

3 **AIR EMISSIONS MANAGEMENT**
4 **AT NIST BOULDER**

7 NIST S 7301.03

8 Document Date: 1/12/2021

9 Effective Date: 06/30/2023
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12 **1. PURPOSE**

13 The purpose of this suborder is to communicate to all responsible parties the regulatory and
14 permit requirements that NIST will comply with regarding the emission of air pollutants from the
15 NIST Boulder Site.
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18 **2. BACKGROUND**

19 Under Colorado Air Quality Control Commission regulations (5 CCR 1001), the owners or
20 operators of equipment emitting air pollutants, *i.e.*, sources, are required to obtain a permit to
21 emit air pollutants from existing sources or construct new sources. Permitting requirements are
22 based on the quantity and types of pollutants emitted. The fuel consumption or power produced
23 by a source is commonly a *de facto* means of calculating emissions and determining if an air
24 pollutant emission notification (APEN) form must be submitted to the Colorado Department of
25 Public Health and Environment (CDPHE).
26

27 Permit categories are determined based on the quantities of pollutants emitted. Sites with
28 emissions less than 25,000 tons of criteria pollutants (carbon monoxide, nitrogen oxides, sulfur
29 oxides, particulate matter and volatile organic compounds) and 10 tons of hazardous air
30 pollutants (HAPs) are required to apply for a “construction permit” to construct sources and emit
31 pollutants. Hazardous air pollutants are identified in Appendix B of the Colorado Air Quality
32 Control Commission Regulations (5 CCR 1001-5). Sites emitting quantities greater than those
33 listed above are required to apply for a permit under Title V of the Clean Air Act. Air pollutant
34 emissions from sources owned by NIST Boulder are well below the threshold at which a Title V
35 permit would be required.
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37 The NIST Boulder site operates three boilers and two emergency generators permitted by the
38 CDPHE, regulated as minor sources at a minor facility. A “Construction Permit” (permit
39 number 09BO0159) was issued on May 28, 2009 (referred to as “the permit”). The permit covers

40 three boilers in the Central Utility Plant (Building 42), one emergency generator located at the
41 northwest corner of Building 81 and one emergency generator located on the west side of the
42 Boulder Computing Facility (Building 92). All other boilers and generators not identified in this
43 suborder are classified as “APEN-Exempt” by CDPHE. The permit is a vehicle for
44 communicating regulatory requirements to NIST.

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

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51 **3. APPLICABILITY**

- 52 a. The provisions of this suborder apply to all NIST Boulder workplaces and to all NIST
53 employees and covered associates on the Boulder site who may cause the generation of
54 regulated air pollutants from an existing, new or proposed source.
55
- 56 b. The provisions of this suborder apply to existing, new and proposed air pollutant sources
57 including boilers, emergency generators, portable asphalt melting/mixing equipment and
58 other sources of volatile organic compounds.
59
- 60 c. In general, micro- or bench-scale laboratory activities at NIST Boulder are exempt from
61 federal and state regulatory requirements and the provisions of this suborder. However, air
62 emissions should be minimized from all sources. Any questions regarding air emissions shall
63 be directed to the NIST Boulder Safety, Health and Environment Division (BSHED), x5375,
64 Option 3.
65
- 66 d. The provisions of this suborder do not apply to mobile sources such as motor vehicles,
67 exhaust from construction equipment, *etc.*
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70 **4. REFERENCES**

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

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- 74 a. [Colorado Air Quality Control Commission Regulations](#), 5 CCR 1001-1 through 23;
75
- 76 b. [40 CFR Chapter I, Subchapter C, Air Programs](#); and
77
- 78 c. NIST Boulder Construction Permit 09BO0159.
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80 **5. APPLICABLE NIST DIRECTIVES**

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

- 83
- 84 a. NIST S 7101.23: [Safety Education and Training](#).
 - 85
 - 86 b. NIST S 7301.01: [Environmental Management System](#).
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89 **6. REQUIREMENTS**

90 a. General Requirements

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92 (1) New Project Review/Identification of Permitting Requirements

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

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97 i. Complete the Project Planning Environmental Checklist; and

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

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103 (b) If an individual source (laboratory, fume hood exhaust stack or piece of equipment)
104 will emit of more than 250 pounds of any hazardous air pollutant (identified in 5 CCR
105 1001-5) in a calendar year, an air pollutant emissions notification (APEN) form shall
106 be submitted to CDPHE. The director of the OU responsible for the process
107 generating the waste shall ensure that BSHED is notified.

108

109 (c) If an emission source emitting more than two tons per year of any criteria pollutant
110 will be constructed, an APEN shall be submitted to CDPHE. In an area designated as
111 a nonattainment area for a specific criteria pollutant, if an emission source emitting
112 more than one ton per year of the pollutant for which the area is classified as a
113 nonattainment area will be constructed, an APEN shall be completed and submitted to
114 CDPHE.

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116 i. The Denver Metropolitan Area, including Boulder County, is identified as a
117 nonattainment area for ozone.

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120 (2) Particulate Matter from Construction and Demolition

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- 122 (a) Land disturbing work exceeding 5 acres shall be required to use available and
123 practical methods, which are technologically feasible and economically reasonable, to
124 control emissions of particulates. See 5 CCR 1001-3,III.D.2.b.
125
- 126 (b) Construction and/or demolition activities shall be required to obtain a permit for land
127 disturbing activities exceeding 25 acres or 6 months in duration.
128
- 129 (c) An Air Pollutant Emission Notice (APEN) and Application for Construction Permit
130 for Land Development form must be completed and submitted to CDPHE. This
131 requirement is specified in the 5 CCR 1001-5, Part B.
132
- 133 i. The Urban Drainage and Flood Control District Criteria Manual provides
134 guidance covering the control of particulate emissions; see
135 [http://udfcd.org/wp-content/uploads/2014/07/EC-14-Wind-Erosion-Dust-](http://udfcd.org/wp-content/uploads/2014/07/EC-14-Wind-Erosion-Dust-Control.pdf)
136 [Control.pdf](http://udfcd.org/wp-content/uploads/2014/07/EC-14-Wind-Erosion-Dust-Control.pdf).
137

138 (3) Asbestos Containing Material

139 NIST Boulder shall comply with the requirements of 5 CCR 1001-10, when conducting
140 renovation or demolition activities which may disturb or require abatement of asbestos-
141 containing material.
142

143 (4) Ozone Depleting Substances (e.g. Chlorofluorocarbons)

144 NIST Boulder shall comply with the requirements in 5 CCR 1001-19 when using
145 regulated ozone depleting substances ([https://www.epa.gov/ozone-layer-](https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances)
146 [protection/ozone-depleting-substances](https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances)). These include:
147

- 148 (a) The intentional venting of any ozone depleting compound refrigerant is prohibited;
149
- 150 (b) Stationary units rated at 100 horsepower or greater by the manufacturer, containing
151 ozone depleting refrigerants shall be registered with CDPHE;
152
- 153 (c) Food refrigeration units containing 300 pounds or more of any ozone depleting
154 compound refrigerant shall be registered with CDPHE and registration shall be
155 updated within 60 days of November 1 of each year;
156
- 157 i. Proof of current registration shall be kept by the division owning a registered
158 unit and shall be made available to CDPHE upon request; and
159

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

163
164 (5) Open Burning

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

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168 (b) Non-commercial cooking fires (grills) are allowed.

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170 (6) Report of Excessive Emissions and Deviations

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172 (a) Releases, including air emissions that could endanger human health or the
173 environment, are to be reported to BSHED in accordance with the NIST Boulder Spill
174 Notification Policy (previously titled the NIST Boulder Accidental Hazardous
175 Material Release Reporting Procedure, or AHMRRP), Table 2.

176
177 i. Odorous emissions not complying with the terms of 5 CCR 1001-4 must be
178 reported; and

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

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183 (7) Testing Requirements

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

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

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

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194 b. Permit Requirements

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196 (1) Subject Equipment

197 The equipment items subject to the requirements of this suborder are listed in Table 6.1

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Table 6.1 Subject Air Emission Sources		
Equipment	Description	Installation
Boilers #17 and 19 AIRS Points 016 and 017	38 MMBtu/hr Superior boilers burning natural gas. Building 42. Owned by Division 194.	2011
Boiler #18 AIRS Point 018	38 MMBtu/hr Superior boiler burning natural gas. Building 42. Owned by Division 194.	2012
EMG-025 AIRS Point 019	Cummins diesel fueled generator. Maximum horsepower 2220 hp. Northwest corner of Building 81. Owned by Division 194.	2012
EMG-92-001, AIRS Point 020	Generac diesel fueled generator. Maximum horsepower 1528 hp. West side of Building 92. Owned by Division 184.	2019

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(2) Equipment Specific Requirements

Equipment specific requirements and responsible individuals are listed in Appendix B.

(3) Routine Reporting

(a) NIST Boulder is not required to submit routine reports to CDPHE. However, NIST is required to maintain emissions data as described below and in Sections 9.e and 9.f.

- i. NIST shall maintain emissions data for the permitted boilers (17, 18 and 19) as described in 9.d.6.
- ii. Emissions data shall be calculated for the following criteria pollutants:
 - (i) Total Suspended Particulate (TSP);
 - (ii) PM10;
 - (iii) PM2.5;
 - (iv) SOx;
 - (v) VOCs;
 - (vi) NOx; and
 - (vii) Carbon Monoxide.

- 229 iii. As allowed under the Construction Permit, the EPA Compilation of Air
230 Pollutant Emissions Factors (AP) 42 emissions factors relevant to the
231 equipment and the efficiency of low-NOx burners shall be used to calculate
232 actual emissions. The following emissions factors shall be used.
233
- 234 (i) Source Classification Code (SCC) 10300602 for Boilers 17 – 19; and
235
- 236 (ii) SCC 20100102 for EMG-025 and 92-EMG-001.
237
- 238 iv. On a monthly basis, emissions shall be calculated using the fuel consumption
239 data for each source during the previous month and the emissions factors
240 listed above.
241
- 242 v. Emissions shall be tracked in a spreadsheet or database as a 12-month rolling
243 total.
244
- 245 (b) Boilers and generators shall be operated per the specifications shown in Table 6.2.
246
- 247 i. Equipment subject to this Suborder shall be maintained in a manner that
248 ensures compliance with performance requirements established in the permit;
249
- 250 ii. Manufacturer’s specifications shall be used to establish operation and
251 maintenance requirements; and
252
- 253 iii. Responsibilities for maintenance are established in Section 9 below.
254

Table 6.2 Key Operating Parameters			
Equipment	Key Parameter	Critical Operating Range	Monitoring Procedure and Frequency
Boilers 17-19 AIRS Points 016-018	Opacity/Visible Emissions	≤20% opacity when operating (EPA Method 9) ≤30% opacity for more than 6 minutes during startup	Upon request by CDPHE
	Odor	Detectable odor	Upon request by CDPHE
EMG-025 AIR Point 019 and 92-EMG-001 AIRS Point 020	Opacity/Visible Emissions	≤20% opacity when operating ≤30% opacity for more than 6 minutes during startup	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

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257 c. Training

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259 (1) Training shall be provided, documented, and recorded in accordance with the
260 requirements of the NIST S 7101.23: *Safety Education and Training*.

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

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265 NIST S 7301.11: Environmental Requirements for Construction Contracts - Boulder.

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267 (3) Personnel except those identified in 6.c(2) shall complete the Accidental Hazardous
268 Material Release Training appropriate to their duties:

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- 270 (a) NIST S 7301.05: Accidental Hazardous Material Release Training for Users; or
271
272 (b) NIST S 7301.05: Accidental Hazardous Material Release Training for Non-Users
273
- 274 d. Evaluation of Compliance
275
- 276 (1) BSHED shall conduct a compliance evaluation of the regulatory requirements of this
277 program on at least an annual basis;
278
- 279 (2) Results of compliance evaluations shall be documented and records maintained as EMS
280 Records per step 6.e. below; and
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- 282 (3) Significant findings from compliance evaluations shall be addressed using the NIST EMS
283 Suborder requirements for Non-Conformances, Corrective and Preventive Action.
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- 285 e. Records
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- 287 (1) NIST shall maintain records as necessary to demonstrate compliance with the permit and
288 other general emission related regulations.
289
- 290 (2) NIST EMS Procedure 15.0 EMS Records Management in the EMS Suborder will be used
291 to ensure proper identification, storage, protection, retrieval, retention, and disposal of
292 records.
293
- 294 (a) Records needed to demonstrate compliance with permit requirements shall be
295 maintained by the NIST Facilities Maintenance Division-Boulder (FMD-B). These
296 include:
297
- 298 i. Maintenance logs of permitted boilers indicating records of:
299
- 300 (i) Startups;
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- 302 (ii) Shutdowns; and
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- 304 (iii) Malfunctions.
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- 306 ii. Operations records indicating:
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- 308 (i) Fuel consumption (standard cubic feet/day, scf/day); and
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310 (ii) Water consumption (gallons per day, gpd).

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(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:

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- a. Construction Permit – Permit issued by the Colorado Department of Public Health and Environment authorizing the emission of 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.

- 350 d. Ozone-Depleting Substances – Any chemical listed as a Class I or Class II substance in
351 Section 602 of the Clean Air Act. These are substances that deplete the ozone layer and are
352 widely used in refrigerators and air conditioning equipment.
353
- 354 e. Particulate Matter – Pollutant that includes dust, soot, and other heterogeneous small, solid
355 materials released into and transported by the air, including particulate matter 2.5µm or less
356 than in diameter (PM2.5), particulate matter 10 µm or less in diameter (PM10) and all
357 particulate matter suspended in air (total suspended particulate or TSP).
358
- 359 f. Part 70, Title V Air Permit – A federally enforceable operating permit issued under 40 CFR
360 Part 70 which regulates the emissions of air pollutants.
361
362

363 8. ACRONYMS

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

- 366
- 367 a. AIRS – Colorado Aerometric Information Retrieval System
368
- 369 b. AP 42 – EPA Compilation of Emissions Factors
370
- 371 c. APCD – Air Pollution Control Division
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- 373 d. BSHED – Boulder Safety, Health and Environment Division (153)
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- 375 e. CDPHE – Colorado Department of Public Health and Environment
376
- 377 f. CUP – Boulder Central Utilities Plant
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- 379 g. DCD-B – Design and Construction Division – Boulder (196)
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- 381 h. EMS – NIST Environmental Management System
382
- 383 i. FMD-B – Facilities Maintenance Division – Boulder (194)
384
- 385 j. HAP – Hazardous Air Pollutant
386
- 387 k. MMBTU – Million British Thermal Units
388
- 389 l. MMscf – Million standard cubic feet

- 390 m. NO_x – Nitrogen Oxides
- 391
- 392 n. ODS – Ozone Depleting Substance
- 393
- 394 o. OFPM – Office of Facilities and Property Management
- 395
- 396 p. OISM – NIST Office of Information Systems Management
- 397
- 398 q. OSHE – Office of Safety, Health and Environment
- 399
- 400 r. PM – Particulate Matter
- 401
- 402 s. PM_{2.5} – Particulate Matter less than 2.5 μm in diameter
- 403
- 404 t. PM₁₀ – Particulate Matter less than 10 μm in diameter
- 405
- 406 u. SCC – Source Compilation Code
- 407
- 408 v. scf – Standard cubic feet
- 409
- 410 w. SO_x – Sulfur Oxides
- 411
- 412 x. TPY – Tons per year
- 413
- 414 y. VOC – Volatile Organic Compounds
- 415
- 416

417 9. RESPONSIBILITIES

418 Roles and responsibilities common to all NIST Environmental Suborders can be found in Section
419 8 of NIST O 7301.00. The roles and responsibilities specific to this suborder are as follows:

- 420
- 421 a. Chief Safety Officer is responsible for overseeing NIST’s efforts in complying with the
422 requirements identified in this suborder.
- 423
- 424 b. OU Directors are responsible for:
425
 - 426 (1) Establishing implementing policies and procedures, as needed, for the requirements of
427 this suborder to be met;
 - 428 (2) Ensuring subordinate managers have the authority, resources, and training needed to
429 implement OU-established policies and procedures; and

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- (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) Ensure that 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 or other data are provided to BSHED. This may be accomplished through a work order under which FMD-B maintains the source;
- (3) Ensure that regulatory inspectors are provided access to areas under their supervision;
- (4) Ensure that corrective actions are completed in the timeframe specified by the regulatory agency;
- (5) Ensure that CDPHE or EPA inspectors are able to obtain access to areas under that manager’s supervision; and
- (6) Ensure that 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 the following:

- (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 FMD-B in regard to finding contractors to perform compliance testing when required;

- 470 (5) Supporting FMD-B by advising when emissions may exceed permitted levels;
471
- 472 (6) Maintaining a spreadsheet to calculate emissions from Boilers 17 – 19, EMG-025 and
473 92-EMG-001 based on fuel usage (or operating hours in the case of EMG-025 and 92-
474 EMG-001) provided by FMD-B and OISM (via work order through FMD-B);
475
- 476 (7) Performing an internal compliance evaluation once per calendar year at a minimum to
477 verify ongoing compliance with the permit;
478
- 479 (8) Reporting to the CDPHE as specified in Section 6.b;
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- 481 (9) Communicating the regulatory requirements to affected personnel;
482
- 483 (10) Maintaining this Suborder and keeping it up to date; and
484
- 485 (11) Maintaining general records identified in Section 6.n.
486
- 487 e. The FMD-B Chief is responsible for the following:
488
- 489 (1) Ensuring that information required for completion of APENs, Notices-of-Startup and
490 Self Certification forms is provided to BSHED;
491
- 492 (2) Ensuring that compliance testing required under the permit is performed in compliance
493 with permit requirements, within the timeframe specified in the permit following
494 installation of a new source;
495
- 496 (3) Ensuring that the AIRS point number is affixed to a source within the timeframe
497 specified in the permit following installation of the source. Tags similar to NIST
498 property identification tags are acceptable;
499
- 500 (4) Ensuring that sources listed in the permit and this suborder are operated in a manner
501 that does not exceed the permitted fuel use or emissions limits;
502
- 503 (5) Ensuring that sources listed in the permit and this suborder are operated in a manner
504 that does not exceed the following limits: 20% opacity when in operation and opacity
505 not exceeding 30% for more than 6 minutes out of an hour;
506
- 507 (6) Ensuring that sources listed in the permit and this suborder are operated in a manner
508 that does not exceed the odor control requirements of Air Quality Control Commission
509 Regulation Number 2 (5 CCR 1001-4);

- 510 (7) Ensuring that contracts for operation and maintenance of Boilers 17 – 19 identify the
511 applicable requirements of this suborder and the permit;
512
- 513 (8) Ensuring that records of fuel usage from Boilers 17 – 19 and EMG-025 are provided to
514 BSHED following the end of each month;
515
- 516 (9) Ensuring that emissions from EMG-025 do not exceed New Source Performance
517 Standards specified in the permit;
518
- 519 (10) Ensuring that fuel specifications for fuel used in EMG-025 are maintained on site and
520 that fuel contains no more than 15 ppm sulfur (by volume), has a minimal cetane rating
521 of 40 and is no more than 35% aromatic compounds (by volume);
522
- 523 (11) Ensuring that petroleum storage tanks associated with emergency generators are
524 inspected in accordance with the NIST Boulder Spill Prevention, Control and
525 Countermeasures (SPCC) Plan;
526
- 527 (12) Ensuring that land disturbing activities exceeding one acre (managed by FMD-B
528 personnel) control particulate emissions if less than six months in duration;
529
- 530 (13) Ensuring that land disturbing activities exceeding five acres or six months in duration
531 (managed by FMD-B personnel), not meeting the requirements for an exception under
532 5 CCR 1001-5,A.II.D.1.j, are covered under an APEN submitted to CDPHE;
533
- 534 (14) Obtaining and maintaining training for personnel as identified in Appendix B and
535 Section 6.I; and
536
- 537 (15) Immediately reporting any nonconformance, excursion or release of hazardous material
538 to BSHED.
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540 f. The DCD-B Chief is responsible for the following:
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- 542 (1) Ensuring that BSHED, by way of a completed Planning Checklist portion of the
543 Environmental Checklist being submitted to the BSHED Environmental Engineer, is
544 notified of planned installation of boilers, emergency generators or other sources of air
545 pollutants;
546
- 547 (2) Ensuring that information required for completion and submission of APEN forms is
548 provided to BSHED for the following equipment or activities;
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- 550 (a) Construction/installation of boilers and generators;
551
552 (b) Land disturbing activities; and
553
554 (c) Portable emissions sources.
555
556 (3) Ensuring that sources of air pollutants are constructed or installed in accordance with
557 the timeline specified in the permit (within 18 months of the permit being modified and
558 re-issued) or that BSHED is informed of delays in time to request extension of the
559 construction period;
560
561 (4) Ensuring that boilers, generators and other air pollutant sources are transferred to FMD-
562 B after construction or installation. This includes supplying all drawings and
563 specifications such as operations and maintenance manuals; and
564
565 (5) Ensuring that land disturbing activities exceeding one acre (managed by DCD-B
566 personnel) control particulate emissions if less than six months in duration and not
567 subject to requirements to submit an APEN to CDPHE.
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569 g. The OFPM Safety Group Leader is responsible for ensuring that all renovation or demolition
570 activities conducted at NIST Boulder involving asbestos-containing materials are conducted
571 in accordance with all applicable Federal and State regulations.
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573 h. NIST Employees and Associates are responsible for the following:
574
575 (1) Reporting to NIST BSHED any activity that may release significant airborne pollutants
576 into the environment, see Section 6.a(1)(b); and
577
578 (2) Reporting any out of the ordinary air emissions to the emergency number (x7777).
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581 **10. AUTHORITIES**

582 There are no authorities specific to this suborder alone. For authorities applicable to all NIST
583 Environmental Suborders, see section 9 of NIST O 7301.00.
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585 **11. DIRECTIVE OWNER**

586 Chief Safety Officer
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590	12. APPENDICES
591	A. Revision History
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593	B. Regulatory Requirements for Subject Equipment
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Appendix A. Revision History

Revision	Date	Responsible Person	Description of Change
None	01/12/2021.		None – initial document. NOTE: Effective date was originally TBD due to the COVID-19 pandemic. It was updated on 4/17/23.

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Appendix B: Regulatory Requirements for Subject Equipment

Source(s)	Boilers 17, 18 and 19, AIRS points (16, 18 and 17) Building 42
Responsible Individual	FMD-B Chief
Standards and Limits	<ol style="list-style-type: none"> 1. No visible emissions other than water vapor 2. NO_x limit of 50 lb/MMscf and 6.5 TPY from any single boiler 3. CO limit of 84 lb/MMscf and 10.9 TPY from any single boiler 4. Opacity shall not exceed 20% or 30% for more than six minutes out of any hour of operation 5. Follow manufacturer's operations and maintenance specifications 6. Annual fuel consumption shall not exceed 257.4 MMscf in any single boiler 7. The of AP42 emissions factors to calculate emissions is allowable.
Testing Requirements	No scheduled testing is required unless requested by CDPHE
Monitoring Requirements	No monitoring is required unless requested by CDPHE
Recordkeeping Requirements	<ol style="list-style-type: none"> 1. Maintain operation and maintenance manuals onsite 2. Maintain log of startups, shutdowns and malfunctions of boilers and control equipment 3. Maintain log of visible emission observations (other than water vapor) 4. Maintain records of all notifications to CDPHE 5. Maintain results of any testing or monitoring requested by CDPHE 6. Maintain operator training/certification records 7. Record the quantity of fuel used each month 8. Ensure that AIRS point number is marked on each unit.
Reporting Requirements	<ol style="list-style-type: none"> 1. Report incidences of visible emissions to BSHED 2. Following the end of each month submit a record of fuel consumption to BSHED

602
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604

Source	EMG-025, AIRS point 019 Building 81 exterior of northwest corner
Responsible Individual	FMD-B Chief
Standards and Limits	<ol style="list-style-type: none"> 1. No visible emissions other than water vapor 2. Particulate emissions <0.15 g/hp-hr 3. VOC emissions <4.8 g/hp-hr 4. NOx emissions <4.8 g/hp-hr and 4.1 TPY 5. Carbon monoxide emissions < 2.6 g/hp-hr and 1.0 TPY 6. Maintain operating practices per manufacturer recommendations 7. Prepare and implement a preventative maintenance plan per the manufacturer's recommendations 8. Fuel with <15 ppm sulfur 9. Fuel with cetane index of at least 40 10. Fuel with maximum aromatic compounds content of 30% (v/v) 11. Retain specifications of delivered fuel 12. Ensure that particulate filter is equipped with a back pressure monitor 13. Ensure that generator is equipped with a non-resettable hour meter 14. Opacity must be less than 20% and not exceed 30% for 6 minutes during startup 15. The use of AP42 emissions factors to calculate emissions is allowable.
Testing Requirements	NA
Monitoring Requirements	<ol style="list-style-type: none"> 1. Operate air pollution control equipment per manufacturer's recommendations 2. Perform maintenance activities within the time frames established in the preventive maintenance plan 3. Ensure that operating hours do not exceed permit limits 4. Log startups, shutdowns and malfunctions
Recordkeeping Requirements	<ol style="list-style-type: none"> 1. Maintain log of visible emission observations 2. Maintain preventative maintenance (PM) records 3. Maintain records of any visible emissions and NIST corrective actions 4. Maintain records of types and amounts of materials processed 5. Maintain records of annual fuel (natural gas) usage 6. Maintain operator training records 7. Ensure AIRS point number is marked on the unit
Reporting Requirements	<ol style="list-style-type: none"> 1. Submit preventative maintenance plans and records upon request

605

Source	92-EMG-001, AIRS Point 020 Building 92 exterior west side
Responsible Individual	Chief, OISM Infrastructure Services Division (184)
Standards and Limits	<ol style="list-style-type: none"> 1. No visible emissions other than water vapor 2. Particulate emissions <0.15 g/hp-hr 3. VOC emissions <4.8 g/hp-hr 4. NOx emissions <4.8 g/hp-hr and 9.2 TPY 5. Carbon monoxide emissions < 2.6 g/hp-hr and 2.1 TPY 6. Maintain operating practices per manufacturer recommendations 7. Prepare and implement a preventative maintenance plan per the manufacturer's recommendations 8. Fuel with <15 ppm sulfur 9. Fuel with cetane index of at least 40 10. Fuel with maximum aromatic compounds content of 30% (v/v) 11. Retain specifications of delivered fuel 12. Ensure that particulate filter is equipped with a back pressure monitor 13. Ensure that generator is equipped with a non-resettable hour meter 14. Opacity must be less than 20% and not exceed 30% for 6 minutes during startup 15. The use of AP42 emissions factors to calculate emissions is allowable.
Testing Requirements	NA
Monitoring Requirements	<ol style="list-style-type: none"> 1. Operate air pollution control equipment per manufacturer's recommendations 2. Perform maintenance activities within the time frames established in the preventive maintenance plan 3. Ensure that operating hours do not exceed permit limits 4. Log startups, shutdowns and malfunctions
Recordkeeping Requirements	<ol style="list-style-type: none"> 1. Maintain log of visible emission observations 2. Maintain preventative maintenance (PM) records 3. Maintain records of any visible emissions and NIST corrective actions 4. Maintain records of types and amounts of materials processed 5. Maintain records of annual fuel (natural gas) usage 6. Maintain operator training records 7. Ensure AIRS point number is marked on the unit
Reporting Requirements	<ol style="list-style-type: none"> 1. Submit preventative maintenance plans and records upon request