a) NIST S 7301.11: Environmental Requirements for Construction Contracts - Boulder.

(3) Employees and associates except those identified in Section 6.c(2) shall complete the Accidental Hazardous Material Release Training appropriate to their duties, either:

(a) NIST S 7301.07: Accidental Hazardous Material Release Training for Users; or

(b) NIST S 7301.07: Accidental Hazardous Material Release Training for Non-Users

d. Evaluation of Compliance

(1) BSHED shall conduct a compliance evaluation of the regulatory requirements of this program on at least an annual basis.

(2) Results of compliance evaluations shall be documented and records maintained as environmental management system (EMS) records per Section 6.e.

(3) Significant findings from compliance evaluations shall be addressed using the NIST S 7301.01 requirements for Non-Conformances, Corrective and Preventive Action.

e. Records

(1) NIST shall maintain records as necessary to demonstrate compliance with the permit and other general emission related regulations.

(2) Appendix B (EMS Procedure 15.0) of NIST S 7301.01 shall be used to ensure proper identification, storage, protection, retrieval, retention, and disposal of records.

(a) Records needed to demonstrate compliance with permit requirements shall be maintained by the NIST Facilities Maintenance Division-Boulder (FMD-B). These include:

i. Maintenance logs of permitted boilers indicating records of:

(i) Startups;

(ii) Shutdowns; and

(iii) Malfunctions.

ii. Operations records indicating:

(i) Water consumption by boilers (gallons per day, gpd);

(ii) Fuel consumption (standard cubic feet/day, scf/day) by boilers; and

(iii) Operating hours (emergency generators and water heaters).

(b) BSHED shall maintain the following records:

i. Permit Applications, including APEN forms;

ii. Permits;

iii. Regulatory Correspondence;

iv. Regulatory Inspection Reports;

v. Audit Reports;

vi. Fuel Use/Emissions Calculations;

vii. Monitoring Reports, if required by CDPHE; and

viii. Emergency Notification/Release Reports.

(c) All records required by this Suborder will be maintained for a period of five (5) years.

7. DEFINITIONS

Definitions common to all NIST EMS suborders can be found in Section 6 of NIST O 7301.00. Definitions specific to this suborder:

a. Construction Permit – Permit issued by the Colorado Department of Public Health and Environment authorizing the construction of sources emitting criteria pollutants.

b. Criteria Pollutant – Pollutants for which EPA has established national ambient air quality standards, including carbon monoxide, nitrogen dioxide, sulfur dioxide, total suspended particulate matter, PM10, PM2.5, ozone, volatile organic compounds and lead. In addition, an APEN must be submitted if a source will emit greater than two tons per year of the

following: nitrogen oxides, fluorides, sulfuric acid mist, hydrogen sulfide, total reduced sulfur, reduced sulfur compounds, municipal waste combustor metals and municipal waste combustor acid gases.

c. Open Burning – The burning of material where combustion products are emitted directly into the ambient air without first passing through a chimney or stack.

d. Ozone-Depleting Substances – Any chemical listed as a Class I or Class II substance in Section 602 of the Clean Air Act. These are substances that deplete the ozone layer and are widely used in refrigerators and air conditioning equipment.

e. Particulate Matter – Pollutant that includes dust, soot, and other heterogeneous small, solid materials released into and transported by the air, including particulate matter 2.5µm or less than in diameter (PM2.5), particulate matter 10 µm or less in diameter (PM10) and all particulate matter suspended in air (total suspended particulate or TSP).

f. Part 70, Title V Air Permit – A federally enforceable operating permit issued under 40 CFR Part 70 which regulates the emissions of air pollutants.

g. Synthetic Minor Source – A source that has the potential to emit regulated pollutants in amounts that are at or above the thresholds for major sources but has taken restrictions so that its potential to release is less than the threshold for being regulated as a major source.

8. ACRONYMS

Acronyms common to all NIST EMS suborders can be found in Section 7 of NIST O 7301.00. The acronyms specific to this suborder are as follows:

a. AIRS – Colorado Aerometric Information Retrieval System
b. AP 42 – EPA Compilation of Emissions Factors

c. APCD – Air Pollution Control Division of the Colorado Department of Public Health and Environment

d. APEN – Air Pollutant Emission Notice form

e. BSHED – Boulder Safety, Health and Environment Division (153)

f. CDPHE – Colorado Department of Public Health and Environment

406 g. CUP – Boulder Central Utilities Plant
407
408 h. DCD-B – Design and Construction Division – Boulder (196)
409
410 i. EMS – Environmental Management System
411
412 j. EPA – Environmental Protection Agency
413
414 k. FMD-B – Facilities Maintenance Division – Boulder (194)
415
416 l. HAP – Hazardous Air Pollutant
417
418 m. MMBTU – Million British Thermal Units
419
420 n. MMscf – Million standard cubic feet
421
422 o. NO_x – Nitrogen Oxides
423
424 p. ODS – Ozone Depleting Substance
425
426 q. OEP – Occupant Emergency Plan
427
428 r. OFPM – Office of Facilities and Property Management
429
430 s. OISM – Office of Information Systems Management
431
432 t. OSHE – Office of Safety, Health, and Environment
433
434 u. PM – Particulate Matter
435
436 v. PM2.5 – Particulate Matter less than 2.5 □m in diameter
437
438 w. PM10 – Particulate Matter less than 10 □m in diameter
439
440 x. SCC – Source Compilation Code
441
442 y. scf – Standard cubic feet
443
444 z. SO_x – Sulfur Oxides
445

aa. TBD – To be determined

bb. TPY – Tons per year

cc. VOC – Volatile Organic Compounds

9. RESPONSIBILITIES

Roles and responsibilities common to all NIST Environmental Suborders can be found in Section 8 of NIST O 7301.00. The roles and responsibilities specific to this suborder are as follows:

a. Chief Safety Officer is responsible for overseeing NIST's efforts in complying with the requirements identified in this suborder.

b. OU Directors are responsible for:

(1) Establishing and implementing policies and procedures, as needed, for the requirements of this suborder to be met;

(2) Ensuring subordinate managers have the authority, resources, and training needed to implement OU-established policies and procedures; and

(3) Using OU funds to pay any civil penalties identified in regulatory inspections and resulting from regulatory violations related to equipment owned by their respective OUs.

c. Division Chiefs are responsible for:

(1) Implementing this suborder as it applies to activities involving their personnel and space in accordance with any applicable OU-established policies and procedures;
(2) Ensuring air emissions sources owned by the division are operated and maintained in compliance with the permit and applicable regulations, including ensuring that fuel use records, operating hours or other data are provided to BSHED. This may be accomplished through a work order under which OFPM maintains the source;

(3) Ensuring sources owned by the division are identified with a tag or sign identifying the property identification number and AIRS point number.

(4) Ensuring regulatory inspectors are provided access to areas under their supervision;

(5) Ensuring corrective actions are completed in the timeframe specified by the regulatory agency;

(6) Ensuring CDPHE or EPA inspectors are able to obtain access to areas under that manager's supervision; and

(7) Ensuring deficiencies or violations resulting from regulatory inspections of areas operated by that OU are addressed in the timeframe required by the regulatory agency.

d. The NIST Boulder Air Emissions Program Manager is responsible for:

(1) Acting as the NIST point of contact with regulatory agencies for air pollution issues, including coordinating inspections by regulatory agencies;

(2) Determining whether a proposed source is subject to APEN or permitting requirements. CDPHE provides a checklist for evaluation;

(3) Submitting APEN, Notices-of-Startup and Self Certification forms to CPDHE in a timely manner;

(4) Supporting OFPM regarding finding contractors to perform compliance testing when required;

(5) Supporting OFPM by advising when emissions are at risk of exceeding permitted levels;

(6) Maintaining a spreadsheet to calculate emissions from sources listed in Table 6.1;

NOTE: Fuel use data is provided by OFPM, OISM (184), and the Time and Frequency Division (688) via work order through OFPM.

(7) Performing an internal compliance evaluation once per calendar year at a minimum to verify ongoing compliance with the permit;

(8) Reporting to the CDPHE as specified in Section 6.b;

(9) Communicating the regulatory requirements to affected personnel;

(10) Maintaining this Suborder and keeping it up to date; and

(11) Maintaining general records identified in Section 6.n.

e. The NIST Chief Facilities Management Office is responsible for:

(1) Ensuring information required for completion of APENs, Notices-of-Startup and Self Certification forms is provided to BSHED;

(2) Ensuring compliance testing required under the permit is performed in compliance with permit requirements, within the timeframe specified in the permit following installation of a new source;

(3) Ensuring the AIRS point number is affixed to a source within the timeframe specified in the permit following installation of the source. Tags similar to NIST property identification tags are acceptable;

(4) Ensuring sources listed in the permit and this suborder are operated in a manner that does not exceed the permitted fuel use or emissions limits;

(5) Ensuring sources listed in the permit and this suborder are operated in a manner that does not exceed the following limits: 20% opacity when in operation and opacity not exceeding 30% for more than 6 minutes out of an hour;

(6) Ensuring sources listed in the permit and this suborder are operated in a manner that does not exceed the odor control requirements of Air Quality Control Commission Regulation Number 2 (5 CCR 1001-4);

(7) Ensuring contracts for operation and maintenance of Boilers 17 – 19 identify the applicable requirements of this suborder and the permit;

(8) Ensuring records of fuel usage are provided to BSHED following the end of each month;

(9) Ensuring emissions from emergency generators do not exceed New Source Performance Standards specified in the permit;

(10) Ensuring fuel specifications for fuel used in diesel emergency generators are maintained on site and that fuel contains no more than 15 ppm sulfur (by volume), has a minimal cetane rating of 40 and is no more than 35% aromatic compounds (by volume);

(11) Ensuring petroleum storage tanks associated with emergency generators are inspected in accordance with the NIST Boulder Spill Prevention, Control and Countermeasures (SPCC) Plan;

(12) Ensuring land disturbing activities exceeding one acre (managed by FMD-B personnel) control particulate emissions if less than six months in duration;

(13) Ensuring land disturbing activities exceeding five acres or six months in duration (managed by FMD-B personnel), not meeting the requirements for an exception under 5 CCR 1001-5,A.II.D.1.j, are covered under an APEN submitted to CDPHE;

(14) Obtaining and maintaining training for personnel as identified in the NIST Boulder (Synthetic Minor) Construction Permit 09BO0159 and Section 6.l; and

(15) Immediately reporting any nonconformance, excursion or release of hazardous material to BSHED.

(16) Ensuring BSHED, by way of a completed Planning Checklist portion of the Environmental Checklist being submitted to the program manager, is notified of planned installation of boilers, emergency generators or other sources of air pollutants;

(17) Ensuring information required for completion and submission of APEN forms is provided to BSHED for the following equipment or activities;

(a) Construction/installation of boilers and generators;

(b) Land disturbing activities; and

(c) Portable emissions sources.

(18) Ensuring sources of air pollutants are constructed or installed in accordance with the timeline specified in the permit (within 18 months of the permit being modified and re-issued) or that BSHED is informed of delays in time to request extension of the construction period;

(19) Ensuring boilers, generators and other air pollutant sources are transferred to FMD-B after construction or installation. This includes supplying all drawings and specifications such as operations and maintenance manuals;

(20) Ensuring land disturbing activities exceeding one acre (managed by DCD-B personnel) control particulate emissions if less than six months in duration and not subject to requirements to submit an APEN to CDPHE; and

(21) Ensuring all renovation or demolition activities conducted at NIST Boulder involving asbestos-containing materials are conducted in accordance with all applicable Federal and State regulations

f. NIST Employees and Associates are responsible for:

(1) Reporting to NIST BSHED any activity that may release significant airborne pollutants into the environment, see Section 6.a(1)(b); and

(2) Reporting any out of the ordinary air emissions to the emergency number (x7777).

10. AUTHORITIES

There are no authorities specific to this suborder alone. For authorities applicable to all NIST Environmental Suborders, see section 9 of NIST O 7301.00.

11. DIRECTIVE OWNER

Chief Safety Officer

12. APPENDICES

A. Revision History

B. Regulatory Requirements for Subject Equipment

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Appendix A. Revision History

Version	Document Approval	Effective Date	Description of Change
1	01/12/2021	01/12/2021	None – initial document.
2	07/27/2022	07/27/2022	OFPM responsibilities consolidated under CFMO, grammatical corrections, added two conditionally APEN-exempt sources and operating hour limits
3	11/19/2025	11/19/2025	Updated to reflect new permit requirements

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639 **Appendix B:** Regulatory Requirements for Subject Equipment

Air Pollutant Sources Operations Limits						
Equipment	**AIRS Point**	**Fuel**	**NO_x (tpy)**	**CO (tpy)**	**Test & Maintenance Hours (per year)**	**Fuel Consumption Limits (MMscf)**
BLR-017	016	NG	3.75	6.3		150
BLR-019	017	NG	3.75	6.3		150
BLR-019	018	NG	3.75	6.3		150
EMG-025	019	Diesel	3.84		100	
EMG-92-001	020	Diesel	2.64		100	
EMG-005	021	Diesel	0.30		100	
EMG-C-019	022	Diesel	0.15		100	
EMG-026	023	Diesel	0.52		100	
EMG-03-001	024	Diesel	1.16		100	
WH-006	025	NG	0.02			0.22
WH-004	026	NG	0.02			0.22
WH-014	027	NG	0.01			0.024
WH-016	028	NG	0.01			0.024
WH-021	029	NG	0.01			0.071
01-EMG-W5-001	030	Diesel	1.38		100	
BLR-12	031	NG	0.29			2.8
25-BLR-001	032	NG	0.30			3.5
22-BLR-001	033	NG	0.65			5
21-BLR-001	034	NG	0.35			7
EMG-C-023	035	NG	0.01		100	0.144
EMG-C-022	036	NG	0.01		100	0.144
EMG-C-021	037	NG	0.01		100	0.144
EMG-020	038	NG	0.03		100	0.023
EMG-014	039	NG	0.02		100	0.034
EMG-013	040	NG	0.01		100	0.019
EMG-003	041	NG	0.01		100	0.0047
EMG-001	042	NG	0.05		100	0.042
EMG-008	043	NG	0.05		100	0.036
WH-020	044	NG	0.01			0.021
EMG-027	045	NG	0.09		100	0.063
EMG-028	046	NG	0.02		100	0.0144
01-P-EMG-001	TBD	NG	0.01			0.23
OSY-EMG	TBD	NG	0.005			0.112

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