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40 CFR Part 61

National Emission Standards for Hazardous Air Pollutants; Standard for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities; Standard for Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licenses and Not Covered by Subpart H; Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 61

[FRL–6604–2]

RIN 2060–AI90

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

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of proposed rulemaking.

SUMMARY: EPA is proposing to amend its regulations as they apply to operations at any facility owned or operated by the Department of Energy (DOE) that emits any radionuclide other than radon-222 and radon-220 into the air and as they apply to non-DOE federal facilities in the radionuclide National Emission Standards Hazardous Air Pollutants (NESHAPs). These regulations require emission sampling, monitoring and calculations to identify compliance with the standard. To sample and monitor these radionuclide air emissions, both require radionuclide emissions from point sources to be measured in accordance with the guidance presented in the American National Standard Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities, ANSI 1969. This ANSI standard was revised and replaced by the new ANSI 1999 standard, entitled "Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities." This proposed amendment will require the use of the new ANSI 1999 standard for newly constructed or modified sources subject to these radionuclide NESHAPs.

DATES: Comments on this proposed action must be received in writing at the address given below on or before by June 9, 2000. A public hearing will be held on July 12, 2000, in Washington, DC if a request for such a hearing is received by June 9, 2000.

ADDRESSES: Comments on the proposal should be submitted (in duplicate) to: Central Docket (6102), Attn: Docket No. A–94–60, U.S. Environmental Protection Agency, 401 M Street, SW, Room M1500, Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: For information concerning the proposal, contact: Ms. Robin Anderson, Center for Waste Management, Office of Radiation and Indoor Air, U.S. Environmental Protection Agency, Mailstop 6608J, Ariel Rios Building, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, by email: anderson.robin@epa.gov or by phone (202) 564–9385. For information concerning the public hearing, contact: Eleanor Thornton-Jones at the same address, by email: *thornton.eleanord@epa.gov* or by phone (202) 564–9773.

SUPPLEMENTARY INFORMATION:

Docket

Docket A–94–60 contains the rulemaking record. The docket is available for public inspection between the hours of 8 a.m. and 5 p.m., Monday through Friday, in room M–1500, Waterside Mall, 401 M Street, SW, Washington, DC 20460. A reasonable fee may be charged for copying.

A. Background

A. Regulatory History

On October 31, 1989, we promulgated the National Emission Standards for Hazardous Air Pollutants (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 is one of the source categories covered in this 1989 final rule. Facilities owned and operated by the Department of Energy (DOE) are covered by Subpart H. 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. These 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 sites resemble typical industrial facilities and are located in suburban areas. These 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 millirem per year (mrem/yr).

Subpart I is the standard for non-DOE federal facilities in the radionuclide NESHAPs. The facilities in this category can emit a variety of radionuclides. These radionuclides can affect individuals by inhalation, ingestion, ground deposition and immersion pathways. Individual facilities may emit only one or two radionuclides affecting only one or two pathways. The purpose of Subpart I is to limit radionuclide emissions, including iodine, from the stacks and vents at non-DOE federal facilities including Department of Defense (DOD) and other research and industrial facilities so that no member of the public receives an effective dose equivalent of more than 10 mrem/year. Also, emissions of iodine shall not exceed an effective dose equivalent of 3 mrem/year to any member of the public.

Both Subparts H and I require emission sampling, monitoring and calculations to identify compliance with the standard. To sample and monitor these radionuclide air emissions, Subpart H in § 61.93, and Subpart I in § 61.107, require radionuclide emissions at all release points which have a potential to discharge radionuclides into the air which could cause an effective dose equivalent in excess of 1% of the standard. These measurements must be made in accordance with the guidance presented in the ANSI N13.1–1969, "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities." (Docket A–94–60, Item II–D–1) However, the 1969 ANSI standard has recently been revised, changed in scope, and retitled as, "ANSI N13.1–1999: Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities." (Docket A–94–60, Item II–D–3) It was published in the May 1999, *Health Physics Newsletter* by the Health Physics Society Standard Committee and its ANSI Working Group.

After October 1, 2000, ANSI N13.1–1999 will be the required sampling guide for any newly constructed source and any source undergoing modification resulting in the effective dose equivalent to be greater than 1% of the standard as prescribed in § 61.92 of Subpart H and § 61.102 of Subpart I.

B. Purpose of ANSI N13.1–1999

The original ANSI N13.1–1969 Standard, "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities," was developed to provide engineers and designers guidance to adequately sample air in the facility to determine the radiation exposure to facility workers and to members of the public. The new ANSI N13.1–1999 narrows the scope of the standard from any air in the facility to only ducts and stacks of nuclear facilities. It provides a performance-based criteria for the

design and use of systems for sampling the releases of airborne radioactive substances in ducts and stacks.

We determined that it would be appropriate to consider adopting the revised standard based on our independent review of ANSI N13.1–1999. Our review indicated that the difference between the two standards that could significantly impact the representativeness of the sample extracted was the requirement for multiple sampling nozzles and isokinetic sampling cited in ANSI N13.1–1999. In June 1994, we approved the use of single-point sampling using a shrouded probe as an alternative methodology to demonstrate compliance with 40 CFR Part 61, Subpart H, § 61.93(b)(2)(ii). However, this alternative methodology was never promulgated and subsequently not consistently used by DOE. ANSI N13.1–1999 advocates the use of single point sampling using a similar shrouded probe by stating, "the use of these rakes [multiple-point sampling nozzles] is no longer considered good practice." This assertion is supported by documented research on the shrouded probe. In a memo, dated August 26, 1993 (Docket A–94–60, Item II–D–7), from DOE to EPA, it was stated that:

> The single-point sampling systems for sampling radioactive particulate that are based upon the shrouded probe and located according to principles and criteria developed at LANL [Los Alamos National Laboratory] in collaboration with Texas A&M University, are simpler, more reliable and provide more representative sampling performance over a wide range of sampling conditions than the standard systems. Losses in the probe inlet and sampling transport line are significantly reduced.

Since 1997, DOE and EPA staff have met on a regular basis to discuss the significant issues surrounding Subpart H. In June 1999, DOE submitted a paper to the EPA entitled, "Proposed Implementation of ANSI N13.1–1999 at the Department of Energy."(Docket A–94–60, Item II–D–6) The purpose of this paper was to describe how DOE could implement ANSI N13.1–1999. This paper states that:

> ANSI N13.1–1999 appears to be appropriate for stack sampling and monitoring of radioactive emissions at new DOE facilities and at facilities that are undergoing significant modifications to ventilation systems. The standard describes a low cost, low maintenance measurement system, with superior performance and one that is easy to operate. It is the preferred system to install in new facilities. However, in existing DOE facilities, many require modifications that are difficult and costly. The single-point sampling approach is drastically different from the isokinetic, multi-probe sampling approach utilized in existing stack monitoring systems that are in compliance with ANSI N13.1–1969. Upgrades to the new ANSI require the complete removal of existing systems, with the installation of the new systems requiring substantial testing of stack flow characteristics and extensive retrofitting and rework of the stack.

We have taken into account the results of the DOE implementation paper, past research on the shrouded probe and the independent review of ANSI N13.1–1999 in developing this proposal to amend Subpart H and Subpart I to incorporate ANSI N13.1–1999 for any newly constructed sources and any source undergoing modification, resulting in the effective dose equivalent to be greater than 1% of the standard as prescribed in § 61.92 of Subpart H and § 61.102 of Subpart I.

Discussion of the Proposal

A. Justification for the Proposal

Justification for the proposal is centered around research which indicates that single-point sampling using the shrouded probe (ANSI N13.1–1999) is superior in performance to multi-point sampling using isokinetic probes (ANSI N13.1–1969). This conclusion is documented in the report "Single Point Aerosol Sampling: Evaluation of Mixing and Probe Performance in a Nuclear Stack" by John C. Rodgers *et al.* (1995) (Docket A–94–60, Item II–D–4). A summary of the results found in this paper is provided. The term "ANSI standard" used in this summary below refers to the ANSI N13.1–1969 standard.

Facilities of the DOE under Subpart H and non-DOE federal facilities under Subpart I are required under the EPA NESHAPs to continuously monitor radionuclide emissions from any stacks or ducts that could contribute more than 0.1 millirem per year to the most affected member of the public. ANSI N13.1–1969 serves several roles in implementation of the requirements of the radionuclide NESHAPs. First, it is intended to provide guidance on the number of sampling points that should be used at a given site, with the larger ducts requiring more sampling points than smaller ducts, and rectangularly-shaped ducts requiring more sampling points than circular ducts. As many as 20 sampling points are recommended for large rectangular ducts. However, the ANSI standard recognizes that fewer points may be used if careful evaluation of the sample extraction location shows that the concentration profile is relatively flat as a result of good mixing in the stack or duct. Second, the ANSI standard provides guidance on the design of probes; it recommends sharp-edged probes followed by 90° bends, with a constant internal diameter from the inlet through the elbow. Third, when the standard required multiple probes, it provides designs for rakes of such probes.

It has been known for some time (Rodgers, 1987: Turner et al, 1989: McFarland and Rodger, 1993) that the methodology prescribed in ANSI N13.1–1969 needed to be improved and updated. The use of the "8-and 2-criterion" is not a reliable predictor of stack mixing conditions. [For clarification, "8-and 2-criterion" comes from 40 CFR 60, Appendix A, Method 1: "Sampling or velocity measurement is performed at a site located at least eight stack or duct diameters downstream and two diameters upstream from any flow disturbance such as a bend, expansion, or contraction in the stack, or from a visible flame." ANSI N13.1–1969 provides a similar sampling method: "The distance from the transition or elbow to the point of sampling should be a minimum of five and preferably ten or more diameters downstream * * *. It is recommended that the velocity distribution be measured at the anticipated section to determine that flow is fully developed and mixing complete."] In particular, it does not provide assurance that fluid momentum and contaminant concentration are both well mixed at the sampling location. Use of a multi-nozzle rake can lead to significant internal wall losses of aerosol particles. Fan et al. (1992) tested such a probe and found that approximately 75% of liquid 10 μ aerodynamic diameter (AD) aerosol particles were impacted on the internal wall and only 25% transmitted through a rake to a filter collector. The most accurate and effective method of achieving continuous representative sampling of radioactive aerosol effluents is through the use of a suitably designed shrouded probe extracting samples from a single, properly prepared and located point in the flow.

ANSI N13.1–1999 endorses single point sampling of emissions and provides performance criteria for selecting the appropriate sampling location in the stack and criteria for evaluating the performance of the sampling probe and transport system. Sampling systems, based on the single point sampling approach, that meet the specified performance criteria will meet the precision and accuracy objective of this standard. This approach to sampling airborne, radioactive emissions from stacks and ducts is considered to be the best approach to achieving representative sampling of emissions at a low cost and low maintenance.

The paper, "Single Point Aerosol Sampling: Evaluation of Mixing and Probe Performance in a Nuclear Stack," by John C. Rodgers et al. concluded by indicating that:

> The transmission ratio (ratio of aerosol concentration at the probe exit plane to the concentration in the free stream) was 107% for a 113 L/min (4-cfm) anisokinetic shrouded probe, but only 20% for an isokinetic probe that follows the ANSI N13.1–1969 requirements. Even a specially designed isokinetic probe showed a transmission ratio of 63%. As a consequence of these limitations, recommendations for

Alternative Reference Methodologies (the shrouded probe) for representative sampling of stacks and ducts for emissions of radionuclides were prepared (McFarland and Rodgers, 1993). These were submitted by DOE to the EPA Administrator under the provisions of 40 CFR 61, Subpart H. EPA gave approval in November, 1994 for DOE to use the shrouded probe in its facilities (Nichols, 1994). (Docket A–94–60, Item II–C–1)

DOE has not consistently chosen to use the shrouded probe. Therefore, by incorporating ANSI N13.1–1999 into Subpart H and into Subpart I, DOE and non-DOE Federal facilities will be required to use ANSI N13.1–1999 for any newly constructed source and any source undergoing modification, resulting in the effective dose equivalent to be greater than 1% of the standard as prescribed in § 61.92 of Subpart H and § 61.102 of Subpart I. It is not required for existing systems to upgrade using ANSI N13.1–1999 because of the strong effort towards decontamination and decommissioning (D&D) as well as privatization by DOE. It both cases, DOE is involved with cleaning a facility and making it available for public use. It would therefore be unnecessary and costly for an existing source to upgrade to meet the ANSI N13.1–1999 standard and then perhaps in a few years not be in existence. However, our proposed rule allows DOE the option to apply ANSI N13.1–1999 to existing sources.

Comments are invited on this proposal. We will monitor the implementation of this amendment, once it is promulgated, to ensure compliance with the Agency objectives.

Regulatory Analyses

Regulatory Flexibility Act

EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this rule under section 605(b) of the Regulatory Flexibility Act, 5 U.S.C. 605(b). EPA has further determined that this proposed rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions. The standards being amended apply only to Federal facilities.

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. 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.

Paperwork Reduction Act

There are no information collection requirements in this proposed rule.

Review Under Executive Order 12866

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."

EPA has determined that this action does not meet any of the criteria enumerated above, and therefore does not constitute a "significant regulatory action" under the terms of the Order.

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.

This rule is not subject to Executive Order 13045 because it is not an economically significant rule as defined by Executive Order 12866, and because it does not involve decisions on environmental health or safety risks that may disproportionately affect children.

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."

Under Section 6 of Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the proposed regulation. EPA also may not issue a regulation that has federalism implications and that preempts State law, unless the Agency consults with State and local officials early in the process of developing the proposed regulation.

This proposed 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. Thus, the requirements of section 6 of the Executive Order do not apply to this rule.

Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments. If the mandate is unfunded, EPA must provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal

governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected and other representatives of Indian tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities."

Today's proposed rule will not significantly or uniquely affect the communities of Indian tribal governments because it will not impose substantial direct compliance costs on such communities. Any cost to implement ANSI N13.1–1999 will be the responsibility of the applicable Federal facility. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

The National Technology Transfer and Advancement Act 2 of 1995 (NTTAA)

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 Agencies decides not to use available and applicable voluntary consensus standards.

In this rulemaking, EPA proposes to use the ANSI N13.1–1999, entitled, "Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities," (ANS/HPS N13.1–1999) a consensus standard developed by the American National Standards Institute (ANSI) Working Group.

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.

List of Subjects in 40 CFR Part 61

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

Dated: April 27, 2000.

Robert Perciasepe,

Assistant Administrator for Air and Radiation.

For the reasons set forth in the preamble, the Environmental Protection Agency proposes to amend 40 CFR part 61 as follows:

PART 61—[AMENDED]

1. The authority citation for 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 adding paragraph (c)(2) to read as follows:

§ 61.18 Incorporations by reference.

* * * * *

(c) * * *

(2) ANSI N13.1–1999 "Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities," IBR approved for § 61.93(b)(1)(i), (ii), (iii), (2)(i), (ii), (iii), (iv); and § 61.107(b)(1)(i), (ii), (iii), (2)(i), (ii), (iii), (iv).

* * * * *

Subpart H—[Amended]

2. Section 61.93 is amended by revising paragraphs (b)(1) and (b)(2) to read as follows:

§ 61.93 Emission monitoring and test procedures.

* * * * *

(b) * * *

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

(i) For existing sources:

(A) Reference Method 2 of appendix A to part 60 of this chapter or ANSI 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.

(B) If Reference Method 2 of appendix A to part 60 of this chapter was used in paragraph (b)(1)(i)(A) of this section, then Reference Method 2A of Appendix A to part 60 of this chapter shall be used to measure flow rates through pipes and small vents. If ANSI N13.1–1999 was used in paragraph (b)(1)(i)(A) of this section then ANSI N13.1–1999 shall be used to measure flow rates through pipes and small vents.

(C) The frequency of the flow rate measurements shall depend upon the 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. If ANSI N13.1–1999 was used in paragraph (b)(1)(i)(A) of this section then ANSI N13.1–1999 shall be used to determine the frequency of the flow rate measurements.

(ii) After October 1, 2000, for any newly constructed source and any source undergoing modification resulting in the effective dose equivalent to be greater than 1% of the standard as prescribed in § 61.92:

(A) ANSI N13.1–1999 shall be used to determine velocity and volumetric flow rates for stacks and large vents.

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

(C) The frequency of the flow rate measurements shall depend upon the variability of the effluent flow rate. ANSI N13.1–1999 shall be used to determine the frequency of the flow rate measurements.

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

(i) For existing sources:

(A) If Reference Method 2 of appendix A to part 60 of this chapter was used in paragraph (b)(1)(i)(A) of this section, then Reference Method 1 of appendix A to part 60 of this chapter shall be used to select monitoring or sampling sites. If ANSI N13.1–1999 was used in paragraph (b)(1)(i)(A) of this section, then ANSI N13.1–1999 shall be used to select monitoring or sampling sites.

(B) If Reference Method 1 of appendix A to part 60 of this chapter was used in paragraph (b)(2)(i)(A) of this section, then 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 N13.1–1969 "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities" (including the guidance presented in appendix A or ANSIN13.1) (incorporated by reference—*see* § 61.18). If ANSI N13.1–1999 was used in paragraph (b)(2)(i)(A) of this section, then 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 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 or as stated in ANSI N13.1–1999. 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.

(C) 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.

(D) A quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114, of this part. However, if existing sources elect to following the criteria in ANSI N13.1–1999, then the quality assurance program in ANSI N13.1–1999 shall be used.

(ii) After October 1, 2000, for any newly constructed source and any source undergoing modification resulting in the effective dose equivalent to be greater than 1% of the standard as prescribed in § 61.92:

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

(B) 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 in ANSI 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 or as stated in ANSI 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). 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.

(C) 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.

(D) A quality assurance program shall be conducted that meets the performance requirements described in ANSI N13.1–1999.

* * * * *

Subpart I—[Amended]

3. Section 61.107 is amended by revising paragraphs (b)(1) and (b)(2) to read as follows:

§ 61.107 Emission determination.

* * * * *

(b) * * *

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

(i) For existing sources:

(A) Reference Method 2 of appendix A to part 60 of this chapter or ANSI N13.1–1999 "Sampling and Monitoring Releases of Airborne Radioactive Substances from the tacks 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.

(B) If Reference Method 2 of appendix A to part 60 of this chapter was used in paragraph (b)(1)(i)(A) of this section, then Reference Method 2A of Appendix A to part 60 of this chapter shall be used to measure flow rates through pipes and small vents. If ANSI N13.1–1999 was used in paragraph (b)(1)(i)(A) of this section then ANSI N13.1–1999 shall be used to measure flow rates through pipes and small vents.

(C) The frequency of the flow rate measurements shall depend upon the 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. If ANSI N13.1–1999 was used in paragraph (b)(1)(i)(A) of this section, then ANSI N13.1–1999 shall be used to determine the frequency of the flow rate measurements.

(ii) After October 1, 2000, for any newly constructed source and any source undergoing modification resulting in the effective dose equivalent to be greater than 1% of the standard as prescribed in § 61.102:

(A) ANSI N13.1–1999 shall be used to determine velocity and volumetric flow rates for stacks and large vents.

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

(C) The frequency of the flow rate measurements shall depend upon the variability of the effluent flow rate. ANSI N13.1–1999 shall be used to determine the frequency of the flow rate measurements.

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

(i) For existing sources:

(A) If Reference Method 2 of appendix A to part 60 of this chapter was used in paragraph (b)(1)(i)(A) of this section, then Reference Method 1 of appendix A to part 60 of this chapter shall be used to select monitoring or sampling sites. If ANSI N13.1–1999 was used in paragraph (b)(1)(i)(A) of this section, then ANSI N13.1–1999 shall be used to select monitoring or sampling sites.

(B) If Reference Method 1 of appendix A part 60 was used in paragraph (b)(2)(i)(A) of this section, then 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 N13.1–1969 "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities" (including the guidance presented in appendix A or ANSIN13.1) (incorporated by reference—see § 61.18). If ANSI N13.1–1999 was used in paragraph (b)(2)(i)(A) of this section, then 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 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 or as stated in ANSI N13.1–1999. 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.

(C) 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.

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

However, if existing sources elect to following the criteria in ANSI N13.1–1999, then the quality assurance program in ANSI N13.1–1999 shall be used.

(ii) After October 1, 2000, for any newly constructed source and any source undergoing modification resulting in the effective dose equivalent to be greater than 1% of the standard as prescribed in § 61.102:

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

(B) 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 in ANSI 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 or as stated in ANSI 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). 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.

(C) 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.

(D) A quality assurance program shall be conducted that meets the performance requirements described in ANSI N13.1–1999.

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