

depressant or stimulant drugs or substances is grounds for—

(1) Denial of an application for any certificate or rating issued under this part for a period of up to 1 year after the date of final conviction; or

(2) Suspension or revocation of any certificate or rating issued under this part.

(b) The commission of an act prohibited by § 91.12(a) of this chapter is grounds for—

(1) Denial of an application for a certificate or rating issued under this part for a period of up to 1 year after the date of that act; or

(2) Suspension or revocation of any certificate or rating issued under this part.

PART 91—GENERAL OPERATING AND FLIGHT RULES

6. By revising § 91.11 to read as follows:

§ 91.11 Alcohol or drugs.

(a) No person may act or attempt to act as a crewmember of a civil aircraft—

(1) Within 8 hours after the consumption of any alcoholic beverage;

(2) While under the influence of alcohol;

(3) While using any drug that affects the person's faculties in any way contrary to safety; or

(4) While having .04 percent by weight or more alcohol in the blood.

(b) Except in an emergency, no pilot of a civil aircraft may allow a person who appears to be intoxicated or who demonstrates by manner or physical indications that the individual is under the influence of drugs (except a medical patient under proper care) to be carried in that aircraft.

(c) Whenever the Administrator has a reasonable basis to believe that a person may have violated paragraph (a)(1), (a)(2), or (a)(4) of this section, that person shall, upon request by the Administrator, furnish the Administrator, or authorize any clinic, hospital, doctor, or other person to release to the Administrator, the results of each test taken within 4 hours after acting or attempting to act as a crewmember that indicates percentage by weight of alcohol in the blood.

(d) Whenever the Administrator has a reasonable basis to believe that a

person may have violated paragraph (a)(3) of this section, that person shall, upon request by the Administrator, furnish the Administrator, or authorize any clinic, hospital, doctor, or other person to release to the Administrator, the results of each test taken within 4 hours after acting or attempting to act as a crewmember that indicates the presence of any drugs in the body.

(e) Any test information obtained by the Administrator under paragraph (c) or (d) of this section may be evaluated in determining a person's qualifications for any airman certificate or possible violations of this chapter and may be used as evidence in any legal proceeding under section 602, 609, or 901 of the Federal Aviation Act of 1958.

(Secs. 313(a), 601, 602, and 609 of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1354(a), 1421, 1422, and 1429), and 49 U.S.C. 106(g) (Revised, Pub. L. 97-449; January 12, 1983))

Issued in Washington, D.C., on December 13, 1984.

Donald D. Engen,
Administrator.

[FR Doc. 85-9244 Filed 4-12-85; 4:05 pm]

BILLING CODE 4910-13-M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 61, 63, and 91

[Docket No. 21956; Notice No. 81-9A]

Submission to Alcohol Tests

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Supplemental notice of proposed rulemaking.

SUMMARY: This notice supplements an FAA Notice of Proposed Rulemaking which, in part, proposed to require aircraft crewmembers to submit to a chemical test of the breath given by a representative of the Administrator under certain conditions. After further analysis, the FAA concluded that it is not practicable to have FAA employees conduct these tests. This notice proposes to require crewmembers to submit to tests for alcohol given by law enforcement officers under certain conditions. It is based, in part, on the National Transportation Safety Board (NTSB) determination that alcohol is a cause or factor in about 40 aircraft accidents annually, almost all of which are fatal. The proposed amendment would facilitate the enforcement of the present alcohol regulations. It is intended to reduce aircraft accidents and incidents attributed to consumption of alcoholic beverages.

DATE: Comments must be received on or before July 16, 1985.

ADDRESSES: Comments on this proposal may be mailed in duplicate to: Federal Aviation Administration; Office of the Chief Counsel; Attn: Rules Docket (AGC-204), Docket No. 21956; 800 Independence Avenue SW., Washington, D.C. 20591, or delivered in duplicate to: Room 916, 800 Independence Avenue SW., Washington, DC 20591. Comments delivered must be marked: Docket No. 21956. Comments may be inspected at Room 916 between 8:30 a.m. and 5:00 p.m.

FOR FURTHER INFORMATION CONTACT: Mike Sacrey or Roger Baker, Operations Branch (AFO-820), General Aviation and Commercial Division, Federal Aviation Administration, 800 Independence Avenue SW., Washington, D.C. 20591; Telephone (202) 426-8194.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed rules by submitting such

written data, views, or arguments as they may desire. Comments relating to the environmental, energy, or economic impact that might result from adopting the proposals contained in this notice are invited. Communications should identify the regulatory docket or notice number and be submitted in duplicate to the address above. All communications received on or before the closing date for comments specified above will be considered by the Administrator before taking action on the proposed rule. The proposals contained in this notice may be changed in light of the comments received. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket. Commenters wishing to have the FAA acknowledge receipt of comments submitted in response to this notice must submit with those comments a self-addressed, stamped postcard on which the following statement is made: "Comments on Docket No. 21956." The postcard will be dated, time stamped, and returned to the commenter.

Availability of This Notice

Any person may obtain a copy of this notice of proposed rulemaking (NPRM) by submitting a request to the Federal Aviation Administration; Office of Public Affairs; Attention: Public Information Center, APA-430; 800 Independence Avenue SW., Washington, D.C. 20591, or by calling (202) 426-8058. Communications must identify the notice number of this NPRM. Persons interested in being placed on a mailing list for future NPRM's should request a copy of Advisory Circular No. 11-2A, Notice of Proposed Rulemaking Distribution System, which describes the application procedures.

Background

Rules relating to the consumption of alcoholic beverages in connection with aircraft operations are set forth in § 91.11 of the Federal Aviation Regulations (FAR) (14 CFR 91.11). This section provides that no person may act as a crewmember of a civil aircraft within 8 hours after the consumption of any alcoholic beverage or while under the influence of alcohol. In addition, the FAA has adopted a rule, explained below, which prohibits acting as a crewmember of a civil aircraft while having a blood alcohol level of .04 percent or more by weight.

"Crewmember" is defined in FAR Part 1

as "a person assigned to perform duty in an aircraft during flight time." A pilot, flight engineer, flight navigator, or flight attendant is such a person.

The FAA is concerned about the serious hazard, during aircraft operations, resulting from impairment of the pilot's faculties due to alcohol. Even small amounts of alcohol affect judgment, coordination, performance, and reaction time. Although the FAA and aviation groups have expended a substantial amount of time and funds for a number of years trying to educate the flying public to this danger, the problem still remains. There continues to be a significant number of accidents each year where alcohol is found to be a factor or cause.

For example, according to an NTSB study, in 1979 general aviation aircraft were involved in 34 accidents where alcohol impairment was a cause/factor, 30 of which were fatal. This represents an 88 percent fatality rate for all of general aviation. Therefore, the FAA has taken additional steps to reduce the frequency of these accidents by strengthening the rules relating to the use of alcohol and drugs.

On July 27, 1981, the FAA published Notice of Proposed Rulemaking (NPRM) No. 81-9 (46 FR 38480), proposing regulations that were intended to deter persons from acting or attempting to act as a crewmember while under the influence of alcohol or drugs and to provide a basis for necessary enforcement action. Among other amendments, Notice 81-9 proposed to prohibit acting or attempting to act as a crewmember of a civil aircraft while having .04 percent or more alcohol in the blood.

Notice 81-9 also proposed to provide that a person whom the FAA had reason to believe had acted or attempted to act as a crewmember in violation of the alcohol rules, on request of the Administrator, would be required to submit to a chemical test of the breath.

Elsewhere in this Federal Register, the FAA is adopting a final rule disposing of the proposals in Notice 81-9, with the exception of the breath test. As proposed, the breath test would have been conducted by a representative of the Administrator on reasonable grounds to believe that the crewmember had violated § 91.11. After further consideration, it appears that it would be impracticable to have representatives of the Administrator equipped and trained to conduct the tests. As a number of commenters stated, due to staffing levels and the large geographic areas covered by district offices, FAA inspectors rarely are able to respond to

a report of a crewmember who is suspected of violating § 91.11 quickly enough to make a breath test useful. Breath testers would not be used often enough by FAA inspectors to warrant the expense of the testers and initial and recurrent training of the inspectors. There appears to be no practical method of requiring suspected violators to submit to a chemical test of the breath conducted by a representative of the Administrator. For this reason, the proposal requiring submission to a chemical test of the breath when requested by the Administrator and the consequences of refusal to submit to such a test were withdrawn.

The FAA recognizes, however, that chemical tests for alcohol content can be very useful in investigating alleged incidents involving alcohol. Many commenters note that state and local law enforcement officers have authority to conduct alcohol tests under their own laws or may arrange for others to conduct alcohol tests. The officers often are trained and equipped to recognize and handle people who may be under the influence of alcohol. The commenters also note that it is particularly important to obtain information on the pilot of an aircraft as soon as possible following an accident or incident and that state and local law enforcement officers often are at the scene hours before an FAA inspector can arrive. Many commenters suggest that the FAA take advantage of these officers' expertise and availability.

The FAA has determined that these comments have merit. Most law officers have the authority under state or local laws to conduct alcohol tests or to arrange for tests to be given. These officers have training in dealing with individuals who may be under the influence of alcohol and often are called to the scene of aircraft accidents or incidents. The FAA has, in the past, taken action against airmen for violating the alcohol rules based on information collected by state or local law enforcement officers pursuant to their own investigations, including observation of the airman or a chemical test to determine blood alcohol level.

The FAA does not currently require a crewmember to cooperate with such an investigation by a law enforcement officer. Under current rules, if the crewmember were to refuse to take a chemical test of the breath requested by a law officer who had reason to believe that the crewmember may have violated the FAA's alcohol rules, and if there was insufficient evidence to establish the violation without the test, the FAA could take no action against the

crewmember. Requiring crewmembers to submit to a test to determine the blood alcohol level, given by a state or local law enforcement officer, would be an effective method of obtaining additional evidence regarding suspected violations of the alcohol rules. The knowledge that such a test may be given also would act as a deterrent to individuals who wish to drink and fly.

The FAA expects that adopting a rule such as the one proposed in this notice would benefit the local communities whose law enforcement officers would be administering the breath tests. Both the FAA and these communities have an interest in protecting its citizens who use the airspace, as well as persons and property on the ground. During the comment period the FAA will seek comments and suggestions from a number of local police organizations. If the rule is adopted, the FAA will work closely with local police in a cooperative effort to ensure the effectiveness of the rule.

These proposed amendments are similar to those contained in Notice No. 81-9. However, since this rule would involve state and local communities, the FAA has determined this supplemental notice should be issued to afford these communities and other interested persons an opportunity to comment on these provisions.

Supplemental Proposal

The FAA proposes to require a crewmember of a civil aircraft to submit to testing to indicate the percentage by weight of alcohol in the blood, on the request of a law enforcement officer who is authorized under state or local law to conduct or otherwise obtain such a test, if there is a reasonable basis to believe that the crewmember may have violated the alcohol rules, including being under the influence of alcohol. The proposal also would make clear that failure to submit to the test could result in denial of a new certificate or a rating or suspension or revocation of a certificate or rating. In addition, a civil penalty action could be taken against the crewmember. Flight attendants, who do not hold airman certificates, would be subject to civil penalty action. The proposal would continue the new rule that crewmembers provide or release copies of medical test results which indicate blood alcohol levels.

The law officer conducting or obtaining the test would be acting under his or her own state or local authority. The Administrator does not propose to grant additional authority to state and local law enforcement officers. The proposed rule merely would require the crewmember to cooperate with an

otherwise lawful investigation by a law enforcement officer. This is similar to § 61.3(h) which, in part, requires a pilot to present his or her airman certificate for inspection upon request of a Federal, state, or local law enforcement officer.

The test could be a chemical test of the breath or any other test for alcohol conducted by the officer or by another person in accordance with the laws and procedures governing the officer. For instance, an officer might investigate an incident and come to the conclusion that a pilot may have operated an aircraft while under the influence of alcohol. Alternatively, an FAA inspector might observe a pilot to be apparently under the influence of alcohol and call this to the attention of an officer. The officer might then arrange for a breath test or blood test to be conducted pursuant to state or local law. The pilot, of course, would be (and currently is) subject to the state or local law regarding submission to the test. Under this proposal the pilot also would be required to submit to the test or face FAA Enforcement action.

In the past, the FAA generally has relied on observations by witnesses to enforce the alcohol rules. Witnesses have testified to indicia of alcohol observed in crewmembers such as stumbling, slurred speech, odor of alcohol, or difficulty with balance. The FAA has had success in such enforcement actions when the enforcement tribunal found the witnesses' testimony to be credible. The use of blood alcohol tests enable the FAA to take successful enforcement action in those cases in which witness observations alone may not provide sufficient evidence. The proposed rule would make blood alcohol tests more easily obtainable and would permit the FAA to take enforcement action against crewmembers who do not submit to a test under the conditions described. The FAA anticipates, however, that if the proposed rule were adopted, there would still be cases in which only witness observations were available and no blood alcohol tests were done. In such case, the FAA would proceed with enforcement action as it does now.

Economic Evaluation

The proposed rules would be enforcement tools. They would have no economic impact on crewmembers who are not suspected of failing to comply with the alcohol rules. The impact on those who would be requested to submit to an alcohol test would consist of a brief period of time spent undergoing the test.

A regulatory evaluation was prepared for Notice 81-9. The cost to the crewmember of complying with the proposal relating to breath tests would have been essentially the same as for the proposal contained in this supplemental notice. The regulatory evaluation for Notice 81-9 made the same conclusions regarding the economic impact as are made for this proposal.

Conclusion

Compliance with this proposal could impose only a minimal cost or economic burden on airmen. Accordingly, it has been determined that this is not a major regulation under Executive Order 12291. However, the proposal is significant under the Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 28, 1979). Since these proposals could have only a minor cost impact and would apply to individuals rather than small entities, I certify that under the criteria of the Regulatory Flexibility Act, these proposals, if adopted, would not have a significant economic impact on a substantial number of small entities. Because the cost of these proposals is so minimal, no regulatory evaluation has been prepared.

List of Subjects

14 CFR Part 61

Airmen, Aircraft pilots, Pilots, Alcohol and alcoholic beverages, Air safety, Safety, Aviation safety.

14 CFR Part 63

Airmen, Air safety, Safety, Aviation safety.

14 CFR Part 91

Aviation safety, Safety, Aircraft pilots, Liquor, Pilots.

The Proposed Rule

Accordingly, it is proposed to revise Parts 61, 63, and 91 of the Federal Aviation Regulations (14 CFR Parts 61, 63, and 91) as follows:

PART 61—CERTIFICATION: PILOTS AND FLIGHT INSTRUCTORS

1. By revising § 61.16 to read as follows:

§ 61.16 Refusal to submit to an alcohol test or to furnish test results.

(a) No person who refuses to submit to a test to indicate the percentage by weight of alcohol in the blood, when requested by a law enforcement officer in accordance with § 91.11(c) of this chapter, or who refuses to furnish or authorize the release of the results of a test already taken, when those results are requested by the Administrator in accordance with § 91.11 (c) or (d) of this chapter, is eligible for any certificate or rating under this Part for a period of 1 year after the date of that refusal.

(b) A refusal to submit to a test given by a law enforcement officer to indicate the percentage by weight of alcohol in the blood, when requested in accordance with § 91.11(c) of this chapter, or a refusal to furnish or authorize the release of test results, when requested by the Administrator in accordance with § 91.11 (c) or (d) of this chapter, is grounds for suspension or revocation of any certificate or rating issued under this Part.

PART 63—CERTIFICATION: CREWMEMBERS OTHER THAN PILOTS

2. By revising § 63.12a to read as follows:

§ 63.12a Refusal to submit to an alcohol test or to furnish test results.

(a) No person who refuses to submit to a test to indicate the percentage by weight of alcohol in the blood, when requested by a law enforcement officer in accordance with § 91.11(c) of this chapter, or who refuses to furnish or authorize the release of the results of a test already taken, when those results are requested by the Administrator in accordance with § 91.11 (c) or (d) of this chapter, is eligible for any certificate or

rating under this Part for a period of 1 year after the date of that refusal.

(b) A refusal to submit to a test given by a law enforcement officer to indicate the percentage by weight of alcohol in the blood, when requested in accordance with § 91.11(c) of this chapter, or a refusal to furnish or authorize the release of test results, when requested by the Administrator in accordance with § 91.11 (c) or (d) of this chapter, is grounds for suspension or revocation of any certificate or rating issued under this Part.

PART 91—GENERAL OPERATING AND FLIGHT RULES

3. By revising § 91.11(c) to read as follows:

§ 91.11 Alcohol or drugs.

(c) Whenever there is a reasonable basis to believe that a person who acted or attempted to act as a crewmember of a civil aircraft may have committed an act which is in violation of paragraph (a)(1), (a)(2), or (a)(4) of this section, that person shall do the following:

(1) On request of any law enforcement officer, submit to a test which the officer is authorized to obtain under state or local law to indicate the percentage by weight of alcohol in the blood.

(2) On request of the Administrator, furnish the Administrator, or authorize any clinic, hospital, doctor, or other person to release to the Administrator, the results of each test taken within 4 hours after acting or attempting to act as a crewmember that indicates percentage by weight of alcohol in the blood.

(Secs. 302, 313(a), 601, 602, and 609 of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1342, 1354(a), 1421, 1422, and 1429), and 49 U.S.C. 106(g) (Revised, Pub. L. 97-449; January 12, 1983))

Issued in Washington, D.C., on December 13, 1984.

Donald D. Engin,

Administrator.

[FR Doc. 85-9243 Filed 4-12-85; 4:05 pm]

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Registered Federal Reporter

Wednesday
April 17, 1985

Part V

Environmental Protection Agency

40 CFR Part 61

National Emission Standards for
Hazardous Air Pollutants; Standard for
Radon-222 Emissions From Underground
Uranium Mines; Final Rule

**ENVIRONMENTAL PROTECTION
AGENCY****40 CFR Part 61**

(AD-FRL-2814-7)

**National Emission Standards for
Hazardous Air Pollutants; Standard for
Radon-222 Emissions from
Underground Uranium Mines****AGENCY:** Environmental Protection
Agency (EPA).**ACTION:** Final rule.

SUMMARY: The U.S. District Court for the Northern District of California has ordered EPA to promulgate a final standard for airborne emissions of radionuclides from underground uranium mines by April 10, 1985, or to find that radionuclides are clearly not a hazardous air pollutant. This final rule is designed to limit exposure of the public to radon-222 emissions from underground uranium mines.

EFFECTIVE DATE: This final rule is effective on April 17, 1985. For existing sources, the standards shall not apply until 90 days after the effective date.

ADDRESSES: The rulemaking record is contained in Docket No. A-79-11. This docket is available for public inspection between 8:00 a.m. and 4:00 p.m., Monday through Friday, at EPA's Central Docket Section, West Tower Lobby, Gallery One, Waterside Mall, 401 M Street, SW., Washington, D.C. 20460. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Paul J. Magno, Environmental Standards Branch (ANR-460), Criteria and Standards Division, Office of Radiation Programs, U.S. Environmental Protection Agency, Washington, D.C. 20460, (703) 557-0704.

SUPPLEMENTARY INFORMATION:**I. Supporting Documents**

A final Background Information Document has been prepared and single copies may be obtained by writing the Program Management Office, Office of Radiation Programs (ANR-458), U.S. Environmental Protection Agency, Washington, D.C. 20460, or by calling (703) 557-9351. Please refer to "Background Information Document: Standard for Radon-222 Emissions to Air from Underground Uranium Mines." This document contains a description of the uranium mining industry, projected exposures and risks to nearby individuals and to the general population, and descriptions of radon-222 control methods.

**II. History of Uranium Mine Standard
Development**

On April 6, 1983, the Agency announced in the *Federal Register* a proposed standard to limit radon-222 emissions from underground uranium mines (48 FR 15076, April 6, 1983). This proposed standard was withdrawn by the Administrator in October 1984 on the basis that it did not meet the legal requirements of section 112 of the Clean Air Act (49 FR 43906, October 31, 1984). The Agency has also received additional technical information that suggested that bulkheads and other techniques to control radon-222 emissions may be feasible. The withdrawal action was taken in response to an order by the U.S. District Court for the Northern District of California compelling EPA, by October 23, 1984, to promulgate standards or make a finding that radionuclides are not a hazardous air pollutant within the context of section 112 of the Clean Air Act.

On December 11, 1984, the Court found the Administrator and the Agency in contempt of its previous order and directed the following remedial actions:

1. (a) Issue within 30 days of the date of the order final radionuclide emission standards for Department of Energy (DOE) facilities, Nuclear Regulatory Commission (NRC)-licensed and non-DOE Federal facilities, and elemental phosphorous plants, and

- (b) Issue within 120 days of the date of the order final radionuclide emission standards for underground uranium mines; or

2. Make a finding based on the information presented at hearings during the rulemaking, that radionuclides are clearly not a hazardous air pollutant.

The Agency promulgated final standards for DOE facilities, NRC-licensed and non-DOE Federal facilities, and elemental phosphorous plants on January 17, 1985 (50 CFR 5190, February 6, 1985), although it is noted that the Agency intends to pursue its pending appeal of this portion of the District Court's order. A complete history of the events leading to this action is contained in the *Federal Register* notice announcing the final standards.

On February 21, 1985, EPA published in the *Federal Register* a proposed work practice standard to limit radon-222 emissions from underground uranium mines (50 FR 7280, February 21, 1985). The proposed work practice standard required bulkheading abandoned and temporarily abandoned mine areas to reduce the amount of radon-222 emitted to the above ground air from the mines. Following publication of the proposed standard, EPA conducted a public

hearing in Albuquerque, New Mexico, on February 27 and 28, 1985. The public record was held open until March 28, 1985, to allow for written comments to be received, however, EPA asked that comments be submitted as soon as possible to allow the Agency maximum time to consider them. A significant number of comments were received by the Agency on the last day of the public comment period. The short time between the submission of all the public comments and the Court deadline for promulgating the rule allowed the Agency a limited opportunity to respond to all of the comments. The Agency has generally reviewed all of the comments and is responding to the major issues and points in this notice. The Agency did not receive any comments or information subsequent to the public hearing that warranted a dramatic alteration in its approach. Changes made to the final rule in response to points raised in oral and written comments are discussed in the following sections.

III. Summary of the Final Rule

This rule is designed to limit exposure of the public to radon-222 emissions from underground uranium mines. The final rule differs in a number of ways from the proposed rule because of changes the Agency has made in response to public comments. This section provides an overview of the final rule; changes from the proposed rule are noted. The rationale for each of these changes is provided in the following sections of this notice. Both the *Federal Register* notice describing the proposed rule (50 FR 7280) and the Background Information Document provide further information on those portions of the final rule that have not changed from proposal.

The final rule:

- (1) Applies to an owner or operator of an active underground uranium mine which has mined or will mine over 100,000 tons of ore during the life of the mine. A mine which will have or has had an annual ore production rate greater than 10,000 tons must also comply with the standard, unless it can be demonstrated that the mine will not exceed a cumulative ore production of 100,000 tons. (The proposed standard did not include the exclusion for mines producing greater than 10,000 tons of ore per year, but with an expected cumulative ore production of less than 100,000 tons.)

- (2) Requires that an owner or operator of an underground uranium mine install and maintain bulkheads to isolate all abandoned and temporarily abandoned

areas of the mine. If a negative pressure behind the bulkhead is necessary, then a maximum of 20 percent of the total volume of air contained in the sealed area may be exhausted per day. A mine owner or operator may apply for an alternative standard, if necessary to protect miner health and safety. (The proposed standard did not provide a mine owner or operator the opportunity to seek an alternative standard based on miner health and safety.)

(3) Requires quarterly inspections of bulkheads and quarterly measurements of the air exhaust rate for those bulkheaded areas maintained under negative pressure. (The proposed standard required monthly bulkhead inspections and monthly measurements of the air exhaust rate.)

(4) Requires that any necessary repairs to bulkheads be made within ten days. (The proposed standard required that bulkhead repairs be made within three days.)

(5) Requires an annual certification of compliance with the standard. (The proposed standard required an annual report summarizing the number and volumes of abandoned and temporarily abandoned mine areas; the number of bulkheads maintained; and an estimate of the average amount of air in the bulkheaded areas which is exhausted per day.)

In establishing its final standard for radon-222 emissions from underground uranium mines, EPA had to weigh protection of the public health with protection of the mine personnel. The Agency believes that this standard will not significantly increase the radon decay product concentrations to which the underground miners are exposed. EPA intends to work with the Mine Safety and Health Administration to ensure that implementation of this standard will not jeopardize miner health and safety.

This final standard requires a work practice, i.e., bulkheading, which is commonly used throughout the uranium mining industry to direct fresh air to the working areas of the mine. However, the application of bulkheads to seal worked-out areas for reducing radon-222 emissions from underground mines has not been thoroughly tested. Because of the limited time allowed by the Court order, EPA was unable to completely evaluate bulkheading or other potentially applicable work practices. EPA intends, once this standard is promulgated, to begin long-term studies, as necessary, to evaluate the efficiency of bulkheads and other techniques for decreasing radon-222 emissions from underground uranium mines.

IV. Background Information

A. Industry Description

Uranium mining involves the handling of large quantities of ore containing uranium-238 and its decay products. The concentrations of these radionuclides in ore may be up to one thousand times greater than their concentration in other rocks and soils. Uranium mining is predominantly carried out by either surface (open pit) or underground mining methods, depending on the depth, ore grade, and thickness of the ore deposit. Underground uranium mines have generally accounted for about thirty to forty percent of the uranium oxide production in the United States.

The underground uranium mining industry has undergone substantial changes in recent years due to declining demand and competition from low-cost foreign sources. The total number of underground mines fell from a peak of 300 in 1980 to only six by March 1985. Currently, all underground uranium mining in the United States takes place in the western United States. In general, the mines presently operating are located in relatively remote areas of New Mexico, Colorado, Utah, and Arizona. Further reduction in the number of operating mines is expected during 1985.

Production of uranium oxide by underground mines peaked at 9600 tons in 1980; the industry estimates that uranium oxide production in 1985 will be approximately 1300 tons. EPA estimates that, based on Department of Energy projections of uranium oxide demand, the industry will produce close to 3100 tons of uranium oxide in 1985. The Agency has taken into account both its own and industry projections of uranium oxide production in assessing the risk associated with radon-222 emissions from underground uranium mines.

B. Radionuclide Emissions from Underground Uranium Mines

Radon-222 is the most significant radionuclide emitted to the above ground air from underground uranium mining activities. Radon-222 is released from underground mines in relatively high concentrations through mine ventilation systems. Results of measurement studies made at 27 large underground uranium mines during 1978-1979 showed that radon-222 emissions to air from individual mines ranged from 200 to 30,000 curies per year (Ci/y) with an average of 5600 Ci/y. These mines accounted for approximately 85 percent of the uranium oxide produced by all underground mines in 1978. Based on these

measurement results, the total radon-222 emissions from all underground uranium mines in 1978 were about 240,000 curies. EPA estimates emissions of radon-222 will be about 80,000 curies in 1985, based on DOE projections of uranium oxide demand. Using industry projections of uranium oxide production, emissions of radon-222 will be about 35,000 curies in 1985.

It is important to note that the rate of radon-222 emissions from underground uranium mines is highly variable, depending upon a number of interrelated factors, including mine ventilation rates, ore grade, exposed surface area, mining practices, and geologic formations. In addition, these mines can differ significantly in their configuration. The wide diversity among mines makes it difficult to predict emission rates of the effectiveness of emission reduction practices at any given mine.

C. Estimates of Exposure and Risk

The risk associated with emissions from underground uranium mines is primarily due to the short half-life decay products of radon-222. Radon-222 decays into a series of short-lived radionuclides. These decay products readily attach to dust particles that may become lodged in the lung when inhaled, thus irradiating the surrounding cells.

Individuals living near an underground uranium mine can be exposed to increased levels of radon decay products of a result of radon-222 being released from the mine ventilation shafts. Radon-222 contained in the outside atmosphere enters homes and other structures built near the mine exhaust vents through doors and windows, as well as other openings in the structure. The occupants of these structures may then be exposed to potentially harmful levels of radon-222 decay products.

The increased lifetime risk of fatal lung cancer to individuals living near large underground uranium mines from the mine emissions is estimated to range from about one in one thousand to one in one hundred. The potential exists for an increased risk as great as one in ten in some situations, e.g. a person living very close to several horizontal mine vents or in areas influenced by multiple mine emissions. EPA estimates the increase in the fatal cancer risk to the total population from radon-222 emissions from underground uranium mines to have been about one to four fatal cancer cases per year during the peak production period of 1978-1982. With the decrease in the number of operating underground uranium mines, the increased risk of fatal cancer is

expected to range from four-tenths to two fatal cancer cases per year during the period 1983-1990. Based on industry production projections, the increased risk of fatal cancer in 1985 is estimated to range from three-tenths to six-tenths of a fatal cancer case.

Exposure levels are derived from emission estimates, dispersion modelling, and population data. For any given emission rate, dispersion models predict concentrations at different distances from the emission source. By combining those estimated concentrations with census data on population densities, the number of people exposed at different concentrations can be estimated. However, several factors suggest that actual exposure levels to nearby individuals will be lower than those estimated. In estimating exposure, exposed individuals are assumed to be subjected to the emissions for 24 hours every day for 70 years (roughly a lifetime). This does not consider, for instance, the fact that most people in their daily routines move in and out of the specific areas where the concentrations are the highest. In the case of underground uranium mines, the average life of a mine ranges from 10-20 years, although some mines have operated for almost thirty years.

Several commenters expressed concern about the Agency's risk estimates and the need for regulation of this source category. Three specific points were addressed: (1) The risk from radon-222 emissions from underground uranium mines is not of the magnitude necessary to warrant regulation under section 112 of the Clean Air Act, therefore, the Agency should "delist" radionuclides from regulatory consideration under section 112; (2) little evidence exists to indicate health effects result below total exposure levels of one hundred working level months; and (3) the decline in the uranium mining industry significantly deflates the already overestimated health risks presented by the Agency.

The Agency has considered these interrelated issues and has concluded that the "listing" of radionuclides as a hazardous air pollutant within the context of section 112 of the Clean Air Act was entirely appropriate. Section 112 of the Clean Air Act requires the Administrator to review all available relevant information and determine whether emissions of radioactive pollutants to the ambient air will cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health. If the Administrator concludes that emissions of

radionuclides meets this criterion, he must list and regulate radionuclides under section 108(a)(1), section 111(b)(1)(A), or, if he finds that radionuclide emissions cause, or contribute to, air pollution which may reasonably be anticipated to result in an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness, section 112(b)(1)(A) of the Act, or take any combination of such actions.

The Agency believes that emission of radionuclides from underground uranium mines meets the general criterion for an affirmative finding under section 112. Further, the Agency believes that emissions of radionuclides from underground uranium mines meet the criterion for regulation under section 112 of the Act. Specifically, there is no doubt that radionuclides are carcinogenic, mutagenic, and teratogenic. This conclusion is based on extensive scientific evidence derived from studies of both human and animal populations. Underground uranium mines emit radon-222 and its decay products in large quantities. Many studies in the United States and other countries of miners exposed to radon-222 gas and its decay products have presented highly convincing evidence that exposure to these radionuclides causes or contributes to lung cancer.

Estimating the magnitude of the increased risk of developing lung cancer to individuals living near underground uranium mines and to the general population living downwind of the mines is complicated and uncertain. Epidemiological data exist that demonstrate a relationship between cumulative exposure to radon-222 decay products and increased lung cancer risk. There is substantial evidence that relates cumulative exposure of greater than approximately one hundred working level months (WLM) to an increased risk of lung cancer. While some studies based on human data indicate that exposure to less than one hundred WLM increases the risk of lung cancer, these data are less conclusive. There are considerable difficulties in demonstrating increased risk at a statistical confidence level of 95 percent for exposure at relatively low concentrations of radon-222 decay products because a very large study population is needed. It is often difficult to identify appropriate study populations large enough to conduct such studies to examine risks at very low levels.

Cumulative exposure to a person living near an underground uranium mine due to mine emissions is not likely to

exceed twenty WLM over his lifetime. (This assumes exposure to about 0.3 WLM per year for about 70 years.) While this is considerably below cumulative exposures at which we have substantial human evidence relating to lung cancer, the Agency believes that such exposure is not below a threshold at which no significant health damage could occur. Radiation protection organizations, national authorities, and prestigious scientific committees worldwide use the assumption that there is no threshold below which exposure to radiation does not pose some risk to health. For example, the National Academy of Sciences' Committee on Biological Effects of Ionizing Radiation recommended that health risks from low level exposures to alpha radiation, such as that produced by radon-222 decay products, be estimated by extrapolating risks from higher exposures using a linear nonthreshold model. Therefore, extrapolations from the available miner epidemiological data have been used by EPA to estimate risk at exposure levels caused by radon-222 emissions from underground uranium mines.

Section 112 requires not only a finding that the pollutant at issue is hazardous in the abstract, but also that it poses a public health risk in its form as an air pollutant. By coupling information on radon-222 emissions from mines, air transport models, and health risk models, the Agency estimates that the increased lifetime risk to individuals living near an underground uranium mine could be about one chance in one hundred of incurring lung cancer because of the emissions. For perspective, the current average lifetime risk of developing lung cancer in the United States is about three in one hundred. Clearly, radon-222 emissions from underground uranium mines may significantly affect a nearby individual's lung cancer risk. In addition, several fatal cancers per year may result in the total population due to these emissions, depending on the quantity of ore production each year.

In making its health risk estimates, EPA evaluated the air pollution risk of radon-222 emissions from underground uranium mines based on the magnitude of both current and potential emissions, on observed and estimated ambient radon-222 concentrations, on the proximity of large populations to emitting sources, on estimates of health risk to exposed populations, and on considerations of uncertainties associated with risk estimates. The assessments and the assumptions used to estimate lifetime risks are described

in more detail in the Background Information Document. In addition, a study conducted during the period 1978-1980 by the New Mexico Environmental Improvement Division clearly demonstrated elevated concentrations of radon-222 in air near underground uranium mines in the Ambrosia Lake area of New Mexico.

The Agency believes that there is sufficient evidence to conclude that potential increases in the risk of lung cancer to individuals and the general population due to radon-222 emissions from underground uranium mines may be anticipated to endanger public health and may be anticipated to result in an increase in mortality. Consequently, regulation of this source category under sections 122 and 112 is appropriate.

The Agency also believes that a standard limiting exposure of the public to radon-222 emissions from underground uranium mines is warranted, despite the low number of operating mines. The Congress intended in section 112 that EPA act by a date certain to protect the health of current and future generations from emissions of pollutants that it determined to be hazardous. This is still the Agency's responsibility even if, as some might argue, current production levels have reduced risk. Demand for uranium oxide may increase. In the peak production years, the increase in an individual's lifetime risk of lung cancer from radon-222 emissions from underground uranium mines may have been as high as one in ten to those individuals exposed to multiple mine vents and increased population risk may have been as high as four fatal cancers per year. Without a standard such as this, risks to the public, both nationally and regionally, would increase if demand and production of uranium oxide increases.

Section 122 of the Clean Air Act allows EPA to use section 108(a)(1) or section 111(b)(1)(A) in combination with section 112 if the Administrator determines it to be suitable. At this time, the Agency has chosen to regulate radon-222 emissions from underground uranium mines only under section 112. Current information suggests that regulation under these other sections would not significantly improve control of radon-222 emissions from underground uranium mines. Should new information alter this conclusion, the Agency may reconsider its approach to regulating underground uranium mines.

D. Control Technology

Since radon-222 is a noble gas and the volume of air discharged through mine

vents is very large, at present there is no practical method to remove radon-222 from the mine exhaust air. Application of conventional methods to remove radon-222 from mine ventilation air at the volumes of air which must be treated would require large, complex, unproven systems that would be extremely costly, i.e., adding at least \$18 to \$44 to the total cost of producing a pound of uranium oxide. (Currently, the average cost to produce one pound of uranium oxide from an underground mine is about \$35.) The industry now employs a number of practices to reduce radon decay product concentrations in the mine to meet occupational exposure standards established by the Mine Safety and Health Administration. These practices, which include bulkheading abandoned areas of the mine, have the effect of reducing radon-222 emissions to the above ground air.

At EPA's request, the U.S. Bureau of Mines evaluated the cost and effectiveness of various work practices in reducing radon-222 emissions. The results of the study suggested that bulkheading could reduce emissions of radon-222 by about 10 to 60 percent. Based on the peak production year, the amount of population risk reduction achieved could range from two-tenths to two fatal cancer cases per year. Estimates for 1983, the most recent year for which actual production data are available, range from one-tenth to one fatal case per year. In 1985, based on industry production projections, the amount of population risk reduction is estimated to range from three-hundredths to three-tenths of a fatal cancer case per year. These are only rough estimates based on installing bulkheads in a presently uncontrolled mine (i.e., a mine with no bulkheads).

Information presented during the public comment period indicates that uncertainty exists as to the amount of radon-222 emission reduction achievable by bulkheading in existing mines. This is in part due to the complexity in the configuration of these mines, past mining practices, and consideration of miner health and safety. The extent to which additional bulkheads can be installed to further reduce radon-222 emissions can only be determined on a case-by-case basis.

Comments from the industry supported EPA's conclusion that bulkheading is the only practical work practice that could be used to reduce radon-222 emissions to the above ground air. Other methods, such as rock sealants and backfilling, may also reduce radon-222 emissions; however, they are not thought to be as cost-effective or practical as bulkheading.

After considering all the available information on control technologies, the Agency has concluded that bulkheading abandoned and temporarily abandoned mine areas to seal the radon-222 underground is a practical method of reducing radon-222 emissions from the mines to the above ground air.

E. Bulkheading

Bulkheads are air-restraining barriers used to direct air and prevent contamination or leakage of fresh air going to the active areas of the mine. This practice reduces the radon-222 and decay product concentrations in the active areas of the mine and also reduces the volumes of air needed to ventilate the mine. Bulkheading practices vary among mines; some mines make extensive use of bulkheads, while others use few bulkheads.

A secondary benefit of bulkheading inactive areas of a mine is that radon-222 emanating from the rock surface will decay in the isolated area. Hence, this technique can also reduce radon-222 emissions to the above ground air. The amount of emission reduction achieved is dependent on the volume of inactive areas that are sealed with bulkheads and the amount of air removed from these areas.

The radon-222 in the sealed area behind a bulkhead will build up to relatively high concentrations (i.e., tens of thousands of picocuries per liter), so it is necessary to prevent or minimize any leakage of air from behind the bulkhead into the working areas of the mine. Any such leakage could significantly increase the radon decay product concentration to which the miners are exposed. Therefore, it is often necessary to maintain a negative differential pressure behind the bulkhead to prevent leakage of contaminated air into the active mine airways. This negative pressure is achieved by bleeding (i.e., removing) air from behind the bulkhead into an exhaust airway. For bulkheads to be effective in reducing radon-222 emissions to above ground air, however, the amount of air bleed necessary to maintain an adequate pressure differential across the bulkhead must be minimized. The smaller the air bleed, the more radon-222 will decay behind the bulkhead rather than being released above ground.

V. The Final Standard

The complexity in the structure of underground uranium mines, the uncertainties in the effectiveness of in-mine control techniques, and the lack of suitable control technology to capture

radon-222 being vented from the mines cause the Agency to conclude that an emission standard is not feasible. The effectiveness of techniques for radon-222 emission reduction is not known. This means that predictable, hence measurable, steps toward compliance with a generic emission standard can not be identified. In this instance, section 112(e)(1) of the Clean Air Act allows the Agency to prescribe a work practice or other type standard to control the pollutant. This standard, therefore, requires that bulkheading be used to reduce emissions of radon-222 from the mines. A more thorough description of the individual components of the standard and the rationale follows.

A. Applicability

The standard is applicable to an owner or operator of an active underground uranium mine which has mined or will mine over 100,000 tons of ore during the life of the mine. Mines which have had or will have an annual ore production rate greater than 10,000 tons must also comply with the standard, unless it can be demonstrated that the mine will not exceed a cumulative ore production of 100,000 tons.

An evaluation of radon-222 emissions from underground mines operating in 1978 as a function of cumulative ore production showed that 188 mines or 75 percent of all the mines had a cumulative ore production of less than 100,000 tons. The estimated radon-222 emission rate from each of these mines was less than 200 curies per year, and as a group they contributed only five percent of the total curies emitted by all underground uranium mines in 1978. Since the radon-222 emissions from underground uranium mines with cumulative ore productions of less than 100,000 tons are small, the Agency has concluded that these mines need not be covered by the standard.

One commenter suggested that the Agency eliminate the 100,000 tons of cumulative ore production criterion; another suggested increasing it to 500,000 tons. The Agency has decided to maintain the cutoff at 100,000 tons cumulative ore production in order to include older mines which are likely to have significant emissions of radon-222 due to the large amount of surface area emanating from this radionuclide. EPA chose the 100,000 tons cutoff based on the results of the study discussed previously. Ninety-five percent of the radon-222 emissions from underground uranium mines in 1978 were from mines with a cumulative ore production of 100,000 tons or greater.

The annual ore production value of 10,000 tons was selected to ensure that mines which are likely to exceed 100,000 tons of cumulative ore production will be covered by the standard on the effective date of the standard or at the time a new mine begins production. Evidence exists which indicates that mines with an annual ore production rate of 10,000 tons or greater are likely to mine 100,000 tons of ore during their lifetime. The standard allows a mine owner or operator to demonstrate that the mine will not exceed 100,000 tons of cumulative ore production, and, thus, not be subject to the standard.

B. Bulkheading Requirements

Comments generally agreed with the Agency's conclusion that bulkheading is a practical method to reduce radon-222 emissions to the above ground air from underground uranium mines. One commenter suggested that backfilling abandoned areas with mill tailings might also yield some reduction in radon-222 emissions. This final rule, while prescribing bulkheading requirements, allows a mine owner or operator the flexibility to use other methods of radon-222 control, such as backfilling, upon approval by the Administrator.

The standard requires that an owner or operator of an underground uranium mine install and maintain reliable bulkheads to isolate all abandoned and temporarily abandoned areas of the mine. If a negative pressure behind the bulkhead is necessary, then a maximum of 20 percent of the total volume of air contained in the sealed area may be exhausted per day. Many commenters expressed concern about limiting the amount of air which can be drawn from behind a bulkhead to achieve a negative pressure. In some situations, this practice may result in an increase in radon-222 decay product concentrations in the working areas of the mine. In addition, it may be difficult or impractical to measure the amount of air removed from a bulkheaded area. Commenters requested that EPA eliminate the limitation on the amount of air which can be drawn from behind a bulkhead.

EPA does not intend to promulgate a standard which increases miner exposure to radon decay products. However, a limit on the rate of removal of air from behind a bulkhead is necessary to provide sufficient residence time for the radon-222 in the isolated area to decay. A 20 percent per day value was selected as a balance between the need to minimize the rate of air removed from the isolated area and the need to maintain adequate

negative pressure to prevent radon-222 from leaking into active mine airways and increasing the radon-222 decay product exposure to the miners. Our analysis estimates that, when the exhaust rate is maintained at 20 percent, approximately 50 percent of the radon-222 trapped behind the bulkhead will decay and thus will not be vented to the above ground air. Reducing the air exhaust rate to 10 percent per day would result in a radon-222 reduction of approximately 85 percent, but we do not have enough information at the present time to know if this will provide adequate protection of the miners.

Industry representatives explained to EPA that the ventilation routes in many existing mines are designed so that air from active areas is exhausted through the inactive areas of the mine. As fresh air is brought into the mine, care is taken to prevent its contamination with radon-222 decay products prior to its reaching the active work areas. Bulkheads are constructed primarily to seal unused portions of the mine adjacent to the intake airways to prevent fresh air from escaping or becoming contaminated. In current practice, the mined-out areas become exhaust airways as the mining process retreats towards intake airways. Therefore, a major portion of the mined-out areas must be kept open to allow passage of air to the exhaust vents. In the case of one mine, ninety-six percent of the mine is inactive areas which serve as exhaust routes for contaminated air. Bulkheading is unlikely to be practical in these inactive areas unless major changes are made in the ventilation schemes of the mines, such as constructing new ventilation shafts. In addition, entering these areas to construct bulkheads may jeopardize the health and safety of the miners because of high concentrations of radon-222 decay products and ground instability. Commenters requested that EPA exempt from the requirements of the standard inaccessible areas and those areas which serve as ventilation passageways.

After hearing the comments discussed above and reviewing the configurations of several existing mines, the Agency has decided to include a provision in the standard to allow mine owners or operators to apply for an alternative standard, if necessary to protect miner health and safety. By including this option, rather than simply eliminating the air exhaust rate limitation and exempting certain areas of a mine based on their function, the Agency hopes to provide incentive to design new mines in such a way as to limit radon-222 emissions to above ground air. Industry

representatives acknowledged at the public hearing that a new mine could be designed to limit the number of inactive areas used as exhaust routes and to maximize the amount of area which could be bulkheaded.

C. Reporting and Recordkeeping

The Agency received numerous comments on the reporting and recordkeeping requirements of the proposed rule. In an effort to minimize the amount of additional time personnel must spend in a mine to meet its standard, EPA has decreased the number and frequency of the reporting and recordkeeping requirements imposed by the final rule. The revisions are as follows:

(1) *Inspections* The frequency of inspections of bulkhead conditions and measurements of the air exhaust rate for those bulkheaded areas maintained under negative pressure has been reduced from monthly to quarterly. Records of these inspections must be kept at the mine and be available for review by EPA.

(2) *Bulkhead repairs* The length of time allowed to make necessary repairs to bulkheads has been lengthened from three days to ten days. This change allows mine operators greater flexibility in managing their work force.

(3) *Annual report* The amount of information that is required to be submitted annually to EPA has been reduced. A mine owner or operator must submit an annual certification of compliance with the final rule. Records of the number and volumes of abandoned and temporarily abandoned areas, the number of bulkheads maintained, and an estimate of the average amount of air in the bulkheaded areas which is exhausted per day must be kept at the mine. Annual submission of this information was required in the proposed rule.

D. Definitions

Based on public comments, several definitions were modified in the final rule.

(1) The definitions of "abandoned mine area" and "temporarily abandoned mine area" have been modified to exempt not only those areas which function as escapeways, but also areas formerly used as lunchrooms, shops, and transformer or pumping stations. These areas have been exempted because they are nonproduction areas which have low radon-222 emanation rates. In addition, the exemption for ventilation passageways is now limited to ventilation passageways designed to minimize the distance to vents and no longer allows large mined-out areas to

function as ventilation passageways. Exempting these areas from the bulkheading requirements would limit the amount of radon-222 emission reduction achieved by the standard. In particular, the Agency wants to ensure that new mines are designed to avoid this practice.

(2) The definition of "active mine" has been modified to include only those mines in which ore or waste material are currently removed by conventional methods. This change was made to exempt slope leaching which does not require workers to enter the mine, except in rare instances.

(3) A definition of "work" has been added to clarify the intent of the standard. For the purposes of the standard, "work" means mining activity done in the usual and ordinary course of developing and operating an underground uranium mine.

VI. Effects of the Final Standard

The deadline imposed by the District Court requires the Agency to promulgate a standard for underground uranium mines based only on the currently available technical information. An accurate estimate of the radon-222 emission reduction achieved by the standard cannot be made with existing information. The bulkheading requirements of the rule are expected to result in a decline in individual and population risks as emissions of radon-222 are reduced. Though the maximum individual risk in particular has not been reduced to levels EPA has selected in other standards, the very short time available for developing this rule, and the possibility that any reduction in risk to the general population might be achievable only by increasing the risk to miners, make it impossible to impose further controls at this time. EPA will continue to investigate this matter to determine the possibility of tightening controls in the future. Since most mines already install bulkheads to reduce ventilation requirements, it is not possible to estimate the incremental radon-222 emission reduction achieved by the standard. EPA intends to gather additional information on the extent and nature of existing bulkheading practices and the efficacy of the standards.

Further, the cost of the standard can only be generally estimated. Because we do not know the extent of present bulkheading practices or what additional bulkheading is practical, we cannot precisely estimate the cost to meet this standard. Limited modelling analysis shows that the cost of installing bulkheads ranges from about one to five cents per pound of uranium oxide produced. Based on the peak production

year, the total cost to the industry could range from \$200,000 to \$1,000,000 per year. Cost to the total industry in the first year is estimated to range from \$30,000 to \$150,000. Even if these costs are significantly underestimated for some mines, it is highly unlikely that the cost of the standard would exceed one percent of the cost of producing uranium oxide.

EPA intends to begin long-term studies, as necessary, to more thoroughly determine the efficiency and cost of bulkheads and other techniques for decreasing radon-222 emissions to the above ground air from underground uranium mines. Such a study would examine ways to reduce air emissions further without increasing potential exposure to miners. The results of a study may lead to some modification of the Agency's standard.

VII. Miscellaneous

A. Docket

The docket is an organized and complete file of all information considered by EPA in the development of this standard. The docket allows interested persons to identify and locate documents so they can effectively participate in the rulemaking process. It also serves as the record for judicial review. Transcripts of the hearings, all written statements, and other relevant documents are placed in the docket and are available for inspection and copying during normal working hours.

B. General Provisions

The general provisions of 40 CFR Part 61, subpart A apply to all sources regulated by this rule.

C. State Implementation and Enforcement of Emission Standards

D. Communications

Communications with the Administrator regarding the reporting and recordkeeping requirements of this rule, as well as requests for waivers, shall follow the provisions of § 61.10, except as otherwise noted in this rule.

E. Executive Order 12291

Under Executive Order 12291, issued February 17, 1981, EPA must judge whether a rule is a "major rule" and, therefore, requires that a Regulatory Impact Analysis be prepared. EPA has determined that this rule is not a major rule as defined in section 1(b) of the Executive Order because the annual effect of the rule on the economy will be less than \$100 million. Also, it will not cause a major increase in costs or prices for any sector of the economy or for any

geographic region. Further, it will not result in any significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of United States enterprises to compete with foreign enterprises in domestic or foreign markets. Under Executive Order 12291, this rule was submitted to the Office of Management and Budget (OMB) for review. Any written comments from OMB to EPA, and responses to those comments, are included in the docket.

F. Paperwork Reduction Act

The information collection requirements contained in this rule have been approved by OMB under the provisions of the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* and have been assigned OMB control number 2060-0115.

G. Regulatory Flexibility Analysis

Section 603 of the Regulatory Flexibility Act, 5 U.S.C. 603, requires EPA to prepare and make available for comment an "initial regulatory flexibility analysis" in connection with any rulemaking for which there is a statutory requirement that a general notice of proposed rulemaking be published. The "initial regulatory analysis" describes the effect of the proposed rule on small business entities.

However, section 604(b) of the Regulatory Flexibility Act provides that section 603 "shall not apply to any proposed . . . rule if the head of the Agency certifies that the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities."

EPA believes this final rule will have little or no impact on small business because the total costs associated with the standard will have relatively little impact on the total cost of producing uranium oxide. In addition, the standard will apply only to large, operating underground uranium mines.

For the preceding reasons, I certify that this rule, will not have significant economic impact on a substantial number of small entities.

H. Judicial Review

Judicial review of these standards is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit within 60 days of today's publication date. The requirements established in this notice may not be challenged later in civil or criminal proceedings brought by EPA to enforce them.

List of Subjects in 40 CFR Part 61

Air pollution control, Hazardous materials, Asbestos, Beryllium, Mercury, Vinyl chloride, Benzene, Arsenic, Radionuclides.

Dated: April 10, 1985.

Lee M. Thomas,
Administrator.

Part 61 of Chapter 1 of Title 40 of the Code of Federal Regulations is amended by adding the following Subpart B consisting of §§ 61.20 through 61.28:

PART 61—[AMENDED]

Subpart B—National Emission Standard for Radon-222 Emissions from Underground Uranium Mines

Sec.

- 61.20 Applicability.
- 61.21 Definitions.
- 61.22 Standard.
- 61.23 Alternatives Standard.
- 61.24 Bulkhead Inspection and Testing.
- 61.25 Bulkhead Repair.
- 61.26 Recordkeeping.
- 61.27 Reporting Requirements.
- 61.28 Source Reporting and Waiver Request.

Authority: Sec. 112 and 301(a) Clean Air Act, as amended, 42 U.S.C. 7412, 7601(a).

Subpart B—National Emission Standard for Radon-222 Emissions from Underground Uranium Mines

§ 61.20 Applicability.

The provisions of this subpart are applicable to an owner or operator of an active underground uranium mine which:

- (a) Has mined or will mine over 100,000 tons of ore during the life of the mine; or
- (b) Has had or will have an annual ore production rate greater than 10,000 tons, unless it can be demonstrated that the mine will not exceed a total ore production of 100,000 tons during the life of the mine.

§ 61.21 Definitions.

As used in this subpart, all terms not defined here shall have the meaning given them in the Clean Air Act or in subpart A of Part 61 and the following terms shall have the specific meanings given below:

- (a) "Abandoned area" means a deserted mine area in which work has ceased and in which further work is not intended. Areas which function as escapeways, and areas formerly-used as lunchrooms, shops, and transformer or pumping stations are not considered abandoned areas. Except for designated ventilation passageways designed to minimize the distance to vents, worked-out mine areas are considered

abandoned areas for the purpose of this subpart.

(b) "Active mine" means an underground uranium mine from which ore or waste material is currently removed by conventional methods.

(c) "Area" means a man-made underground void from which ore or waste has been removed.

(d) "Bulkhead" means an air-restraining barrier constructed for long-term control of radon-222 and radon-222 decay product levels in mine air.

(e) "Inactive mine" is a mine from which uranium ore has been previously removed but which is not an active mine as of the effective date of the standard. Inactive mines which become active mines after the effective date of the standard are considered new sources under the provisions of subparts A and B of this part.

(f) "Modification" as applied to an active underground uranium mine means any major change in the method of operation or mining procedure which will result in an increase in the amount of radon-222 emitted to air. The normal development or operation of an active mine, even though it results in an increase in emissions, is not considered a modification for the purposes of this subpart.

(g) "Temporarily abandoned area" means a mine area in which further work is not intended for at least six months. Areas which function as escapeways, formerly-used lunchrooms, shops, and transformer or pumping stations are not considered abandoned areas. Except for designated ventilation passageways designed to minimize the distance to vents, worked-out mine areas are considered temporarily abandoned areas for the purpose of this subpart if work is not intended in the area for at least six months.

(h) "Underground uranium mine" means a man-made underground excavation made for the purpose of removing material containing uranium for the principal purpose of recovering uranium.

(i) "Work" means mining activity done in the usual and ordinary course of developing and operating a mine.

§ 61.22 Standard.

(a) An owner or operator of an underground uranium mine subject to this subpart shall install and maintain bulkheads to isolate all abandoned and temporarily abandoned areas according to the following requirements:

- (1) The bulkhead shall be a structure designed and constructed for long-term control of the isolated area and shall be sealed to minimize air leakage through

the bulkhead. The bulkhead shall be of sufficient structural strength to resist mechanical abuse, blasting shocks, air pressure differentials, and rock movement for an extended period of time in the mine-operating environment. The basic bulkhead structure may consist of a timber or metal stud frame, covered with lumber, expanded metal lath, plywood, or other sheet products. It may be a continuous nonporous membrane or it may support such a membrane. A sealant shall be applied onto the basic structure and in the joints between the structure and the rock to form a continuous seal and radon barrier. The sealant shall be of a type that will provide a protective seal, and will not easily crack or develop holes or leaks. A sealant may consist of coatings of mortar, masonry, latex, urethane foam, or similar materials. A properly constructed and sealed bulkhead shall have no visible cracks or gaps.

(2) If negative pressure behind the bulkhead is used, then a maximum of 20 percent of the total volume of air contained in the isolated area can be exhausted per day.

(3) As mine areas become abandoned or temporarily abandoned after the applicable date of this standard, the mine owner or operator must install a bulkhead in compliance with the provisions of § 61.22(a) within 30 days of the area becoming abandoned or temporarily abandoned.

(b) Upon written application from an owner or operator of an underground uranium mine subject to this subpart, the Administrator may approve alternative bulkhead designs or construction, or other methods for isolating abandoned or temporarily abandoned areas, if such alternatives can be shown to provide isolation of the area equivalent to the requirements of § 61.22(a)(1).

§ 61.23 Alternative Standard.

(a) If compliance with the requirements of § 61.22 will result in increased radon-222 decay product concentrations in the active areas of the mine, will require workers to enter unsafe areas, or will otherwise be impractical to achieve because of unique or unusual circumstances, then the owner or operator of an existing source (i.e., existing active mine) may apply to the Administrator for an alternative standard. The Administrator may establish an alternative standard if the applicant demonstrates that an alternative is necessary to provide for the health and safety of the workers and will minimize the exposure of nearby individuals and the general population to radon-222 decay products, to the

extent practical. Applications for an alternative standard shall be made within 90 days of the effective date of the standard and include the following information:

(1) The reasons for requesting an alternative;

(2) A description of the alternative requested;

(3) A description of all measures that have been taken or will be taken by the mine owner or operator to minimize the exposure of nearby individuals and the general population to radon-222 decay products, to the extent practical.

(4) A schedule for complying with the alternative standard.

(b) An inactive mine which again becomes active may request an alternative standard under § 61.23(a). Application for an alternative standard must be submitted as part of an application for approval of construction or modification as required under § 61.07.

(c) Requests for an alternative standard shall be sent to the Assistant Administrator for Air and Radiation (ANR-443), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460.

§ 61.24 Bulkhead Inspection and Testing.

An owner or operator of an underground mine subject to the requirements of § 61.22 shall conduct the following bulkhead inspections and tests:

(a) A visual inspection of the condition of each bulkhead required under § 61.22(a) shall be conducted every three months by a qualified representative of the mine owner or operator to determine if, in his or her judgment, the integrity of the bulkhead is in compliance with the requirements of § 61.22(a)(1). A record of each inspection shall be made in accordance with the requirements of § 61.26.

(b) For bulkheaded areas maintained under negative pressure, measurement of the air exhaust rate from the area shall be made at least every three months to determine compliance with the requirement of § 61.22(a)(2). A record of each exhaust rate measurement shall be made in accordance with the requirements of § 61.26.

(c) Upon written application from an owner or operator of an underground uranium mine subject to this subpart, the Administrator may approve alternative testing and inspection procedures if such alternative procedures can be shown to provide reasonable assurance that the mine is in compliance with the requirements of § 61.22(a).

§ 61.25 Bulkhead Repair.

Bulkheads determined not to be in compliance with the requirements of § 61.22(a) during inspections required under § 61.24 shall be repaired within ten days in accordance with the requirements of § 61.22(a).

§ 61.26 Recordkeeping.

Records of inspections and tests required under § 61.24 shall be maintained as described below. These records shall include a bulkhead identification number and location and the date of each inspection or test.

(a) The results of each inspection required under § 61.24(a) shall be recorded as follows:

(1) A description of the condition of the bulkhead including identification of any damage and the extent of damages.

(2) A determination that the bulkhead is in compliance with the specifications of § 61.22(a) or that repairs are needed.

(b) A record shall be maintained for each bulkhead repaired under the requirements of § 61.25.

(c) A record shall be maintained for each air flow rate measurement conducted under the requirements of § 61.24(b). These records shall show the results of each test and the method used. The percent of the total air volume behind the bulkheaded area which is exhausted per day at the measured flow rate shall be recorded.

(d) Records of inspections and tests shall be maintained at the mine and made available for inspection and copying by the Administrator for a minimum of two years.

(e) A current map or schematic of the mine showing the location of each bulkhead required under § 61.22(a) and the approximate air volume of the isolated area shall be maintained. Each bulkhead shall be assigned an identification number which shall be used in inspections and tests, and the reporting requirements of §§ 61.24 and 61.26. This map shall be kept at the mine and be made available for review by the Administrator.

(Approved by the Office of Management and Budget under the control number 2060-0115)

§ 61.27 Reporting Requirements.

(a) An owner or operator of an underground uranium mine subject to the requirements of this subpart shall submit a certification to the Administrator by March 1, 1986, and annually thereafter. This certification shall be based on information and data concerning the calendar year immediately preceding the required data for submission of the certification and shall consist of a statement that the

bulkheading requirements of § 61.22(a) or any alternative standard established under § 61.23 have been implemented.

(b) If a waiver of compliance is granted, this certification is to be submitted on a date scheduled by the Administrator.

(Approved by the Office of Management and Budget under control number 2060-0115)

§ 61.28 Source Reporting and Waiver Request.

(a) The owner or operator of any existing source, or any new source to which a standard prescribed under this subpart is applicable which had an initial startup which preceded the effective date of a standard prescribed under this subpart shall, within 90 days after the effective date, provide the following information in writing to the Administrator:

- (1) Name and address of the owner or operator;
- (2) The location of the source;

(3) A brief description of the nature, size, design, and method of operation of the mine including: (i) current or expected annual ore production rates, (ii) current cumulative ore production, (iii) expected cumulative ore production over the life of mine;

(4) The number of abandoned and temporarily abandoned areas in the mine and the number of these areas which are isolated by bulkheads; and

(5) A statement by the owner or operator of the source as to whether he can comply with the standard prescribed in this subpart within 90 days of the effective date.

(b) An owner or operator of an existing underground uranium mine (i.e., existing source) unable to operate in compliance with the standard prescribed under this subpart or lacking sufficient information to apply for an alternative standard within 90 days of the effective date of the standard may request a waiver of compliance with

such standard for a period not exceeding two years from the effective date. Any request shall be in writing and shall include the following information:

(1) The reasons for requesting the waiver;

(2) A schedule for achieving compliance with the standard, or if applicable, the alternative standard, including the steps which will be taken to come into compliance including a date by which each step will be achieved; and

(3) Interim emission control steps will be taken during the waiver period.

(c) Changes in the information provided under paragraph (a) of this section shall be provided to the Administrator within 30 days after such change, except that if changes will result from modification of the source, as defined in §§ 61.02, the provisions of § 61.07 and 61.08 are applicable.

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