

**ACTION:** Final rule.

**SUMMARY:** This action amends the National Emission Standards for Hazardous Air Pollutants (NESHAPs), which regulate the air emissions of radionuclides other than radon-222 and radon-220 from facilities owned or operated by the Department of Energy (DOE) (Subpart H) and from Federal Facilities other than Nuclear Regulatory Commission (NRC) licensees and not covered by Subpart H (Subpart I). These regulations require that emissions of radionuclides to the ambient air shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 millirem per year (mrem/yr). Also, for non-DOE federal facilities, emissions of iodine shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 3 mrem/yr. Regulated facilities demonstrate compliance with the standard by sampling and monitoring radionuclide emissions from all applicable point sources. Currently, radionuclide emissions from point sources are measured in accordance with the American National Standards Institutes's (ANSI) "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities," ANSI N13.1-1969. In 1999, the American National Standards Institute substantively revised ANSI N13.1-1969 and renamed it "Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities," ANSI/HPS N13.1-1999. Today's action amends 40 CFR Part 61, subparts H and I to require the use of ANSI/HPS N13.1-1999 for all applicable newly constructed or modified facilities. Today's action also imposes additional inspection requirements on existing facilities subject to subparts H and I of 40 CFR Part 61.

**DATES:** This rule will be effective October 9, 2002. The incorporation by reference of certain publications listed in this rule is approved by the Director of the Federal Register as of October 9, 2002.

**FOR FURTHER INFORMATION CONTACT:** Ms. Robin Anderson, Center for Waste Management, Radiation Protection Division, Office of Radiation and Indoor Air, U.S. Environmental Protection Agency, Mailstop 6608J, 1200 Pennsylvania Avenue, NW., Washington, DC 20460, by e-mail: [anderson.robin@epa.gov](mailto:anderson.robin@epa.gov) or by phone (202) 564-9385.

**SUPPLEMENTARY INFORMATION:**

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 61**

[FRL-7271-3]

RIN 2060-A190

**National Emission Standards for Hazardous Air Pollutants; National Emission Standards for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities; National Emission Standards for Radionuclide Emissions from Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H; Final Amendment**

**AGENCY:** Environmental Protection Agency (EPA).

## Docket

All documents relevant to this rulemaking have been placed in Docket A-94-60 in EPA's Air Docket. The Air Docket is located at 1200 Pennsylvania Avenue, NW., 20460, in room B-102, Mail Code 6102T and is open between the hours of 8:30 am and 4:30 pm, Monday through Friday. A reasonable fee may be charged for copying. EPA is also publishing a response to comments document (entitled "Response to Comments: Amendment to Radionuclide NESHAPs—40 CFR Part 61, Subpart H and Subpart I" (Docket No. A-94-60, Item V-A-2)), which responds in detail to all the public comments that were received on the proposed rule. Copies of the response to comments document may be obtained from Eleanor Thornton-Jones at the U.S. Environmental Protection Agency, Center for Waste Management, Radiation Protection Division, Office of Radiation and Indoor Air, 1200 Pennsylvania Avenue, NW., Washington, DC 20460-0001; Mail code: 6608J or by e-mail: [thornton.eleanord@epa.gov](mailto:thornton.eleanord@epa.gov) or by phone (202) 564-9773.

## Incorporation by Reference

All subject facilities must demonstrate compliance with subparts H and I in accordance with the procedures set forth in ANSI/HPS N13.1-1999, "Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities" (Docket No. A-94-60, Item II-D-3). The Health Physics Society (HPS) approved ANSI/HPS N13.1-1999 on January 12, 1999, and published it as a supplement to the May 1999 Health Physics Society Journal. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. You may obtain a copy of the ANSI/HPS N13.1-1999 standard from the American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, New York 10036. You may inspect a copy at EPA's Air Docket (address above), or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.

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## I. Today's Action

### A. Affected Facilities

This rule applies to operations at any facility owned or operated by DOE that emits any radionuclide other than radon-222 and radon-220 into the air (radionuclide NESHAPs—40 CFR part 61, subpart H) and to non-DOE federal facilities (radionuclide NESHAPs—40 CFR part 61, subpart I).

### B. Current Requirements

The NESHAPs regulations at 40 CFR part 61, subparts H and I require emissions sampling, monitoring and calculations to identify compliance with the standard. The standard for both subparts H and I requires that emissions of radionuclides to the ambient air shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr. Also, for non-DOE federal facilities, emissions of iodine shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 3 mrem/yr. Under radionuclide NESHAPs, major sources are those that have the potential to discharge radionuclides into the air in quantities that could cause an effective dose equivalent in excess of 0.1 mrem/yr.

Currently, for major sources, subparts H and I require measurement of radionuclide emissions to air in accordance with the guidance presented in the ANSI "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities," ANSI N13.1-1969 (Docket No. A-94-60, Item II-D-1). The American National Standards Institute substantively revised ANSI N13.1-1969 in 1999, and renamed it "Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks

and Ducts of Nuclear Facilities," ANSI/HPS N13.1-1999 (Docket No. A-94-60, Item II-D-3).

### C. Description of Today's Action

With today's action, EPA amends 40 CFR part 61, subparts H and I to require the use of ANSI/HPS N13.1-1999 in place of the older ANSI N13.1-1969 for all applicable newly constructed or modified facilities. The principal feature of ANSI/HPS N13.1-1999 is that it is a performance-based standard, rather than a prescriptive standard, as was ANSI N13.1-1969. As a performance-based standard, ANSI/HPS N13.1-1999 provides guidance for the design and use of systems for sampling the releases of airborne radioactive substances from the ducts and stacks of nuclear facilities. The ANSI/HPS N13.1-1999 standard includes the following features:

- Criteria for determining suitability of a sampling location based on the uniformity of the velocity and contaminant concentration profiles,
- A criterion for an acceptable level of flow swirl,
- A maximum relative level of contaminant at any location across the cross section of the stack or duct,
- Performance criteria for an acceptable probe,
- A numerical criterion on the minimum fraction of aerosol particles that penetrate the sampling system from the stack gas to the collector or analyzer,
- A statement that the number of bends in the sample transport line must be minimized,
- Periodic checks and maintenance criteria, and
- A quality assurance program that covers personnel, equipment, and data handling.

In developing the final rule, EPA considered all information that was before the Agency. EPA gave substantial consideration to all the public comments (both written and oral) submitted at a public hearing and during the comment period on the proposed rule. EPA also sought and considered additional information related to several issues raised by commenters. EPA has based its regulatory decisions on the information obtained and comments received during the rulemaking process. Thus, today's final action does three things:

- (1) The final amendment to subpart H and subpart I requires the use of the ANSI/HPS N13.1-1999 standard for new sources as defined in 40 CFR part 61, subpart A. Facilities will be required to use ANSI/HPS N13.1-1999 for the reporting period beginning January 1, 2003.

(2) The final rule also provides the option of using ANSI/HPS N13.1-1999 for existing sources. EPA believes that some existing sources not undergoing modification could benefit from upgrades that would be necessary to meet the ANSI/HPS N13.1-1999 standard. In those instances, EPA encourages all applicable Federal facilities to make such necessary upgrades to meet ANSI/HPS N13.1-1999.

(3) The final rule also includes more stringent inspection requirements for facilities that will remain subject to ANSI N13.1-1969. EPA is amending 40 CFR part 61, Appendix B, Method 114—Test Methods for Measuring Radionuclide Emissions from Stationary Sources to impose these more stringent inspection requirements. (Both subparts H and I require applicable sources to implement the Quality Assurance Methods in Appendix B, Method 114 when conducting a quality assurance assessment.) These requirements will ensure that existing sampling systems are regularly inspected and continue to function as designed. The new inspection requirements are based on similar guidelines found in ANSI/HPS N13.1-1999. Incorporating updated requirements into Appendix B, Method 114 ensures that key components of the sampling systems are inspected at least on an annual basis to prevent degradation of sampling systems.

Significant comments on the proposed rule are discussed in the preamble section entitled "Discussion of Comments."

#### *D. Expected Cost Impacts Associated With Today's Action*

The Agency estimated the cost impacts resulting from the amendments to 40 CFR part 61 subparts H and I being promulgated today. These costs derive from (1) Any incremental costs to new facilities from the adoption of the newer ANSI/HPS N13.1-1999 standard instead of the older ANSI N13.1-1969 standard; (2) costs incurred by existing facilities undergoing modification from the upgrading of their sampling systems; and (3) the costs incurred by facilities to meet additional inspection requirements.

In general, the cost for new facilities installing a sampling system compliant with the newer ANSI/HPS N13.1-1999 standard is the same as the cost of installing a system compliant with the older ANSI N13.1-1969. Therefore, although DOE estimates that, over the next 5 years, approximately 50 new sources will be constructed, these facilities will face no additional costs associated with the adoption of ANSI/

HPS N13.1-1999 as required in today's amendments (Docket No. A-94-60, Item IV-G-4).

For those facilities undergoing modification, there will be a cost associated with upgrading their sampling systems. As discussed further in Section II.B. of this preamble, this cost is estimated at \$100,000 per source. The Department of Defense (DoD) stated that nearly all of their existing sources and probably future sources will result in an effective dose equivalent below 1% of the standards and therefore are not subject to either ANSI standard (Docket No. A-94-60, Item IV-D-2). DOE estimates that approximately 10 existing sources over the next five years will be upgraded to meet the ANSI/HPS N13.1-1999 standard (Docket No. A-94-60, Item IV-D-40). Assuming that these 10 sources are modified evenly across the 5 years, then the annual cost to install a sampling system compliant with the newer ANSI/HPS N13.1-1999 standard will be  $2 \times \$100,000$  totaling \$200,000 per year.

Appendix B, Method 114—Test Methods for Measuring Radionuclide Emissions from Stationary Sources has additional inspection requirements taken directly from ANSI/HPS N13.1-1999. The DOE and DoD have estimated that a total of approximately 510 sources will be affected by these new inspection requirements at some point during the next 5 years (500 existing sources plus the 10 sources assumed to be built) (Docket No. A-94-60, Items IV-D-39 and IV-D-40). The State of Washington estimated that there would be a one time cost of approximately \$5,000 per source to implement the new inspection requirement and an annual operational cost of \$7,000 (Docket No. A-94-60, Item IV-D-41). Therefore, inspection costs are estimated to be \$2.55 million as an initial investment with an additional annual operating and maintenance cost of \$3.57 million.

## **II. Background**

### *A. Regulatory History*

On October 31, 1989, EPA promulgated NESHAPs under Section 112 of the Clean Air Act to control radionuclide emissions to the ambient air from a number of different source categories (54 FR 51654, December 15, 1989 (Docket A-94-60, Item II-A-1)). Subpart H of 40 CFR part 61 defines facilities owned and operated by the DOE as one of the source categories subject to a NESHAP. DOE administers many facilities, including government-owned/contractor-operated facilities, across the country. Some facilities conduct nuclear energy and weapons

research and development, some enrich uranium and produce plutonium for nuclear weapons and reactors, and some process, store and dispose of radioactive wastes. As DOE facilities mature and complete their mission, some facilities are now faced with decontamination and decommissioning.

In general, certain DOE facilities handle significant amounts of radioactive material and can emit radionuclides into the air. Some of the DOE facilities emitting radionuclides are on large sites covering hundreds of square miles in remote locations. Some of the smaller facilities resemble typical industrial facilities and are located in suburban areas. DOE facilities emit a wide variety of radionuclides in various physical and chemical states. The purpose of subpart H is to limit radionuclide emissions (not including radon) from the stacks and vents at DOE facilities so that no member of the public receives an effective dose equivalent of more than 10 mrem/yr.

Subpart I sets forth the NESHAP for non-DOE federal facilities (excluding NRC licensees). The facilities in this category can emit a variety of radionuclides. These radionuclides affect individuals by inhalation, ingestion, ground deposition and immersion pathways. The purpose of subpart I is to limit radionuclide emissions, including iodine, from the stacks and vents at non-DOE federal facilities including DoD and other federal research and industrial facilities so that no member of the public receives an effective dose equivalent of more than 10 mrem/yr. and so that no member of the public receives an effective dose equivalent of more than 3 mrem/yr. from exposure to emissions of iodine.

Both subparts H and I require emissions sampling, monitoring and calculations to identify compliance with the standard. Section 61.93 of subpart H and § 61.107 of subpart I require continuous sampling and monitoring of radionuclide emissions at all release points that have a potential to discharge radionuclides into the ambient air in amounts that could cause an effective dose equivalent in excess of 1% of the standard. In evaluating the potential of a release point to discharge radionuclides into the air, the estimated radionuclide release rates shall be based on the discharge of the effluent stream that would result if all pollution control equipment did not exist, but the facility's operations were otherwise normal. Subparts H and I currently incorporate by reference ANSI N13.1-1969, "Guide to Sampling Airborne Radioactive Materials in Nuclear

Facilities” (Docket A-94-60, Item II-D-1). However, in 1999, the American National Standards Institute revised ANSI N13.1-1969. The new ANSI/HPS N13.1-1999, “Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities,” was published as a supplement to the Health Physics Journal in May 1999 (Docket A-94-60, Item II-D-3).

### B. Proposed Rule

A proposed amendment to incorporate ANSI/HPS N13.1-1999 into subparts H and I was published in the May 9, 2000, **Federal Register** (65 FR 29934) (Docket No. A-94-60, Item III-A-3). In developing the proposal, EPA reviewed the ANSI/HPS N13.1-1999 standard, conducted a comparative analysis of ANSI/HPS N13.1-1999 with ANSI N13.1-1969, assessed the compatibility of ANSI/HPS N13.1-1999 with subparts H and I, held discussions with DOE and members of the ANSI work group, and reviewed and analyzed ANSI/HPS N13.1-1999 supporting materials. Based on this analysis, EPA proposed amendments to require that ANSI/HPS N13.1-1999 be used for sampling any newly constructed source and any source undergoing a modification that would result in an effective dose equivalent to any member of the public greater than 1% of the standard.

The comment period for the proposed amendment initially lasted 30 days (from May 9, 2000 to June 9, 2000). EPA also received a request for a public hearing, which was held on July 12, 2000. After the public hearing, the comment period was extended to August 14, 2000. Upon receiving another request for an extension of the comment period, EPA extended it to October 6, 2000 (65 FR 21198) (Docket No. A-94-60, Item III-A-3). All comments were received before October 6, 2000, and were reviewed, analyzed and fully considered in developing the final amendment. Detailed responses to comments can be found in “Response to Comments Amendment to Radionuclide NESHAPs (40 CFR part 61), Subpart H and Subpart I” (Docket No. A-94-60, Item V-A-2).

### III. Discussion of Comments

Comments concerning the proposed amendment were received from DOE, DoD, members of the ANSI working group, environmental groups, various state departments of health and environmental protection, and private citizens. The most significant issue raised in the comments was EPA’s proposal to “grandfather” existing

sources (that is, not require upgrades to existing sampling systems). Aspects of this issue addressed in the comments include: whether upgrades would lead to more accurate samples, how costs were evaluated, and how the use of ANSI/HPS N13.1-1999 might affect unplanned releases. These issues are discussed below.

Several commenters raised issues such as the dose limits established in Subparts H and I, and aspects of computer modeling used to estimate doses. EPA determined that these issues do not relate to sampling procedures or systems and, thus, are outside the scope of this rulemaking.

#### A. Evaluation of Whether Upgrades Would Lead to More Accurate Samples

To address the issue of whether to “grandfather” existing sources, EPA conducted an analysis of the ANSI/HPS N13.1-1999 standard. EPA compared the ANSI N13.1-1969 standard with the ANSI/HPS N13.1-1999 standard. The significant differences between the two standards are that the ANSI/HPS N13.1-1999 standard:

1. Does not include the requirements for multiple sampling nozzles and isokinetic sampling;
2. Provides performance criteria for selecting between sampling locations, as well as specifying methods for measuring velocity profiles;
3. Provides information on where to obtain assistance in designing sampling lines; and
4. Describes a graded approach in the sampling efforts.

EPA concluded that, “In practice, both standards will result in sampling locations at the same spot. For either standard, if velocity profiles are made and a uniform concentration of particles measured, there would be no difference in the required sampling location. The only difference would be in the number of sample nozzles specified. The implications to past and future compliance data generated at DOE facilities is minor, in that the changes in sampling location criteria between the two standards will not significantly change the representativeness of the sample extracted.” (Docket No. A-94-60, Item II-A-3) Therefore, EPA concluded, unless any field data indicated otherwise, that upgrading existing sources would not change the representativeness of the sample extracted. However, EPA also believed that ANSI/HPS N13.1-1999 incorporates significant advances in sampling and monitoring methodology that have occurred over the last 30 years and that its performance-based approach allows greater flexibility while

still ensuring representative sampling. For new sources, the cost of installing systems compliant with ANSI/HPS N13.1-1999 are likely to be comparable to the cost of installing systems compliant with ANSI N13.1-1969 (refer to section B, Cost Information to Upgrade Existing Sources for additional information). For these reasons, the Agency determined that it was justified and prudent to require use of ANSI/HPS N13.1-1999 for new and modified sources.

Comments on the proposal, including claims that regulatory violations or health threats might result from not upgrading existing stacks, emphasized the importance of accurately assessing the real world implications of changes to sampling systems. Initially, EPA did not have actual field data indicating whether the compliance status of any existing source is likely to be changed by the adoption of the requirement of ANSI/HPS N13.1-1999. Therefore, EPA solicited field data pertaining to the comparative performance of ANSI/HPS N13.1-1999. EPA requested such data and information from the chairperson of the ANSI committee that developed the new sampling standard (Docket No. A-94-60, Item II-C-3), members of the ANSI committee, DOE, and attendees of the July 12, 2000, public hearing (Docket No. A-94-60, Item IV-D-18).

In response to these requests, DOE provided data that permitted a direct comparison of the effect of using ANSI N13.1-1969 versus ANSI/HPS N13.1-1999 to determine compliance at existing sources. The DOE sent data from Los Alamos National Laboratory, the Savannah River Site, and Rocky Flats that indicated that for stacks retrofitted with a shrouded probe as expected by ANSI/HPS N13.1-1999, sampling results were similar to those obtained with the use of the multiple nozzle rake (required by ANSI N13.1-1969). For example, DOE described the results of installing single point sampling systems on over 40 radionuclide air emission sources at the Savannah River Site as follows:

A shrouded probe was installed on these sources as part of upgrades done for operational purposes. Both the ANSI/HPS N13.1-1999 suggested inventory method and the Appendix D to 40 CFR 61 method have been used to evaluate the potential to emit radionuclide (PEDE). Therefore, they allow for direct comparison of results using the ANSI N13.1-1969 and ANSI/HPS N13.1-1999 methodologies. The actual measured emissions both before and after the upgrade to single point sampling are on the order of 0.00001 mrem/yr. These sources are considered major sources which represent a wide range and number of DOE sources across its facilities. Based on these 41

sources, during normal operations, there is no noticeable difference in the before and after alpha and beta/gamma data. Therefore, the installation of the single point sampling systems did not significantly affect the sample results and would not significantly affect compliance with Subpart H." (Docket No. A-94-60, Item IV-D-22)

Another factor EPA considered in determining whether to grandfather existing DOE sources was an evaluation of recently reported radionuclide emission data from DOE facilities. In accordance with 40 CFR 61.94, DOE demonstrates compliance with the subpart H NESHAP by determining the highest effective dose equivalent (EDE) to any member of the public at any offsite location where there is a residence, school, business, or office. All DOE facilities subject to subpart H must annually report such monitoring results. Twenty-seven DOE facilities submitted subpart H reports to EPA headquarters for the year 2000 (these reports are located in Docket No. A-94-60, check the Index beginning with section V-B). None of the reporting facilities were out of compliance. Four of these facilities (15%) reported an EDE to the nearest maximally exposed individual (MEI) to be greater than 1% of the 10 mrem/yr standard while 23 facilities (85%) reported a total EDE to the nearest MEI to be less than 10% of the 10 mrem/yr standard. Note that the highest EDE came from DOE's Fernald facility. Releases from this facility were measured at 1 mrem/yr, primarily due to removal or processing of a large volume of thorium-bearing waste pit material for shipment and off-site disposal.<sup>1</sup>

To further understand the compliance and public health implications of upgrading (or not upgrading) existing sampling systems, EPA examined the Hanford facility 2000 report (Docket No. A-94-60, Item V-B-2). EPA picked Hanford for this particular analysis because it is one of DOE's largest facilities. The report noted that there were 26 major sources at the Hanford site (a source is designated as major when its potential maximum emissions after all treatment controls have been hypothetically removed can cause the highest potential exposure to be greater than 0.1 mrem/yr EDE). The reported EDE for the MEI ranged from  $7.4 \times 10^{-13}$  to  $4.5 \times 10^{-2}$  mrem/yr. Currently, estimated doses from emissions sampled under ANSI N13.1-1969 at

Hanford are ten to thousands of times lower than EPA's dose limits. Therefore, upgrading the existing sampling systems to comply with ANSI/HPS N13.1-1999 would result in detection of releases exceeding EPA's standards only if actual emissions were orders of magnitude higher than those found by current systems. Available data provide no basis to conclude that, in general, there would be any measurable difference in detected emissions using ANSI/HPS N13.1-1999 as opposed to ANSI N13.1-1969. These reported doses confirm EPA's conclusion reached during the proposal development that there are likely no detrimental impacts on regulatory compliance of DOE facilities or public health from allowing existing sampling systems to remain in operation.

#### *B. Cost Information To Upgrade Existing Sources*

Another significant factor that EPA considered in determining whether to require all facilities to meet the requirements of ANSI/HPS N13.1-1999 was the cost associated with such an effort. EPA received cost estimates from both DOE and the ANSI work group (Docket No. A-94-60, Items IV-D-7 and IV-D-3). The estimated cost to upgrade an existing system ranged from \$65,000 to \$2.5 million per sampling system. Because of the widely divergent cost estimates, EPA commissioned a third party expert to conduct an independent analysis of the expected cost of upgrades that would be necessary to meet ANSI/HPS N13.1-1999. EPA contacted Andersen Instruments, Inc., a well-established company responsible for the design, construction and placement of the shrouded probe at several DOE facilities, to determine the cost of upgrading existing sampling systems to meet the ANSI/HPS N13.1-1999 standard.<sup>2</sup> The following statement was presented to EPA by Andersen Instruments, Inc.:

"Any existing sampling system even though it meets the multi-point criteria of U.S. EPA Method 1 and Appendix A of ANSI/HPS N13.1-1999 must, at a minimum, conduct the single-point sampling qualification testing [finding a suitable location for placement of the shrouded probe]. Andersen Instruments feels this task can be accomplished at a cost of \$5,000 per stack. Since May 1996, over 45 sources have been upgraded from the ANSI type isokinetic sample probe to a single point sampling probe utilizing the shrouded probe technology. The actual cost for installing a

shrouded probe and a simple sample box with manual flow control was \$100,000 per source. Andersen Instruments feels this cost is accurate if this cost includes labor, engineering and hardware." (Docket No. A-94-60, Item IV-C-2)

If the Agency were to require the approximately 500 existing DOE and DoD sources (see Section I.D. of this preamble) to upgrade to the newer ANSI/HPS N13.1-1999 standard, these costs would be approximately \$50 million. Given that EPA's analysis demonstrates that, in general, there would not be any measurable difference in detected emissions using ANSI/HPS N13.1-1999 rather than ANSI N13.1-1969, EPA concludes that the expected benefit of requiring use of ANSI/HPS N13.1-1999 at all existing sources does not justify the resource expenditures that would be required to effect this change.

#### *C. Accidental Releases*

The emissions limitations in subparts H and I apply to all releases, whether incident to normal operations or accidental. Therefore, EPA examined whether certain facets of ANSI/HPS N13.1-1999 could help prevent or reduce accidental releases of radioactivity from regulated facilities. A number of commenters suggested that application of ANSI/HPS N13.1-1999 could result in fewer accidental or unplanned releases of radionuclides. Oftentimes, accidental releases bypass control equipment, as a result, emissions may have particles sizes associated with the aerosol upstream of the control equipment, rather than that typically encountered downstream of control equipment. These larger particles can often be sampled more effectively using the shrouded probes encouraged by ANSI/HPS N13.1-1999. For these reasons, EPA evaluated the potential effects of accidental releases when using ANSI/HPS N13.1-1999.

To begin, EPA sought to characterize unplanned releases. There were 37 unplanned releases reported in the subpart H reports from 1994-1997 and 1999. The average dose resulting from these accidental releases was 0.034 mrem/yr.<sup>3</sup> Nineteen (51%) unplanned releases were attributed to human error. Nine (24%) unplanned releases were considered a result of poor inspections. Two (5%) unplanned releases occurred outside of the stack and seven (19%)

<sup>3</sup> Only 1 unplanned release resulted in the dose being greater than 10% of the standard but not exceeding the standard. This was a tritium release that occurred at the Savannah River Site in 1995. Current regulation cites methods for sampling tritium in the non-particulate form that are the same as discussed in ANSI/HPS N13.1-1999.

<sup>1</sup> The waste pit area contains approximately 1 million tons of radioactive waste from Fernald's uranium production operations. Most production-era processing involved extracting uranium from ores, resulting in waste with elevated levels of thorium, radium, and residual uranium.

<sup>2</sup> Following the guidance in ANSI/HPS N13.1-1999, the expected method for obtaining a representative sample is the use of a properly placed shrouded probe in place of a multi-point sampling system.

unplanned releases were not sufficiently described for classification (due to the withholding of sensitive information).

EPA concluded that utilizing ANSI/HPS N13.1-1999 rather than ANSI N13.1-1969 would not have reduced the occurrence of accidental releases due to human error, nor would it have affected releases occurring outside the stack. Furthermore, doses from unplanned releases were so low (on average, almost 1000 times lower than the applicable standard) that even significant increases in sampled emissions, if found, would have had minimal public health impact and would have been unlikely to affect radionuclide NESHAPs compliance.

EPA determined, however, that 24% of unplanned releases may not have occurred if more stringent inspection requirements, such as those in ANSI/HPS N13.1-1999, were required by subparts H and I. Properly functioning sampling systems—as ensured by regular, rigorous inspections—can provide an early indication of an otherwise unapparent failure of emissions control equipment or other conditions contributing to unplanned releases. EPA therefore imposed only those provisions of ANSI/HPS N13.1-1999 affecting inspections, but determined that other aspects of ANSI/HPS N13.1-1999 would not affect these kinds of unplanned releases. To implement these inspection requirements as part of subparts H and I, EPA has amended the Quality Assurance Methods in Appendix B, Method 114—Test Methods for Measuring Radionuclides Emissions from Stationary Sources to include a table that specifies when each component of the sampling system must be inspected. This table is based on a similar table found in ANSI/HPS N13.1-1999.

#### IV. Conclusion

EPA determines that any potential improvement in sampling from existing sources subject to 40 CFR part 61, subparts H and I, when viewed against the substantial cost of upgrading all existing sources to meet ANSI/HPS N13.1-1999, does not justify imposing such an expenditure across the entire Federal complex. EPA acknowledges, however, that application of ANSI/HPS N13.1-1999 to certain existing DOE sources may result in a cost-effective net environmental benefit. In those instances, EPA encourages DOE to make the necessary changes to further ensure protection of human health and the environment. To promote such changes, EPA plans to pursue a Memorandum of Understanding with DOE that would aid in identifying sources that should be

upgraded to meet the ANSI/HPS N13.1-1999 standard. Moreover, EPA has concluded that application of more stringent inspection requirements, as set forth in ANSI/HPS N13.1-1999, could potentially result in a significant decrease in unplanned releases of radionuclides to the air. Therefore, EPA is amending Appendix B of subparts H and I to incorporate such improved inspection requirements.

To conclude, the final amendment to subpart H and subpart I requires the use of the ANSI/HPS N13.1-1999 standard for new sources as defined in subpart A, including any modified sources that require continuous monitoring. For existing sources, ANSI/HPS N13.1-1999 can be used as a pre-approved alternative methodology as defined in Section 61.93 of subpart H and Section 61.107 of subpart I. The final rule also includes more stringent inspection requirements for ANSI N13.1-1969 systems in 40 CFR part 61 Appendix B, Method 114—Test Methods for Measuring Radionuclide Emissions from Stationary Sources (both subparts H and I require implementing the Quality Assurance Methods in Appendix B, Method 114 when conducting a quality assurance assessment). These requirements will ensure that existing sampling systems, where continuous monitoring is required, are regularly inspected and continue to function as designed.

#### V. Regulatory Analyses

##### A. Regulatory Flexibility Analysis

EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. EPA has also determined that this rule will not have a significant economic impact on a substantial number of small entities. For purposes of assessing the impact of today's rule on small entities, small entities are defined as: (1) A small business that meets the Small Business Administration size standards; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; or (3) a small organization that is any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

EPA has concluded that this action will not have a significant economic impact on a substantial number of small entities. This final rule only imposes requirements on DOE facilities emitting specific radionuclides and non DOE federal facilities. This rule will not

impose any requirements on small entities.

##### B. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with regulatory requirements. Today's action contains no Federal mandates (under the regulatory provisions of Title II of UMRA) for State, local or tribal governments or the private sector. The rule imposes no enforceable duty on any State, local or tribal governments or the private sector; this amendment applies only to facilities owned or operated by DOE and non-DOE federal facilities.

##### C. Paperwork Reduction Act

This action does not impose any new information collection burden. The purpose of this amendment is to place in an existing regulation, new sampling and monitoring procedures. Thus this action will not impose any new



information collection burden. The Office of Management and Budget (OMB) has previously approved the information collection requirements contained in the existing regulations (40 CFR part 61, Subparts B, H, I, K, R, T, W) under the provisions of the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.*, and has assigned OMB control number 2060-0191 (EPA ICR No. 1101.11).

Copies of the ICR document may be obtained from Susan Auby, by mail at the Office of Environmental Information, Collection Strategies Division; U.S. Environmental Protection Agency (2822T); 1200 Pennsylvania Ave., NW., Washington, DC 20460, by e-mail at [auby.susan@epa.gov](mailto:auby.susan@epa.gov), or by calling (202) 566-1672. A copy may also be downloaded off the internet at <http://www.epa.gov/icr>. Please include the ICR and/or OMB number in any correspondence.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR Chapter 15.

#### *D. Executive Order 12866—Regulatory Planning and Review*

Under Executive Order 12866, 58 FR 51736 (October 4, 1993), EPA must determine whether a regulation is "significant" and therefore subject to review by the Office of Management and Budget. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or

State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

It has been determined that this rule is not a "significant regulatory action" under the terms of Executive Order 12866 and is therefore not subject to OMB review.

#### *E. Executive Order 13045—Protection of Children from Environmental Health Risks and Safety Risks*

Executive Order 13045 applies to any rule that: (1) Is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

EPA determines that this rule is not subject to Executive Order 13045. As described above, this action does not constitute an economically significant rule as defined by Executive Order 12866. Further, EPA determines that the matter addressed in this rule, *i.e.*, whether to apply ANSI/HPS N13.1-1999 as the sampling and monitoring standard for Federal radionuclide existing sources, does not involve a decision on environmental health or safety risks that may disproportionately affect children.

#### *F. Executive Order 13132—Federalism*

Executive Order 13132, entitled "Federalism" (64 FR 43255; August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" are defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

This final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This amendment applies only to facilities owned or operated by DOE and non-DOE federal facilities. Thus, Executive Order 13132 does not apply to this rule.

#### *G. Executive Order 13175—Consultation and Coordination With Indian Tribal Governments*

Executive Order 13175, entitled "Consultation and Coordination with Indian Tribal Governments" 65 FR 67249 (November 6, 2000), requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications."

This final rule does not have tribal implications, as specified in Executive Order 13175. No tribal governments are directly regulated by this regulatory action and the nature of these amendments will impose no substantial direct effects on one or more Indian tribes. This rule does not affect the emission limits of any facility, nor will it have any impact on facility emissions, and therefore will have no impact on populations near any regulated facility. Thus, Executive Order 13175 does not apply to this rule.

#### *H. The National Technology Transfer and Advancement Act of 1995 (NTTAA)*

As noted in the proposed rule, Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104-113, Section 12 (d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. This rulemaking is intended to increase the use of the ANSI/HPS N13.1-1999, a consensus standard developed by the American National Standards Institute (ANSI) Working Group. Thus, it is consistent with the goals of the NTTAA.

The American National Standards Institute (ANSI) has served as administrator and coordinator of the United States private sector voluntary standardization system for 80 years, by promoting and facilitating voluntary consensus standards and conformity assessment systems and by promoting their integrity.

*I. Executive Order 13211—Energy Effects*

This rule is not subject to Executive Order 13211, “Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use” (66 FR 28355 (May 22, 2001)) because it is not a significant regulatory action under Executive Order 12866.

*J. Congressional Review Act (CRA)*

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a “major rule” as defined by 5 U.S.C. 804(2). This rule will be effective 30 days after date of publication in the **Federal Register**.

**List of Subjects in 40 CFR Part 61**

Environmental protection, Air pollution control, Incorporation by reference, Radon, Radionuclides, Reporting and recordkeeping requirements.

Dated: August 22, 2002.

**Christine Todd Whitman,**  
*Administrator.*

For the reasons set forth in the preamble, the Environmental Protection Agency amends 40 CFR Part 61 as follows:

**PART 61—[AMENDED]**

1. The authority citation for 40 CFR part 61 continues to read as follows:

**Authority:** 42 U.S.C. 7401, 7412, 7414, 7416, 7601, and 7602.

**Subpart A—[Amended]**

2. Section 61.18 is amended by revising the introductory text,

paragraphs (a) introductory text, (c), and (d) introductory text to read as follows:

**§ 61.18 Incorporations by reference.**

The materials listed below are incorporated by reference in the corresponding sections noted. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of the approval, and a notice of any change in these materials will be published in the **Federal Register**. The materials are available for inspection at the corresponding address noted below, and at the Office of the Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC and the Library (MD–35), or at U.S. EPA’s Air Docket at 1200 Pennsylvania Avenue, NW, Washington, DC 20460.

(a) The following materials are available for purchase from at least one of the following addresses: American Society for Testing and Materials (ASTM) International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA, 19428–2959; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

(c) The following material is available for purchase from the American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, New York 10036.

(1) ANSI N13.1–1969, “Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities.” IBR approved for 61.93(b)(2)(ii) and 61.107(b)(2)(ii).

(2) ANSI/HPS N13.1–1999 “Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities,” IBR approved [insert date 30 days after date of publication in **Federal Register**] for §§ 61.93(c); 61.107(d) and Method 114, paragraph 2.1 of Appendix B to 40 CFR part 61.

(d) The following material is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402–9325, telephone (202) 512–1800 or outside of Washington, DC area: 1–866–512–1800.

**Subpart H—[Amended]**

3. Section 61.93 is amended by revising paragraph (b) introductory text, (b)(1)(i), (b)(1)(ii), (b)(2)(i), and by adding paragraphs (c), (d), (e), (f) and (g) to read as follows:

**§ 61.93 Emission monitoring and test procedures.**

(b) Radionuclides emission rates from existing point sources (stacks or vents) shall be measured in accordance with the following requirements or with the requirements of paragraph (c) of this section, or other procedures for which EPA has granted prior approval:

(1) \* \* \*  
(i) Reference Method 2 of appendix A to part 60 of this chapter shall be used to determine velocity and volumetric flow rates for stacks and large vents.

(ii) Reference Method 2A of appendix A to part 60 of this chapter shall be used to measure flow rates through pipes and small vents.

(2) \* \* \*  
(i) Reference Method 1 of appendix A to part 60 of this chapter shall be used to select monitoring or sampling sites.

(c) Radionuclide emission rates from new point sources (stacks or vents) as defined in subpart A shall be measured in accordance with the following requirements, or other procedures for which EPA has granted prior approval:

(1) Effluent flow rate measurements shall be made using the following methods:

(i) ANSI/HPS N13.1–1999 “Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities” (incorporated by reference—see § 61.18) shall be used to determine velocity and volumetric flow rates for stacks and large vents.

(ii) ANSI/HPS N13.1–1999 shall be used to measure flow rates through pipes and small vents.

(iii) The frequency of the flow rate measurements shall depend upon variability of the effluent flow rate. For variable flow rates, continuous or frequent flow rate measurements shall be made. For relatively constant flow rates only periodic measurements are necessary.

(2) Radionuclide shall be directly monitored or extracted, collected and measured using the following methods:

(i) ANSI/HPS N13.1–1999 shall be used to select monitoring or sampling sites.

(ii) The effluent stream shall be directly monitored continuously with an in-line detector or representative samples of the effluent stream shall be withdrawn continuously from the sampling site following the guidance presented in ANSI/HPS N13.1–1999. The requirements for continuous sampling are applicable to batch



processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA's prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions.

(iii) Radionuclides shall be collected and measured using procedures based on the principles of measurement described in appendix B, Method 114 of this part. Use of methods based on principles of measurement different from those described in appendix B, Method 114 of this part must have prior approval from the Administrator. EPA reserves the right to approve measurement procedures.

(iv) A quality assurance program shall be conducted that meets the performance requirements described in ANSI/HPS N13.1-1999.

(d) When it is impractical to measure the effluent flow rate at a source in accordance with the requirements of paragraph (b)(1) or (c) of this section or to monitor or sample an effluent stream at a source in accordance with the site selection and sample extraction requirements of paragraph (b)(2) or (c) of this section, the facility owner or operator may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that:

(1) It can be shown that the requirements of paragraph (b)(1) or (2) or (c) of this section are impractical for the effluent stream.

(2) The alternative procedure will not significantly underestimate the emissions.

(3) The alternative procedure is fully documented.

(4) The owner or operator has received prior approval from EPA.

(e) Radionuclide emission measurements in conformance with the requirements of paragraph (b) or (c) of this section shall be made at all release points that have a potential to discharge radionuclides into the air in quantities that could cause an effective dose equivalent in excess of 1% of the standard. All radionuclides that could contribute greater than 10% of the potential effective dose equivalent for a release point shall be measured. With prior EPA approval, DOE may determine these emissions through alternative procedures. For other release points that have a potential to release radionuclides into the air, periodic confirmatory measurements shall be made to verify the low emissions.

(f) To determine whether a release point is subject to the emission measurement requirements of paragraph (b) or (c) of this section, it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to discharge radionuclides into the air for the purposes of this section, the estimated radionuclide release rates shall be based on the discharge of the effluent stream that would result if all pollution control equipment did not exist, but the facilities operations were otherwise normal.

(g) Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standard if the owner or operator meets the following criteria:

(1) The air at the point of measurement shall be continuously sampled for collection of radionuclides.

(2) Those radionuclides released from the facility that are the major contributors to the effective dose equivalent must be collected and measured as part of the environmental measurement program.

(3) Radionuclide concentrations that would cause an effective dose equivalent of 10% of the standard shall be readily detectable and distinguishable from background.

(4) Net measured radionuclide concentrations shall be compared to the concentration levels in Table 2 of appendix E of this part to determine compliance with the standard. In the case of multiple radionuclides being released from a facility, compliance shall be demonstrated if the value for all radionuclides is less than the concentration level in Table 2 of appendix E of this part, and the sum of the fractions that result when each measured concentration value is divided by the value in Table 2 of appendix E of this part for each radionuclide is less than 1.

(5) A quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114 of this part.

(6) Use of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA. Applications for approval shall include a detailed description of the sampling and analytical methodology and show how the above criteria will be met.

#### Subpart I—[Amended]

4. Section 61.107 is amended by revising paragraphs (b) introductory text, (b)(1)(i), (b)(1)(ii), (b)(2)(i), and by adding paragraphs (d), (e), (f), (g), and (h) to read as follows:

#### § 61.107 Emission determination.

\* \* \* \* \*

(b) Radionuclide emission rates from existing point sources (stacks or vents) shall be measured in accordance with the following requirements or within the requirements of paragraph (d) of this section, or other procedures for which EPA has granted prior approval:

(1) \* \* \*

(i) Reference Method 2 of appendix A to part 60 of this chapter shall be used to determine velocity and volumetric flow rates for stacks and large vents.

(ii) Reference Method 2A of appendix A to part 60 of this chapter shall be used to measure flow rates through pipes and small vents.

\* \* \* \* \*

(2) \* \* \*

(i) Reference Method 1 of appendix A to part 60 of this chapter shall be used to select monitoring or sampling sites.

\* \* \* \* \*

(d) Radionuclide emission rates from new point sources (stacks or vents) as defined in subpart A shall be measured in accordance with the following requirements, or other procedures for which EPA has granted prior approval:

(1) Effluent flow rate measurements shall be made using the following methods:

(i) ANSI/HPS N13.1-1999 "Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities" (incorporated by reference—see § 61.18) shall be used to determine velocity and volumetric flow rates for stacks and large vents.

(ii) ANSI/HPS N13.1-1999 shall be used to measure flow rates through pipes and small vents.

(iii) The frequency of the flow rate measurements shall depend upon variability of the effluent flow rate. For variable flow rates, continuous or frequent flow rate measurements shall be made. For relatively constant flow rates only periodic measurements are necessary.

(2) Radionuclide shall be directly monitored or extracted, collected and measured using the following methods:

(i) ANSI/HPS N13.1-1999 shall be used to select monitoring or sampling sites.

(ii) The effluent stream shall be directly monitored continuously with an in-line detector or representative

samples of the effluent stream shall be withdrawn continuously from the sampling site following the guidance presented in ANSI/HPS N13.1-1999. The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA's prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions.

(iii) Radionuclides shall be collected and measured using procedures based on the principles of measurement described in appendix B, Method 114 of this part. Use of methods based on principles of measurement different from those described in appendix B, Method 114 of this part must have prior approval from the Administrator. EPA reserves the right to approve measurement procedures.

(iv) A quality assurance program shall be conducted that meets the performance requirements described in ANSI/HPS N13.1-1999.

(e) When it is impractical to measure the effluent flow rate at a source in accordance with the requirements of paragraph (b)(1) or (d) of this section or to monitor or sample an effluent stream at a source in accordance with the site selection and sample extraction requirements of paragraph (b)(2) or (d) of this section, the facility owner or operator may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that:

(1) It can be shown that the requirements of paragraph (b)(1) or (2) or (d) of this section are impractical for the effluent stream.

(2) The alternative procedure will not significantly underestimate the emissions.

(3) The alternative procedure is fully documented.

(4) The owner or operator has received prior approval from EPA.

(f) Radionuclide emission measurements in conformance with the requirements of paragraph (b) or (d) of this section shall be made at all release points that have a potential to discharge radionuclides into the air in quantities

that could cause an effective dose equivalent in excess of 1% of the standard. All radionuclides that could contribute greater than 10% of the potential effective dose equivalent for a release point shall be measured. With prior EPA approval, DOE may determine these emissions through alternative procedures. For other release points that have a potential to release radionuclides into the air, periodic confirmatory measurements shall be made to verify the low emissions.

(g) To determine whether a release point is subject to the emission measurement requirements of paragraph (b) or (d) of this section, it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to discharge radionuclides into the air for the purposes of this section, the estimated radionuclide release rates shall be based on the discharge of the effluent stream that would result if all pollution control equipment did not exist, but the facilities operations were otherwise normal.

(h) Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standard if the owner or operator meets the following criteria:

(1) The air at the point of measurement shall be continuously sampled for collection of radionuclides.

(2) Those radionuclides released from the facility that are the major contributors to the effective dose equivalent must be collected and measured as part of the environmental measurement program.

(3) Radionuclide concentrations that would cause an effective dose equivalent of 10% of the standard shall be readily detectable and distinguishable from background.

(4) Net measured radionuclide concentrations shall be compared to the concentration levels in Table 2 of appendix E of this part to determine compliance with the standard. In the case of multiple radionuclides being released from a facility, compliance shall be demonstrated if the value for all radionuclides is less than the concentration level in Table 2 of appendix E of this part, and the sum of

the fractions that result when each measured concentration value is divided by the value in Table 2 of appendix E of this part for each radionuclide is less than 1.

(5) A quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114 of this part.

(6) Use of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA. Applications for approval shall include a detailed description of the sampling and analytical methodology and show how the above criteria will be met.

**Appendix B to Part 61—[Amended]**

5. Method 114-Test Methods for Measuring Radionuclide Emissions from Stationary Sources is amended by:

- a. revising Section 2.1;
- b. redesignating paragraphs 4.7 through 4.10 as 4.8 through 4.11 and adding new paragraph 4.7;
- c. revising newly designated paragraphs 4.8 through 4.11.

The addition and revisions read as follows:

**Appendix B to Part 61—Test Methods**

**Method 114—Test Methods for Measuring Radionuclide Emissions from Stationary Sources**

\* \* \* \* \*

**2. Stack Monitoring and Sample Collection Methods**

\* \* \* \* \*

2.1 Radionuclides as Particulates. The extracted effluent stream is passed through a filter media to remove the particulates. The filter must have a high efficiency for removal of sub-micron particles. The guidance in ANSI/HPS N13.1-1999 (section 6.6.2 Filter media) shall be followed in using filter media to collect particulates (incorporated by reference—see § 61.18 of this part).

\* \* \* \* \*

**4. Quality Assurance Methods**

\* \* \* \* \*

4.7 Regular maintenance, calibration and field checks shall be performed for each sampling system in use by satisfying the requirements found in Table 2: Maintenance, Calibration and Field Check Requirements.

TABLE 2.—MAINTENANCE, CALIBRATION AND FIELD CHECK REQUIREMENTS

Sampling system components	Frequency of activity
Cleaning of thermal anemometer elements .....	As required by application.
Inspect pitot tubes for contaminant deposits .....	At least annually.

TABLE 2.—MAINTENANCE, CALIBRATION AND FIELD CHECK REQUIREMENTS—Continued

Sampling system components	Frequency of activity
Inspect pitot tube systems for leaks .....	At least annually.
Inspect sharp-edged nozzles for damage .....	At least annually or after maintenance that could cause damage.
Check nozzles for alignment, presence of deposits, or other potentially degrading factors.	Annually.
Check transport lines of HEPA-filtered applications to determine if cleaning is required.	Annually.
Clean transport lines .....	Visible deposits for HEPA-filtered applications. Surface density of 1 g/cm <sup>3</sup> .
Inspect or test the sample transport system for leaks .....	At least annually.
Check mass flow meters of sampling systems with a secondary or transfer standard.	At least quarterly.
Inspect rotameters of sampling systems for presence of foreign matter	At the start of each sampling period.
Check response of stack flow rate systems .....	At least quarterly.
Calibration of flow meters of sampling systems .....	At least annually.
Calibration of effluent flow measurement devices .....	At least annually.
Calibration of timing devices .....	At least annually.

4.8 Periodic internal and external audits shall be performed to monitor compliance with the quality assurance program. These audits shall be performed in accordance with written procedures and conducted by personnel who do not have responsibility for performing any of the operations being audited.

4.9 A corrective action program shall be established including criteria for when corrective action is needed, what corrective actions will be taken and who is responsible for taking the corrective action.

4.10 Periodic reports to responsible management shall be prepared on the performance of the emissions measurements program. These reports should include assessment of the quality of the data, results of audits and description of corrective actions.

4.11 The quality assurance program should be documented in a quality assurance project plan that should address each of the above requirements.

\* \* \* \* \*

[FR Doc. 02-22361 Filed 9-6-02; 8:45 am]

BILLING CODE 6560-50-U

