

SECTION 8 - AIR

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Synopsis

NOTE: This section is promulgated to ensure National Weather Service (NWS) facilities and work sites comply with the State Implementation Plans with regard to the discharge of air pollutants by the operation of the facility or work site.

The section applies to all NWS facilities and work sites that release pollutants to the air through stationary or mobile sources.

Initial Implementation Requirements:

- Appoint an Air Program Coordinator
- Compare Site/Facility Operations with the Requirements of this Section
 - Determine if a State Air Emission Permit is required for the diesel emergency generator (8.5.1a)
 - If so, determine if the permit has been obtained and if it is current
 - Ensure requirements of the permit are enforced at the facility/work site
 - Ensure CFC equipment repair is performed by Environmental Protection Agency (EPA) certified technicians (8.6.1a)
 - Perform radon testing if the facility or work site is located in a Zone 1 area on the EPA map of radon zones (8.7.1)
 - If radon is detected at a level exceeding 4 pCi/L, perform radon reduction sealing (8.7.2)
 - Determine if the facility stores or uses any Hazardous Air Pollutants including friable asbestos and if National Emission Standards Hazardous Air Pollutants (NESHAP) requirements are enforced at the facility.

Recurring and Annual Task Requirements:

- Ensure Generator is Properly Maintained
- If Radon Reduction Program is Enacted, Periodically Test to Determine Effectiveness

Air Checklist	YES	NO	N/A
1. Has an Air Program Coordinator been appointed? (8.5.1)	—	—	—
2. Does the facility or work site have an emergency diesel-powered generator? (8.5.1)	—	—	—
3. Does the State require the generator to have a Clean Air Permit? (8.5.1a)	—	—	—
4. If so, has the facility or work site obtained the necessary permit? (8.5.1a)	—	—	—
• Is it accessible?	—	—	—
• Has the generator been maintained as required by the permit?	—	—	—
5. Do NWS employees repair CFC-containing equipment?	—	—	—
• If yes, are these employees certified by the EPA? (8.6.1a)	—	—	—
6. Is the facility or work site located in a Zone 1 area on the EPA map of radon zones? (8.7.1)	—	—	—
• If yes, has a radon test been performed? (8.7.1)	—	—	—
7. Does the facility have Hazardous Air Pollutants (HAP) including friable asbestos?			
• If yes, has facility determined and enforced applicable National Emissions Standards for Hazardous Air Pollutants (NESHAP) requirements? (8.8)	—	—	—

SECTION 8 - AIR

8.1 Purpose and Scope

This section has been promulgated to ensure that in performing their mission, NWS facilities and work sites do not degrade the air in the area surrounding the site and, as a result, the section applies to all NWS facilities and work sites.

8.2 Definitions

Hazardous Air Pollutants	List of chemicals that EPA has identified as airborne containments that are known to be hazardous to human health. There are currently 188 listed chemicals. (See Appendix B of this manual).
Operating Unit	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).
Picocurie	A unit of measure used to describe certain types of nuclear radiation. A curie is the amount of any radionuclide that undergoes exactly 3.7×10^{10} radioactive decays per second. A picocurie is one-trillionth (10^{12}) of a curie, or 0.037 radioactive decays per second.
Picocurie per liter (pCi/L)	A common unit of measurement of the concentration of radioactivity in a fluid (liquid or gas). A picocurie per liter corresponds to 0.037 radioactive disintegrations per second in every liter of fluid.
Station Manager	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

8.3 Acronyms Employed in This Section

ACM	Asbestos Containing Materials
ARI	Air Conditioning and Refrigeration Institute
CFCs	Chlorofluorohydrocarbons
EPA	Environmental Protection Agency
HAP	Hazardous Air Pollutants
SECO	NOAA Safety and Environmental Compliance Office
NWS	National Weather Service
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NWSH	National Weather Service Headquarters
pCi/L	Picocuries per liter
PTE	Potential to Emit

SIP	State Implementation Plan
UL	Underwriters Laboratories
VOC	Volatile Organic Compounds

8.4 Regulatory Requirements

8.4.1 Federal/State – Clean Air Act Amendment of 1970

The Clean Air Act, Section 112 identified the list of hazardous air pollutants. One of the first was asbestos in 1971 and since then 188 chemicals have been identified.

8.4.2 Federal/State - Clean Air Act of 1990

The Clean Air Act of 1990 created a program in which the EPA established Federal standards for air quality but allows the States to implement them under an EPA-approved SIP. If a SIP is determined to be unacceptable to the EPA, the EPA can enforce the air program in that State.

8.5 The Clean Air Program

While the Federal clean air program is a very complex regulatory scheme, it relies on several key areas to ensure air quality. These areas include:

- a. Permits to control sources of air pollution
- b. Establishment of air standards along with determination of how well a geographical area meets those standards.

8.5.1 Permits

Anything that releases pollutants into the air can be considered a “source.” Some typical National Weather Service sources of air pollutants include the exhaust of the diesel emergency generator; exhausts of cars, vans, and trucks; gasoline-powered machinery or tools; and the facility heating and ventilation equipment.

The important concept is the ability of a facility to have the potential to emit (PTE) 100 tons of emissions or 10 tons of a single HAP or 25 tons of total HAPs.

The EPA/States look at worst-case operations to determine a potential to emit HAPs. They would consider any facility and its source to operate 24 hours a day, 7 days per week for, 52 weeks a year. For instance, fuel usage of a WFO diesel generator is 6 gallons per hour.

$7.22 \text{ lbs per gallon of diesel} \times 6 \text{ gallons} = 43.32 \text{ pounds/hour} \times 24 \text{ hours} = 1039.68 \text{ pounds per day} \times 7 \text{ days} = 7,277.76 \text{ pounds per week} \times 52 \text{ weeks} = 378,443.52 \text{ pounds or } 189.22 \text{ tons of VOC per year.}$

It does not matter that the generator is not used this much, just that it has the potential to emit over 100 tons and must be reported as a possible source. A local or state government having jurisdiction over the facility will make determination if the subject generator will need a permit. Sources that remain in one location (e.g. the emergency generator) are deemed stationary sources while those that move around are called mobile sources (i.e. cars and vans).

The EPA has delegated each state the authority to operate this program and in some cases local cities that have potential to be declared non-attainment have authority from the state to operate this program.

If a community is not in attainment, they may have more stringent requirements than that under the Clean Air Act.

The Environmental or Environmental/Safety Focal Point or Regional/Operating Unit Environmental Coordinator for NWS facility with generators should check with the State to find out what their reporting requirements are related to generators and if the State has delegated this activity to the city they are located.

To prevent air quality degradation, each State, under its State Implementation Plan, will grant a permit to the larger sources of air pollutants. The permit will typically include detailed information about what pollutants can be released, how much and even when. It may also include a series of requirements for the permit holder that must be achieved over a pre-set time, which are designed to eventually reduce or eliminate the emissions from the source. The permit can also include requirements for periodic monitoring of the emissions from the source to ensure the limitations set by the permit are not exceeded.

NWS Application

NWS facilities and work sites that employ a back-up emergency diesel-fueled generator may be required to obtain a State or local government-granted air emission permit.

To ensure compliance, the Station Manager will designate the NWS facility or work site Environmental Focal Point as the Air Program Coordinator. This individual must contact the NWS Regional/Operating Unit Environmental Coordinator and/or the NWSH Environmental and Safety staff to determine:

- Is a State permit required for the emergency generator?
- If so, has a State permit been obtained and is it current?
- If so, where is it?
- What does it require?

Based on the results of this investigation, the air compliance program for the facility or work site must be reviewed and modified if necessary to comply with the permit conditions.

8.5.2 Attainment of Air Standards

As part of its role in the National Clean Air Program, the EPA has set national standards for air quality and then compared the actual air quality in various geographical areas against these standards. Note that because the air travels across State lines, some of the geographical areas encompass more than one State. Those areas that did not meet the Federal air standards are deemed “non-attainment areas” and were divided into five classes ranging from “marginal” (easy to clean-up) to extreme (very difficult to clean-up).

The EPA then established a timetable for each area to achieve compliance and usually included a series of intermediate goals that must be achieved to demonstrate progress.

To meet these standards, some State and local governments have had to search for new ways to reduce air contaminants. Some have banned or severely limited the use of common products, encouraged the reformulation of paints and inks and/or required a preset percentage of new automobiles sold in the State be powered electrically.

In some areas, wintertime air pollution from wood smoke from wood stoves has become so bad that local governments have had to curtail the use of wood stoves and fireplaces under certain weather and pollution conditions.

Efforts to clean-up the particulates (dust and soot) and other hazardous air pollutants produced by the burning of wood has led to the development of newer designs that emit lower levels of pollutants.

NWS Application

NWS facilities and work sites will be regulated by their State and local rules. This will include a variety of efforts including using alternative materials and equipment to modification of fueling techniques to encouraging car pooling by employees to assist the area in meeting the national air standards. Remote work sites heated by the burning of wood may require newer models of wood stoves be installed. Additionally, in accordance with Executive Order 13149, the NWS will consider the acquisition of fuel efficient and/or alternative fueled vehicles.

8.5.3 Ozone-Depleting Substances

After May 1993, consumer products containing CFCs were required to have a label that reads:

WARNING: Contains or manufactured with (name of chemical), a substance that harms public health and the environment by destroying ozone in the upper atmosphere.

Products that contain chemicals that are listed in the Clean Air Act of 1990 as less destructive (or Class II chemicals) must have this label affixed after 2015.

Executive Order 13148 requires the prohibition from the procurement and use by Federal Agencies of products containing a Class I ozone-depleting substance by December 31, 2010.

Class I ozone-depleting substances include halons, chlorofluorocarbons, carbon tetrachloride, and methylchloroform as identified by the EPA.

8.5.4 Use/Repair of CFC Equipment

Under the Clean Air Act, anyone who maintains, services or repairs refrigerators, freezers, air conditioners, heat pumps, dehumidifiers, water coolers and other appliances that use refrigerant must be certified by the EPA. Depending on the equipment serviced, the EPA has created four categories Type I, Type II, Type III and Universal - Technician. Until certified, a worker is deemed an apprentice and as such, is only allowed to work on this equipment “when closely and continually supervised by a certified technician.”

NWS Application

No NWS employee should attempt to repair or service any equipment containing a CFC unless certified by the EPA for this work. Contractors employed by the NWS must be able to provide documentation or certification that their technicians are EPA-certified.

8.5.5 Equipment containing CFCs and other ozone-depleting chemicals

Prior to the enactment of the Clean Air Act of 1990, a number of products were sold that contained CFCs and other ozone-depleting chemicals. These items range from the spray circuit board cleaner that uses freon or a novelty item like a glass bird that is filled with carbon tetrachloride that “sips” from a glass of water, to an old air conditioner. As they are identified, these items must be either returned for recycling or sent for proper disposal.

8.5.6 CFC Recordkeeping Requirements

- a. Leaking equipment.

NWS facilities that have appliances, including comfort cooling, containing more than 50 pounds of refrigerant must have all leaks repaired if the equipment leak rate exceeds 15% in a 12 month period. Repairs must bring the annual leak rate to below 15%.

Nearly every air conditioning system meets the 50 pound threshold. Due to this change

each facility should establish a threshold of 7.5 pounds recharge of a system. If a system requires more charge personnel responsible for equipment should determine if there is a leak in the system. Repair/maintenance of the system should be scheduled as soon as possible. The repairs should be coordinated with standard maintenance contacts and procedures. Facilities must repair leaks within 30 days of discovery or within 30 days of when the leak should have been discovered. Exemptions to the above 30 day limit for repairs apply if, within 30 days of the discovery of the leak, the facility develops a dated one-year retrofit or replacement plan for the leaking appliance. This plan must be kept at the site where an appliance is located, must be dated and implemented within one year. Regional Facility Manager should be contacted to assist with the plan.

b. CFC Disposal.

Refrigerant must be evacuated or removed prior to appliance disposal. The refrigerant must be transferred to a certified recovery or recycling machine. Equipment that is typically dismantled on-site before disposal (such as central air conditioners, chillers, and industrial process refrigeration) must have its refrigerant recovered in accordance with the same requirements that apply for servicing. That is, the work must be done by certified technicians, using certified recycling/recovery equipment, and it must achieve specified evacuation levels). Minimum evacuation levels must be attained prior to disposal of the appliance (see Table 1). Certified technicians must verify that the applicable level of evacuation has been reached in the appliance before it is opened.

c. Reporting and recordkeeping.

Service records for all equipment or appliances containing 50 or more pounds of refrigerant must document the date, type of service, and the quantity of refrigerant purchased and added, regardless of whether service is performed by a vendor or by NWS certified technicians. Although this record keeping requirement only applies to appliances with 50 or more pounds of refrigerant, it is recommended that the records are kept for appliances of all refrigerant capacities.

If the facility has equipment or appliances that are serviced by NWS certified technicians, Regional Facility Manager must certify that certified recycling or recovery equipment was acquired and that facility is complying with EPA regulations. The form the EPA requires is EPA Refrigerant Recovery or Recycling Device Acquisition Certification Form that must be completed and submitted to the EPA. A copy should be kept on file. Once the form is submitted, a new form is not needed each time recycling/recovery equipment is added to the facility inventory. If recycling or recovery equipment manufactured before November 15, 1993 is still in use, records should be kept at the appropriate location to ensure that it is capable of meeting minimum evacuation levels.

Maintain copies of technician certification cards at your facility.

Obtain from the service vendor:

- 1) A copy of the EPA Refrigerant Recovery or Recycling Device Acquisition Certification Form filed for their recovery/recycling equipment;

- 2) A copy of recycling or recovery equipment design certification (equipment must be tested and certified by the Air Conditioning and Refrigeration Institute (ARI) or Underwriters Laboratories (UL); and
- 3) Written assurances that only EPA-certified equipment and technicians will be used for work at your facility.
- 4) A copy of the certification statement that reclaimer sent certification to the EPA.

NOTE: If the refrigerant is sent off site for reclamation, reclaimers are required to certify to the EPA that they meet certain standards for refrigerant purity, leakage, waste disposal, etc.

- 5) Maintain records of refrigerant quantity sent offsite for reclamation, and the name and address of the reclaimer.
 - 6) All records must be retained for a minimum of three years.
- d. Release Reporting Requirements.

The intentional or unintentional release of ozone depleting chemical refrigerants to the atmosphere is prohibited and is subject to immediate release reporting requirements under state and Federal law. This prohibition applies during maintenance, repair, service, disposal or other activities.

CAUTION

If there is a release of ozone depleting refrigerant, IMMEDIATELY NOTIFY THE NWSH ENVIRONMENTAL AND SAFETY STAFF (301-427-9763). Intentional or knowing venting of ozone depleting chemical substitutes into the atmosphere from refrigeration appliances is prohibited (Section 608 of Clean Air Act: http://www3.epa.gov/ozone/title6/downloads/Section_608_FactSheet2010.pdf).

Diminished amounts of refrigerants released during good faith attempts to recover, recycle, or safely dispose of refrigerants during servicing, maintenance, repair, and disposal activities conducted in compliance with Federal laws and regulations are not subject to release reporting.

8.6 Radon

Radon is a radioactive gas that is produced from the natural decay of uranium that is found in nearly all soils. It has been shown to cause lung cancer. It typically moves up through the soil and releases into the air where it is normally dissipated or diluted to harmless levels.

When a building is erected, cracks and other holes in the foundation allow the radon gas to enter the structure. The structure then traps the gas allowing the concentration to build. While radon is more of a homeowner problem, it has created difficulties for at least one NWS facility and hence has been included in this section.

8.6.1 Radon Zones

To help identify areas with high radon potential, the EPA has developed a map of radon zones. The map can be used to identify areas that have a higher probability of radon occurring. The map is available online at <http://www.epa.gov/iaq/radon/zonemap.html>.

Using this map, the Environmental Focal Point or Air Program Coordinator can estimate the potential need to perform radon sampling at a NWS facility or work site. Facilities in a Zone 1 Area [average indoor radon screening level greater than 4 pCi/L (picocuries per liter of air sampled)] or facilities in areas of the world not included on the map should perform a radon test to determine if a problem exists at the facility.

The EPA recommends remedial action is scheduled according to the following priority scheme:

Radon Levels (pCi/L)	Generator
0 to 4	No action required
4 to 20	Mitigation within 5 yr.
20 to 200	Mitigation within 6 mo.
>200	Mitigation within 3 wk.

The purpose of the sampling is to determine health risk (lung cancer) from employees breathing radon gas. The appropriate sampling protocol should be the collection of one sample per 2000 square feet of occupied space. The location in the office to place dosimeters will be at height of 6 foot or the breathing zone for employees. All samples should be collected with short term (less than a year) dosimeters. The objective is to find out what the exposure of radon gas to employees while at work. Grab samples or immediate sampling will only indicate what is happening at the moment in time and will probably not represent an accurate exposure level over a long period.

8.6.2 Remedial Action

Should a radon level in excess of 4pCi/L be detected in a NWS facility or work sites, a variety of methods can be used to reduce the radon level. Just sealing cracks in floors and walls may help. In other cases, a system called “sub slab depression” that uses pipes and fans may be required. The EPA publication, “Consumer’s Guide to Radon Reduction,” available from the State Radon Office or online at <http://www.epa.gov/radon/pubs/consguid.html> offers several suggestions and techniques. Although aimed at the homeowner, the information provided can be used by NWS facilities and work sites. Once remedial work is complete, retest on an annual basis to ensure the effectiveness of the effort.

8.7 NESHAP Regulations

NESHAP regulations were initially put into place to cover the removal and use of certain airborne contaminants such as radiation and asbestos. Although the rules have continued to cover other types of HAPs this section will mainly focus on asbestos.

Many of work areas and facilities were built before 1980 and are likely to contain asbestos containing materials (ACM). NESHAP rules cover the management and in particular the

removal and demolition of ACM from equipment and facilities. The regulations protect the public by minimizing the release of asbestos fibers during the activities involving the processing, handling and disposal of ACM. NESHAP rules specify the work practices to be followed during the demolitions and renovations of all structures, installations and building. The primary method that the EPA, states and cities regulate this activity is by requiring a permit before the start of this activity.

Demolition or removal activities must be identified in most cases 20 days before work is to commence. Every state and sometimes cities have different requirements that must be identified in the permit, so specific review of local ordinances or regulations prior to the removal of ACM must be made.

If NWS employees must service equipment at the facility where asbestos removal or demolition will be accomplished, NWSH Environmental and Safety staff must be contacted to ensure all applicable requirements are met.

8.8 Responsibilities

8.8.1 NWS Headquarters

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section.
- b. NWSH will coordinate with NOAA SECO, as necessary, regarding compliance issues related to this section.

8.8.2 Regional or Operating Unit Environmental/Safety Coordinator

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit facilities.
- b. Will ensure that applicable procedures are implemented at regional headquarters or operating unit facilities.

8.8.3 Station Manager

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure that sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.
- c. May consider testing NWS field offices if located in areas denoted by the EPA Radon Map as having an average indoor radon screening level greater than 4 pCi/L.
- d. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

8.8.4 Environmental or Environmental/Safety Focal Point or Designated Person

Will ensure that any tasks delegated to them by the Station Manager are implemented in

accordance with the requirements of this section.

8.8.5 Employees

- a. Individual employees affected by this section are required to read, understand, and comply with the requirements of this section.
- b. Report all violations of the requirements of this section to their supervisor or Environmental Focal Point.

8.9 References

Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

8.9.1 U.S. Environmental Protection Agency

Map of Radon Zones:	http://www.epa.gov/radon/zonemap.html
Consumer's Guide to Radon Reduction:	http://www.epa.gov/radon/pubs/consguid.html