

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 302 and 355

[FRL-5970-8]

RIN 2050-AD46

Administrative Reporting Exemptions for Certain Radionuclide Releases

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency today is issuing a final rule that will reduce reporting burdens under the Comprehensive Environmental Response, Compensation, and Liability Act and the Emergency Planning and Community Right-to-Know Act. Reducing reporting burdens is one of the goals of the President's government-wide regulatory reform initiatives.

Through this rule, EPA will broaden existing reporting exemptions for releases of naturally occurring radionuclides to include releases that result from: land disturbance incidental to extraction activities, except that which occurs at uranium, phosphate, tin, zircon, hafnium, vanadium, and rare earth mines; and coal and coal ash piles at all sites.

Eliminating needless reporting burdens on persons responsible for certain mine sites and coal and coal ash piles will also allow EPA to better focus

its resources on the most serious releases, resulting in more effective protection of public health and welfare and the environment.

EFFECTIVE DATE: April 20, 1998.

ADDRESSES: *Release Notification:* The toll-free telephone number of the National Response Center is 800/424-8802; in the Washington, DC metropolitan area, the number is 202/267-2675. The facsimile number for the National Response Center is 202/267-2165 and the telex number is 892427.

Docket: Copies of materials relevant to this rulemaking are contained in the U.S. EPA CERCLA Docket Office, Crystal Gateway #1, 1st Floor, 1235 Jefferson Davis Highway, Arlington, VA 22202 [Docket Number 102RQ-RN-2]. The docket is available for inspection, by appointment only, between the hours of 9 a.m. and 4 p.m., Monday through Friday, excluding Federal holidays. Appointments to review the docket can be made by calling 703/603-9232. The public may copy a maximum of 266 pages from any regulatory docket at no cost. If the number of pages copied exceeds 266, however, an administrative fee of \$25 and a charge of \$0.15 per page for each page after page 266 will be incurred. The Docket Office will mail copies of materials to requestors who are outside the Washington, DC metropolitan area. The docket for this rulemaking will be kept in paper form.

FOR FURTHER INFORMATION CONTACT: The RCRA/UST, Superfund, and EPCRA

Hotline at 800/424-9346 (in the Washington, DC metropolitan area, contact 703/412-9810). The Telecommunications Device for the Deaf (TDD) Hotline number is 800/553-7672 (in the Washington, DC metropolitan area, contact 703/486-3323); or the Office of Emergency and Remedial Response (5202G), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460 (contact Elizabeth Zeller 703/603-8744).

SUPPLEMENTARY INFORMATION: *Potentially Affected Entities:* Entities that may be affected by this final rule include: (1) Persons in charge of vessels or facilities that may have naturally occurring radionuclide releases into the environment that are among those granted an administrative reporting exemption; and (2) entities that plan for or respond to such releases.

The table below lists potentially affected entities. This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. Other entities not listed in the table could also be affected. To determine whether your organization is affected by this action, carefully examine the changes to 40 CFR parts 302 and 355. If you have questions regarding the applicability of this action to a particular entity, consult the contact names and phone numbers listed in the preceding **FOR FURTHER INFORMATION CONTACT** section of this preamble.

POTENTIALLY AFFECTED ENTITIES

Type of entity	Examples of affected entities
Industry	Mines, coal ash landfills, coal preparation plants, coke plants, other industrial sites with coal piles, and coal transportation storage yards.
State, Local, or Tribal Governments	State Emergency Response Commissions, Local Emergency Planning Committees.
Federal Government	National Response Center, and any Federal agency that may have radionuclide releases granted a reporting exemption.

Outline of Today's Preamble: The contents of today's preamble are listed in the following outline:

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I. Introduction

A. Statutory Authority

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601 *et seq.*, establishes broad Federal authority to respond to releases or substantial threats of releases of hazardous substances from vessels and facilities. Section 101(14) of CERCLA defines the term "hazardous

substance" primarily by reference to various Federal environmental statutes.

Under section 103(a) of CERCLA, the person in charge of a vessel or facility from which a CERCLA hazardous substance has been released in an amount equal to or greater than its reportable quantity (RQ) must immediately notify the National Response Center (see 40 CFR 302.6). In addition, the person in charge of a facility from which a CERCLA hazardous substance has been released in an amount equal to or greater than its RQ must immediately notify State and local response authorities, as required by section 304 of the Emergency Planning and Community Right-to-Know Act (EPCRA), 42 U.S.C. 11001 *et seq.* (see 40 CFR 355.40). As established by EPA in an earlier rulemaking (50 FR 13463, April 4, 1985), a 24-hour period is used for measuring whether an RQ or more of a hazardous substance has been released (see 40 CFR 302.6(a)).

Section 102(b) of CERCLA establishes RQs at one pound for releases of hazardous substances, except for those substances for which RQs were established pursuant to section 311(b)(4) of the Clean Water Act (CWA). Section 102(a) of CERCLA authorizes EPA to adjust the RQs for all hazardous substances by regulation.

A major purpose of the section 103(a) notification requirements is to alert the appropriate government officials to releases of hazardous substances that may require a response to protect public health or welfare or the environment. EPA emphasizes that an RQ merely establishes a trigger for informing the government of a release so that the appropriate government personnel can evaluate the need for a response action and can undertake any necessary response action in a timely fashion. Federal personnel evaluate all reported releases, but in some cases will not initiate a response, because the release of an RQ does not pose a hazard or require a response in all circumstances. Government personnel assess each reported release on a case-by-case basis to determine the appropriate response action, if any.

CERCLA sections 102(a), 103, and 115 together provide EPA with authority to grant administrative reporting exemptions. Such exemptions may be granted for releases of hazardous substances that pose little or no risk or to which a Federal response is infeasible or inappropriate. Requiring reports of such releases would serve little or no useful purpose and could, instead, impose a significant burden on the Federal response system and on the persons responsible for notifying the

Federal government of the release. Through such reporting exemptions, therefore, the Federal response system is able to more efficiently implement CERCLA and EPCRA and more effectively focus on reports of releases that are more likely to pose a significant hazard to human health and the environment.

B. Background of This Rulemaking

Radionuclides are CERCLA hazardous substances because they are listed as hazardous air pollutants under section 112 of the Clean Air Act. Radionuclides initially had a one-pound RQ as established by CERCLA section 102(b). EPA recognized that an RQ of one pound for radionuclides was not appropriate because radionuclides are not generally measured in units of pounds, and releases of much less than one pound of radionuclides may present a substantial threat to public health or welfare or the environment. On March 16, 1987, EPA published a Notice of Proposed Rulemaking (NPRM) to adjust RQs for radionuclides (52 FR 8172), with the comment period ending on May 15, 1987. Twenty-eight comment letters, totaling about 150 pages, were received. The comments, together with the Agency's responses, are presented in "Responses to Comments on the Notice of Proposed Rulemaking on the Adjustment of Reportable Quantities for Radionuclides" (Responses to Comments), which is available for inspection in Docket Number 102RQ-RN located at the U.S. EPA CERCLA Docket Office (Mail Code 5202G), Crystal Gateway #1, 1st Floor, 1235 Jefferson Davis Highway, Arlington, VA 22202.

The Agency promulgated a final rule (54 FR 22524; May 24, 1989) to adjust the RQs for all (approximately 1,500) radionuclides. In preparing the final rule, EPA considered carefully all of the public comments submitted on the proposals made in the March 16, 1987, NPRM. The final rule granted four administrative exemptions from CERCLA section 103 and EPCRA section 304 reporting requirements based on those comments. In particular, the Agency exempted: (1) Releases of naturally occurring radionuclides from large generally undisturbed land holdings, such as golf courses and parks; (2) releases of radionuclides naturally occurring from the disturbance of large areas of land for purposes other than mining, such as farming or building construction; (3) releases of radionuclides from the dumping of coal and coal ash at utility and industrial facilities with coal-fired boilers; and (4) radionuclide releases from coal and coal

ash piles at utility and industrial facilities with coal-fired boilers.

Following the final rulemaking, the American Mining Congress (AMC), the Fertilizer Institute (TFI), and others challenged the rule in the United States Court of Appeals for the District of Columbia Circuit in *TFI v. EPA* 935 F.2d 1303 (1991). In the litigation, AMC and TFI argued, in part, that EPA violated the Administrative Procedure Act by failing to provide adequate notice and opportunity to comment on the proposed exemptions. The petitioners also argued that it was arbitrary and capricious for EPA to discriminate against mining by excluding it from the land disturbance exemption.

The Court found that the administrative reporting exemptions were improperly promulgated because EPA failed to provide adequate notice of, and opportunity for public comment on, those exemptions. The Court, however, left the four exemptions in place while the Agency undertakes a new round of notice and comment rulemaking.

In a proposed rule published on November 30, 1992 (57 FR 56726), the Agency complied with the Court's decision by providing notice of, and requesting comment on, the same four exemptions from CERCLA section 103 and EPCRA section 304 notification requirements that were promulgated in the 1989 final radionuclide RQ adjustment regulation. EPA requested that public comments on the November 30, 1992, proposal be submitted by January 29, 1993. In response to several requests for extension of the comment period, and in the interest of allowing the public greater opportunity to evaluate the issues raised in the November 30, 1992, NPRM, EPA reopened the public comment period for an additional 60 days beginning on March 5, 1993 (58 FR 12876).

Twenty-seven comment letters, totaling more than 750 pages, were received on the November 30, 1992, NPRM, including two after the initial deadline and one after the close of the second comment period. These comments raised a number of issues that the Agency could not resolve without additional information and analysis. Chief among these issues were:

- Do radionuclide releases from land disturbance incidental to extraction activities at mines pose a greater risk than such releases from farming and construction?
- Do coal and coal ash piles at sites without coal-fired boilers (e.g., coal piles at mines, railroad stockyards, and steel mills, and coal ash disposed

of in off-site landfills) pose a greater radiological threat than such piles at boiler sites?

—Is the government likely to respond to radionuclide releases from land disturbance incidental to extraction activities or from coal and coal ash piles at non-boiler sites, and if so, what response realistically can be taken?

After evaluating these issues, the Agency decided to issue a supplemental proposal requesting information and comment on expanded reporting exemptions for certain radionuclide releases. The supplemental proposal, published on August 4, 1995 (60 FR 40042), proposed to (1) broaden the land disturbance reporting exemption to include land disturbance incidental to extraction activities at all mines, with the exception of certain types of mines that are likely to handle materials with elevated levels of radionuclides, and (2) broaden the coal and coal ash pile exemptions to include radionuclide releases to and from such piles at all kinds of sites, not just sites with coal-fired boilers. EPA also requested comments on two alternatives to these proposed broader reporting exemptions in the August 4, 1995, supplemental proposal. The first alternative would grant reporting exemptions for land disturbance activities incidental to extraction at all mines, as well as coal and coal ash piles at all sites. The second alternative would grant exemptions to all land disturbance activities incidental to extraction as well as to all releases of radionuclides to and from all piles of diffuse naturally occurring radioactive material (NORM) below a concentration cutoff. EPA originally requested that public comments on the supplemental proposal be submitted on or before October 3, 1995, but in response to requests submitted by a number of commenters, extended the close of the public comment period until December 4, 1995 (60 FR 51765).

Twenty-nine comment letters were received on the August 4, 1995, supplemental proposal. Seven of these commenters had also submitted comment letters on the November 30, 1992, NPRM. This final rule was developed following careful consideration of all issues and concerns raised in public comments on both the November 30, 1992, NPRM and the August 4, 1995, supplemental proposal.

C. Final Reporting Exemptions

In today's final rule, the reporting exemption for releases of naturally occurring radionuclides from large generally undisturbed land holdings,

such as golf courses and parks, is being retained as promulgated in the 1989 final radionuclide RQ adjustment regulation and as re-proposed in the November 30, 1992, NPRM (57 FR 56726). EPA wishes to clarify that this reporting exemption applies to releases of naturally occurring radionuclides from generally undisturbed land containing ore reserves, including ores containing elevated concentrations of radionuclides, because those ore reserves would be generally undisturbed. Reporting of naturally occurring radionuclide releases from undisturbed land holdings is unnecessary because CERCLA section 104(a)(3) generally precludes removal or remedial actions in response to a release "of a naturally occurring substance in its unaltered form or altered solely through naturally occurring processes or phenomena, from a location where it is naturally found."

EPA is broadening the present reporting exemption for land disturbance activities to include land disturbance incidental to extraction activities at all mines except certain categories of mines that are likely to handle raw materials with elevated radionuclide concentrations (greater than 7.6 picocuries per gram or pCi/g of U-238, 6.8 pCi/g of Th-232, or 8.4 pCi/g of Ra-226, which equal two times the upper end of the concentration range reported in the literature for typical surface soil). The types of mines that are not within the scope of the reporting exemption are uranium, phosphate, tin, zircon, hafnium, vanadium, monazite, and rare earth mines. For the purpose of this preamble, monazite is evaluated along with bastnasite as a rare earth ore, but it is listed separately in the rule as a non-exempt category of mines because monazite also may be extracted to recover other elements, such as thorium and titanium. Releases of naturally occurring radionuclides from land disturbance at all other types of mines are exempted from CERCLA section 103 and EPCRA section 304 reporting requirements. For the purpose of this rule, land disturbance incidental to extraction activities includes land clearing, overburden removal and stockpiling, and excavating, handling, transporting, and storing ores and other raw materials. Land disturbance incidental to extraction also includes replacing materials in mined-out areas as long as such materials have not been beneficiated or processed and do not contain elevated radionuclide concentrations, as defined above. Beneficiation and mineral processing activities, including the associated

handling, transporting, and storing of bulk materials, are not included within the scope of the exemption.

EPA also is broadening the existing exemptions for coal and coal ash piles to include radionuclide releases to and from coal and coal ash piles at all sites, not just sites where there is a coal-fired boiler.

Each of the above exemptions apply only to CERCLA section 103 and EPCRA section 304 reporting requirements. The exemptions do not apply to the related response and liability provisions.

EPA is promulgating these broader exemptions for three principal reasons, which apply equally to both land disturbance at certain mines and to coal and coal ash piles at non-boiler sites. First, the concentrations of naturally occurring radionuclides in the materials subject to the exemption (e.g., overburden and ores in the subject mining sectors, coal, and coal ash) are generally within the range of "typical" background concentrations in surface rocks and soils in the U.S. Second, EPA believes that a CERCLA response to the release otherwise reportable, would be very unlikely and possibly infeasible or inappropriate, because (1) the concentrations of materials being handled are at or near background, and (2) the resulting radionuclide releases are expected to be continuously low, spread over large areas, and widely dispersed in the environment. Third, the submission of individual notifications of these releases does not appear necessary for the government to assess whether a response action is needed, since the releases should be similarly low across all sites subject to the broader exemptions. As a result, the broader reporting exemptions are intended to allow EPA to focus its resources on the most serious releases and to protect public health and welfare and the environment more effectively and efficiently. At the same time, the exemptions would eliminate unnecessary reporting burdens on persons responsible for land disturbance at certain mine sites and any sites where coal or coal ash is stored or disposed.

D. Summary of Changes From the Proposed Rule

EPA has made one change from the August 4, 1995, supplemental proposal. Land disturbance incidental to extraction of the titanium-bearing ores ilmenite and rutile, but not monazite, has been included within the scope of the reporting exemptions for land disturbance activities. As discussed in more detail in Section II.B.2 of today's preamble, additional data submitted by public commenters and assembled by

the Agency in response to comments are sufficient to support a finding that most unprocessed ilmenite and rutile from the U.S. contain radionuclides in concentrations that are generally within the range of typical background concentrations, like the raw materials handled at the other kinds of mines granted a reporting exemption. Monazite, which also may be extracted at mines recovering titanium, tends to have radionuclide concentrations well above typical background levels.

II. Response to Comments

EPA's full responses to public comments related to this rule are contained in "Responses to Comments on the November 30, 1992, and August 4, 1995, Notices of Proposed Rulemaking on Administrative Reporting Exemptions for Certain Radionuclide Releases" (Responses to Comments), which is available for inspection in Docket Number 102RQ-RN-2 located at the U.S. EPA CERCLA Docket Office (Mail Code 5202G), Crystal Gateway #1, 1st Floor, 1235 Jefferson Davis Highway, Arlington, VA 22202. Additional background information supporting the Agency's position and response to many of these comments is provided in "Technical Background Document Supporting Final Administrative Reporting Exemptions for Certain Releases of Radionuclides," also available for inspection in Docket Number 102RQ-RN-2. The following sections provide a summary of the major public comments and EPA's responses.

A. Support for and Opposition to Reporting Exemptions

1. Proposed Exemptions

Of the 56 public comment letters submitted on the November 30, 1992, NPRM and August 4, 1995, supplemental proposal, 32 expressed support for the proposed exemptions. As discussed in more detail in Section II.B below, these commenters' only objections were that the proposed reporting exemptions were not broad enough.

Only three of the 56 public comment letters opposed the proposed exemptions. The main arguments made by these commenters were that the exemptions (1) will limit the government's ability to control naturally occurring radionuclide exposures and risks, including the risk associated with natural background radiation, indoor radon, and coal ash disposal, and (2) will limit the availability of public information regarding the sources and doses of radiation exposure in local communities.

EPA does not believe either of these concerns is valid. With respect to the government's ability to control naturally occurring radionuclides, the Agency reiterates that CERCLA section 104(a)(3) already precludes actions in response to natural background radiation, unless certain conditions are met as specified in section 104(a)(4). This response limitation does not apply to the releases of naturally occurring radionuclides exempted by this rule, which are not natural background releases but rather releases from anthropogenic activities. The rule, however, only exempts the radionuclide releases from CERCLA section 103 and EPCRA section 304 reporting requirements, not from CERCLA response or liability provisions. Therefore, the government can still respond under CERCLA to the exempted releases, if a response is ever determined to be necessary.

Eliminating the requirement to report the selected releases of naturally occurring radionuclides will not jeopardize the government's ability to respond to these releases, but rather will improve its ability to respond promptly to other releases that may be more serious. Moreover, these reporting exemptions under CERCLA in no way interfere with other government initiatives to address naturally occurring radionuclide releases, including EPA's ongoing programs to address indoor radon under the Indoor Radon Abatement Act, airborne emissions of naturally occurring radionuclides under the Clean Air Act (CAA), naturally occurring radionuclides in "special wastes" from mining and mineral processing under the Resource Conservation and Recovery Act (RCRA), and radiation exposures under the Federal Radiation Protection Guidance.

With respect to the availability of public information regarding the sources and doses of radiation exposure in local communities, the purpose of the CERCLA section 103 and EPCRA section 304 reporting requirements is to notify government personnel of releases of hazardous substances so that a timely decision can be made regarding the need for a response action to protect public health or welfare or the environment. These reporting programs are not intended to serve as a source of public information on radiation sources and exposures. The community right-to-know reporting requirements, toxic release inventory requirements, and related provisions under EPCRA sections 311, 312, and 313 remain in effect. Therefore, the reporting exemptions will not significantly impact a community's ability and right to know about hazardous substances.

2. Alternative 1 Proposed on August 4, 1995

Eight commenters supported Alternative 1 proposed on August 4, 1995, which would exempt land disturbance incidental to extraction at *all* mines. Of these eight commenters, three expressed support for Alternative 1 as a means to ensure that radionuclide releases to and from coal and coal ash piles at all sites were granted a reporting exemption. EPA would like to clarify that the final reporting exemptions include exemptions for coal and coal ash identical to the ones proposed in Alternative 1 (the proposed exemptions and Alternative 1 differ only with respect to mining).

Six of the eight commenters expressed support for an exemption for all kinds of mines but, in EPA's judgment, did not provide enough information to support such a broad exemption. Five of these six commenters either simply stated their preference for this regulatory approach without any technical justification or provided information in support of broadening the proposed exemptions to include certain mining sectors (zircon, bastnasite, and phosphorus), rather than all mining sectors as envisioned in Alternative 1. The sixth commenter made a number of arguments in favor of a broad reporting exemption for all kinds of mines, including: mining cannot be distinguished from the other exempted land disturbance activities (farming and construction); the radiation risks posed by mining are low; a CERCLA response is infeasible; and any potential problems associated with radionuclide releases from mines have already been addressed under other programs. The specific points raised by these commenters are addressed below in Section II.B of today's preamble.

Only one commenter directly opposed Alternative 1. This commenter expressed concern about the radiation risk posed by phosphate mining and reclaimed phosphate land. Based on the elevated levels of radionuclides in phosphate mining materials, and considering the lack of information demonstrating that the radiation risks are low or that a CERCLA response is infeasible, EPA continues to believe that radionuclide releases from phosphate mining should not be exempted from the release reporting requirements of CERCLA section 103 and EPCRA section 304. Several of the commenters who supported exempting all mines objected that the scope of Alternative 1 was too narrow. These comments, which are addressed in Section II.B.1.b below, support the view that Alternative 1

should be broadened to include radionuclide releases from beneficiation and mineral processing in addition to releases from extraction.

3. Alternative 2 Proposed on August 4, 1995

Only one commenter expressed support for Alternative 2, which would base the reporting threshold on *concentration of radionuclides* in materials. This commenter, however, was in favor of a dose-based rather than a concentration-based limit as proposed. The commenter suggested that EPA utilize a broader version of Alternative 2, which would exempt all releases of diffuse NORM if the release resulted in a dose lower than 500 millirem (mrem), or 5 millisieverts (mSv), above background, excluding radon. While the Agency recognizes some of the basic advantages of a dose-based cutoff, EPA decided against such an approach because among other reasons: (1) Many individuals and organizations that handle naturally occurring radionuclides do not have the capability to accurately estimate radiation doses; (2) the time and analysis required to estimate doses may delay reporting and, hence, impede timely response if necessary; and (3) without standardization, different releasers would be likely to estimate doses in different ways, resulting in inconsistent reporting.

Five commenters opposed Alternative 2 altogether and seven others, though not entirely opposed to a concentration cut-off, provided information supporting their objections to the approach taken in the August 4, 1995, supplemental proposal. Many of these commenters highlighted the following potential difficulties with Alternative 2: (1) It would place a burden on the regulated community and government of planning and implementing such an approach; (2) the complex multiple-step task of determining radionuclide concentrations in a given material relative to background might jeopardize timely reporting; (3) uncertainties might lead to misinterpretations and abuse of the system; and (4) it would be difficult to establish a reasonable and scientifically sound cutoff level. For these reasons, EPA decided against Alternative 2 for the final rule.

B. Requests for Broader Exemptions for Extraction, Beneficiation, and Mineral Processing

Eighteen of the 56 public comment letters received requested broader exemptions for radionuclide releases from extraction, beneficiation, and mineral processing. This includes nine

comment letters (out of 27) in response to the November 30, 1992, proposal to continue to exclude all mining from the reporting exemptions, and nine comment letters (out of 29) in response to the August 4, 1995, supplemental proposal to broaden the exemptions to include land disturbance incidental to extraction at most kinds of mines. These commenters offered the following points in support of their requests: (1) The exempted activities cannot be distinguished from the non-exempted activities; (2) the properties of certain ores and materials warrant a broader reporting exemption; (3) the radiation risk at non-exempted sites is low; (4) radon releases from non-exempted sites pose little threat; (5) CERCLA responses at non-exempted sites are infeasible; and (6) releases of potential concern are already controlled under other programs. A few commenters also requested that EPA establish a process for granting site-specific reporting exemptions if broader categorical exemptions are not granted in the final rule. Each of these points is addressed in turn below.

1. Similarities to Other Exemptions

a. *Extraction versus Farming and Construction.* Eight commenters, including seven addressing the November 30, 1992, proposal and one commenting on the August 4, 1995, supplemental proposal, asserted that EPA has not adequately distinguished land disturbance incidental to extraction during mining from that which occurs during farming and construction. Among other grounds for broadening the reporting exemptions to include extraction, these commenters pointed to similarities in the concentrations of radionuclides in the earthen materials being disturbed, and similarities in the level of radiation risk posed by the different activities.

In response to such comments on the November 30, 1992, proposal, EPA issued the supplemental proposal on August 4, 1995, to expand the exemptions for land disturbance activities to include radionuclide releases from all mines except certain categories of mines that are likely to handle raw materials with elevated radionuclide concentrations. These broader exemptions were based on a recognition that, if radionuclide levels in the earthen materials handled within a given mining (mineral commodity) sector are at or near background, as at most farms and construction sites, it would be reasonable to treat such mining the same as other land disturbances for the purpose of the CERCLA and EPCRA reporting

exemption. If, however, the materials handled in a given mining sector are likely to have elevated levels of radionuclides, then there might be a reasonable basis for treating the disturbance of those materials differently from land disturbance at the vast majority of farms and construction sites. In EPA's judgment, elevated levels would indicate that further evaluation would be required before it could be concluded with a sufficient degree of confidence that risks were low and that a government response would be unwarranted or infeasible.

EPA followed a three-step approach to identify "elevated" radionuclide concentrations for the purpose of the supplemental proposal. First, based on a review of background concentrations reported in various publications for surface rocks and soils in different geographical areas, the Agency selected the ranges reported by Myrick et al.¹ as representative of "typical" background levels (0.12–3.8 pCi/g of U-238, 0.1–3.4 pCi/g of Th-232, and 0.23–4.2 pCi/g of Ra-226). EPA also considered reported concentrations in recognized hot spot regions of the country, such as the Reading Prong area, as an additional benchmark for the purpose of defining background. Second, EPA compiled available secondary data on the radionuclide concentrations in ores and raw materials handled in different mining sectors. EPA reviewed these data for the purpose of defining "typical" radionuclide concentrations in the various mining materials, rather than overall ranges that would encompass high-end values. Third, EPA compared the typical background range with the typical values assumed for the different mining materials. If based on this comparison a mining material was found to have concentrations greater than two times the upper end of the range defined by Myrick et al. (greater than 7.6 pCi/g of U-238, 6.8 pCi/g of Th-232, and/or 8.4 pCi/g of Ra-226), EPA concluded that concentrations in the material were elevated.² If

¹ Myrick, T.E., B.A. Berven, and F.F. Haywood, 1983, "Determination of Concentrations of Selected Radionuclides in Surface Soil in the U.S.," *Health Physics*, Vol. 45, No. 3 (September), pp. 631–642.

² In choosing background radionuclide values to define the concentration threshold for granting some categories of mines exemption from reporting requirements, the Agency recognizes that the primary purpose of notification is to ensure that releasers notify the government so that the government can assess the need to respond to the release. The exemption threshold levels, like RQ levels, do not reflect a determination that a release of a substance will be hazardous at the level chosen and not hazardous below that level. As in the case of RQ values, EPA is not attempting to make such a determination. (For information about levels that are considered protective of human health and the

concentrations in a mining material also exceeded the values reported in hot spot regions, EPA considered this comparison as further evidence that the concentrations were elevated.

The Agency used the cutoff of two times the upper end of the range defined by Myrick *et al.*, rather than some other multiple such as one or three times, in an effort to balance the need to be protective with the need to account for site-specific variability. On the one hand, a case could be made for using the upper end of the Myrick *et al.* range, because those values are themselves higher than the background concentrations reported for soils and rocks in most places in the U.S. On the other hand, background concentrations of radionuclides are highly site-specific and there are ample data showing that concentrations above the Myrick *et al.*

range do exist in relatively isolated circumstances. In the Agency's judgment, two times the upper end of the Myrick *et al.* range prudently accounts for the possibility of "higher-than-normal" concentrations but is not so high as to be an extreme value likely to occur only in very rare instances. To account for those instances where higher background concentrations may occur, EPA also compared the concentrations in mining materials to representative concentrations reported for known hot spot regions of the country, which amount to roughly three to five times the upper end of the Myrick *et al.* range.

The data and conclusions from this comparison are presented in detail in the Technical Background Document supporting this final rule (available in the docket). The following table

summarizes these results for the non-exempt categories of mines. The table shows, for each type of material, the full range of reported concentrations and the Agency's best estimate of a typical concentration (either a geometric mean when many data points are available, or a commonly cited or other central value that best reflects available data in EPA's judgment). For the purpose of comparison, the table also shows the ratio of the typical concentration to (1) the upper end of the background range reported by Myrick *et al.* for surface soils (3.8 pCi/g of U-238, 3.4 pCi/g of Th-232, and 4.2 pCi/g of Ra-226), and (2) selected background values reported for recognized hot spot regions (20 pCi/g of U-238 reported for the Reading Prong region and 9 pCi/g of Th-232 reported for the Colorado Front Range).

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN MATERIALS IN NON-EXEMPT MINING SECTORS

Material	U-238 ^a (pCi/g)	Th-232 ^a (pCi/g)	Ra-226 ^a (pCi/g)	Ratio of typical value to upper end of Myrick <i>et al.</i> range	Ratio of typical value to selected hot spot value
Uranium Ore	280-640 (460)	10-11 (10.5)	^b NA	U: 121 Th: 3.1	U: 23 Th: 1.2
Phosphate Rock	2.7-267 (45)	0.07-4 (1.05)	3-62 (45)	U: 11.8 Th: 0.3 Ra: 10.7	U: 2.3 Th: 0.1
Vanadium Ore	0.18-340 (30)	0.18-58	NA	U: 7.9	U: 1.5
Tin-Bearing Materials	17-43 (30)	2.9-8,830 (12)	1-480 (20)	U: 8 Th: 3.5 Ra: 4.8	U: 1.5 Th: 1.3
Zircon	5-<165 (93)	NA	13-100 (93)	U: 24.5 Ra: 22.1	U: 4.7
Monazite ^c	600-3,000 (1,800)	2,900-80,000 (3,900)	620	U: 474 Th: 1,147 Ra: 148	U: 90 Th: 433
Bastnasite ^c	7	25-2,330	NA	U: 1.8 Th: 7.4-685	U: 0.4 Th: 2.8-259

^a Where applicable, ranges are presented along with an estimated "typical" value, shown in parentheses.

^b NA = not available.

^c Ores extracted principally for their rare-earth or thorium content.

As these data show, the materials handled and stockpiled at non-exempt categories of mines are not "essentially the same as the soil at farming or construction sites," as asserted by some public commenters. In every material, one radionuclide is likely to be present at a level that is at least 7.9 times the upper end of the background range reported by Myrick *et al.* for typical surface soils. Typical radionuclide concentrations in each material also exceed elevated levels commonly reported in hot spot regions. Therefore, although there are hot spots across the country where farming and construction

will disturb natural soils and rocks with concentrations more than two times the upper end of the typical range reported by Myrick *et al.*, EPA believes that the non-exempt materials are distinguished from the soils and rocks expected to be disturbed at the vast majority of farming and construction sites.

Finally, commenters asserted that the distinction between extraction at non-exempt mines and farming and construction sites is unfounded because EPA has not demonstrated that extraction activities at non-exempt mines pose a greater risk than the exempt activities. EPA does not believe

that risk analysis provides the only reasonable basis for distinguishing between the two sets of activities. As outlined in the supplemental proposal, EPA is distinguishing between the different activities on the basis of the likely radionuclide concentrations in the materials being disturbed relative to background. In the case of the exempt activities, EPA concluded that a CERCLA removal or remedial response would very rarely, if ever, be necessary because the activities result in low-level, diffuse releases of radionuclides at concentrations that are at or near background. EPA also questioned

environment for response actions under CERCLA at radioactively contaminated sites see 40 CFR

300.430(e)2(i) and "Establishment of Cleanup Levels for CERCLA Sites with Radioactive

Contamination" [OSWER No. 9200.4-18, August 22, 1997].

whether it would be feasible or practical to mount a CERCLA response to such releases, since the materials in question already have radionuclide concentrations likely to be at or near background and CERCLA responses would not normally clean up to below background levels. In contrast, when the radionuclide concentrations are likely to be elevated as at non-exempt mines, EPA believes that further analysis is needed before concluding that a reporting exemption is warranted.

As discussed in more detail in response to comments asserting that the radiation risk is low at the non-exempt categories of mines (see section II.B.3 below), EPA believes that currently available risk information and assessments do not provide enough of a basis for broadening the exemptions to include those mines. Therefore, the supplemental proposal requested that commenters wishing to support exemptions for the non-exempt mines provide data demonstrating that radionuclide concentrations in the mining materials are in fact at or near background concentrations, or, in the absence of such data, information showing that radiation exposures and risks are low despite the elevated concentrations in the materials handled. In EPA's judgment, only those commenters addressing titanium mining provided sufficient information to support broadening the exemptions beyond those proposed in the supplemental notice.

b. Extraction versus Beneficiation and Processing. Five commenters on the August 4, 1995, supplemental proposal requested that the proposed broader reporting exemptions be broadened even further to include radionuclide releases from beneficiation and mineral processing. The primary argument made by these commenters was that EPA has not provided a valid basis for excluding beneficiation and processing from the scope of the exemptions.

The scope of the administrative reporting exemption that pertains to mining activities is limited to releases from land disturbance. As proposed in the August 4, 1995, supplemental proposal, and as promulgated in today's final rule, the exempted land disturbance activities include farming, construction, and extraction activities at all mines except certain categories of mines where raw materials are likely to have elevated radionuclide concentrations. Land disturbance activities incidental to extraction include land clearing, overburden removal and stockpiling, and excavating, handling, replacing, transporting, and storing ores and other

raw materials. These are earth moving activities involving natural materials and using technologically unsophisticated operations and equipment generally consistent across sites. The "enhanced" radionuclide releases that may occur as a result of these activities are low-level, diffuse, and difficult to control.

Beneficiation and mineral processing activities are outside the scope of such land disturbance activities. As stated in the preamble to the supplemental proposal, the factors that distinguish beneficiation and processing from land disturbance incidental to extraction include the potential for beneficiation and processing to: (1) Concentrate radionuclides in waste streams or other materials well above natural background levels; and (2) cause substantially greater releases. These factors are discussed below.

Radionuclides may become concentrated through beneficiation and processing activities relative to levels found in raw materials. Some ores and processing operations may yield a waste product, such as slag or tailings, with radionuclide concentrations higher than those in the ore. EPA's 1993 draft Diffuse NORM Waste report³ summarizes the results of studies showing that some processes associated with the beneficiation and processing of certain minerals or metals appear to concentrate certain radionuclides and enhance their environmental mobility. Additional information showing how radionuclides can become concentrated in processing wastes was provided by comments on the supplemental proposal. For example, data referenced by one commenter show how the concentration of radium-226 can be increased in processing wastes relative to zircon sand.

The Agency acknowledges that other data show no increase in radionuclide concentration in certain products and wastes from the beneficiation and processing of certain minerals. However, there are numerous other wastes and by-products from these processing sectors that would have to be characterized before the Agency could conclude that concentrations are not being increased. For example, although available data from copper beneficiation and processing activities indicate no increase in radionuclide concentration in the tailings, copper concentrate, and leach materials, there are no data available on radionuclide concentrations for other wastes and by-

³U.S. EPA, 1993, "Diffuse NORM Wastes," DRAFT, RAE-9232/1-2, Volume I, Office of Radiation and Indoor Air.

products, including solvent extraction crude, spent bleed electrolyte, tankhouse slimes, acid plant blowdown, surface impoundment waste liquids, acid plant thickener sludge, and various process wastewaters, among others.

A separate issue is the potential for beneficiation and mineral processing activities to result in releases greater than those from land disturbance incidental to extraction. Larger releases could be the result of an increase in radionuclide concentration, an operation that results in point source releases, or an increase in environmental mobility due to physical and chemical changes. Many beneficiation and processing activities use heat and chemicals, such as acids, to change the physical or chemical structure of raw ore and intermediate products. For example, the use of solvents in the beneficiation process known as solvent extraction, or acids in leaching processes, tend to increase the mobility of certain constituents. Wastes such as sludges, muds, and slurries have a very different physical structure from that of the original ore, and more detailed study would be needed to determine the effect of the change in radionuclide releasability and mobility. In any case, the resulting material no longer resembles the natural earthen material envisioned within the scope of the land disturbance exemption.

Additional evidence of the differences between land disturbance and beneficiation/processing is provided by 16 sites on the National Priorities List where radioactive contamination is an important health hazard, and where the primary source of contamination was a beneficiation or processing activity or waste.⁴ Though many of these sites are old and environmental protection practices have changed, others were in operation more recently. Among the more recent sites are the United Nuclear Corporation uranium mill in Churchrock, NM, where ground water, surface water, and soils are all contaminated with radionuclides, and the Teledyne Wah Chang Albany zirconium and hafnium processing site in Oregon, where residual on-site sludges are contaminated with high levels of thorium, uranium, and radium. In contrast, there are no documented cases of CERCLA removal or remedial actions being taken in response to radionuclide releases at mine sites

⁴These sites are identified in a report included in the public docket for the November 30, 1992 rulemaking entitled "Radionuclide Releases from Mining Activities: Background Information Related to CERCLA Reporting Requirements," Office of Emergency and Remedial Response, U.S. EPA, October 15, 1992.

within those categories proposed to receive a reporting exemption.

Another issue raised by commenters is the practical difficulty of drawing the line between extraction and beneficiation/processing. As guidance, for the purpose of implementing the reporting exemptions, EPA reiterates that land disturbance incidental to extraction includes land clearing, overburden removal and stockpiling, and excavating, handling, replacing, transporting, and storing ores and raw materials. All of these are earth moving operations, and the materials handled are natural and unprocessed. Beneficiation starts at the onset of the first occurrence of any of the following activities that are typically characterized as beneficiation: Crushing, grinding, washing, dissolution, crystallization, filtration, sorting, sizing, drying, sintering, pelletizing, briquetting, calcining to remove water or carbon dioxide, roasting in preparation for leaching, gravity concentration, magnetic separation, flotation, ion exchange, solvent extraction, electrowinning, precipitation, amalgamation, and heap, dump, vat, tank, and *in situ* leaching. Each of these beneficiation activities is briefly described in the Technical Background Document supporting this final rule.

EPA believes that it would be impossible to draw and effectively implement a line between (1) land disturbance that occurs during beneficiation and processing, and (2) other beneficiation and processing activities. For example, there is no precise demarkation between "handling, transporting, and storing of materials," which is land disturbance, and certain operations characteristic of beneficiation, such as crushing, grinding, and leaching, which include more than just land disturbance. All extraction activities can be considered land disturbance as defined for this reporting exemption rule; however, because of the difficulty in segregating land disturbance from other activities at beneficiation/processing sites, the Agency has decided that it is not possible to broaden the exemption further to clearly include only land disturbance that occurs during beneficiation and processing.

2. Properties of Certain Ores and Materials

Four commenters on the August 4, 1995, supplemental proposal agreed with the proposed broader exemptions, but asserted that the exemptions should be broadened further to include additional mining sectors based on the

properties of ores and raw materials handled in those sectors.

Two commenters said zircon extraction should be exempted because zircon contains low concentrations of radionuclides and has physical properties that inhibit radon emanation and radionuclide leaching. As shown in the above table of radionuclide concentrations, however, available data indicate that radionuclide levels in zircon sand can be quite elevated, including, on average, U-238 concentrations that are approximately 25 times the upper end of the range reported by Myrick *et al.* for surface soils and five times a higher background value (20 pCi/g) cited for the Reading Prong. It is true that, despite these elevated concentrations, zircon sands have a low radon emanation rate and may also leach radionuclides to only a limited degree. While these properties may mitigate the radiological consequences of zircon sand extraction, other possible exposure pathways must be considered before concluding that the radiation risk is low. Potential direct radiation exposures are a particular concern. A study by Boothe *et al.* (1980)⁵ measured 170 $\mu\text{R/hr}$ at the surface of zircon and 15 $\mu\text{R/hr}$ at a distance of 3 feet above the ore. For reference, background measurements cited in the same study were generally 8–10 $\mu\text{R/hr}$. These measurements indicate that zircon sands could pose an incremental direct radiation hazard if people are in close proximity for an extended period of time. Without further characterization of this hazard, EPA believes that it cannot include zircon extraction within the scope of the reporting exemptions.

One commenter objected to EPA's characterization of radionuclide concentrations in rare earth ores in the supplemental proposal, pointing out that the Agency did not adequately distinguish between bastnasite and monazite ores. This commenter also submitted data indicating that radionuclides are present at much lower levels in bastnasite than in monazite. EPA has attempted to characterize these ores more precisely in the Technical Background Document supporting this final rule. Data specific to bastnasite, however, indicate that these ores also contain elevated concentrations (see the above table). Accordingly, a reporting exemption for bastnasite extraction cannot be granted, as there is no basis for a determination that radionuclide

concentrations in the ore are at or near background.

One commenter submitted data indicating that the concentrations of radionuclides in titanium-bearing ores are lower than characterized by EPA for the supplemental proposal. In order to resolve this discrepancy, EPA obtained additional data on the radionuclide concentrations in titanium ores (principally rutile and ilmenite). All of the data collected are presented in the Technical Background Document supporting this final reporting exemption rule. In brief, these data indicate that radionuclide concentrations in foreign titanium ores can be slightly elevated over typical background concentrations; however, on average, concentrations are only 1.1 times the upper end of the background range reported by Myrick *et al.* for surface soils. Domestic rutile and ilmenite contain lower concentrations than foreign ores, with typical concentrations within the background range reported by Myrick *et al.* Based on these additional data, which show overall lower levels than available previously, EPA now concludes that most unprocessed rutile and ilmenite from the U.S. are likely to contain radionuclides at concentrations that are at or near background. Therefore, contrary to the position taken in the supplemental proposal, radionuclide releases from land disturbance incidental to rutile and ilmenite extraction are granted a reporting exemption in today's final rule. However, monazite extraction, including that which may occur at some mines recovering titanium, is not granted a reporting exemption because of the elevated concentrations of radionuclides found in monazite.

One commenter said phosphate ore mining should be exempted because most radionuclide concentration data cited in the Technical Background Document for phosphate ore are at or under approximately five times background levels. As discussed above, EPA selected two times the upper end of the Myrick *et al.* range as a cutoff for this rule because, in the Agency's judgment, this value prudently accounts for the possibility of "higher-than-normal" concentrations but is not so high as to be an extreme value likely to occur only in very rare instances. EPA believes that five times background cannot reasonably be labeled "at or near background" or "generally within the range of typical background concentrations in surface rocks and soils in the U.S.," as EPA judges to be the case for the categories of mines included within the proposed reporting

⁵ Boothe, G.F., Stewart-Smith, D., Wagstaff, D., and M. Diblee, 1980, "The Radiological Aspects of Zircon Sand Use," *Health Physics*, Vol. 38, P. 393–398.

exemptions. Five times the upper-end values determined by Myrick *et al.* equates to 19 pCi/g of U-238, 17 pCi/g of Th-232, and 21 pCi/g of Ra-226. These values are approximately 20 times the mean background level of 1 pCi/g expected in most places in the U.S., and even above most of the elevated background levels reported for hot-spot regions of the country. Even if five times background were accepted as a threshold for defining elevated, 19 (76 percent) of the 25 U-238 concentrations in phosphate rock reported in the Technical Background Document exceed five times the upper limit reported by Myrick *et al.* These data adequately demonstrate that phosphate ore contains elevated levels of naturally occurring radionuclides and prevent the Agency from broadening the reporting exemptions to include phosphate ore mining.

3. Radiation Risk

Ten commenters stated that the reporting exemptions should be broadened to include additional categories of mines as well as beneficiation and processing because available information and analyses show that the radiation risk associated with these activities is low. As noted above, beneficiation and processing are beyond the scope of the final exemptions; nevertheless, the Agency examined public comments regarding the radiation risks posed by these activities as they pertain to extraction.

Several commenters asserted that previous EPA assessments under the CAA show that radionuclide releases from mining pose a low risk and do not warrant control under the National Emission Standard for Hazardous Air Pollutants (NESHAPs) program. These previous assessments include a 1984 study⁶ of various mining and smelting operations as well as a 1989 assessment⁷ of surface uranium mines, which are theoretically worst-case mining activities according to commenters. EPA believes it is inappropriate to rely on the risk assessments conducted for the 1983 and 1984 NESHAP rulemakings, in which the Agency determined not to regulate "other extraction facilities," as the basis for an administrative reporting exemption under CERCLA. The risk

assessments supporting EPA's determination not to promulgate radionuclide NESHAPs for this source category are based on outdated information, exposure assessment methods, and risk characterization techniques. The Agency has not re-examined this source category under the NESHAPs program. The present lack of NESHAPs for certain mining sectors, therefore, does not necessarily indicate that EPA considers the current risk from radionuclide emissions from these sites to be insignificant.

EPA believes the scope of the 1989 NESHAP assessment is too narrow to support a CERCLA reporting exemption. In addition to covering only uranium mines, the assessment considers only the risks posed by airborne releases, not risks associated with other exposure pathways such as direct radiation, drinking water (both ground and surface water), and food consumption, all of which are of interest under CERCLA. Also, the 1989 assessment considers the risks to nearby residents but not workers, which are a concern under CERCLA.

Other commenters stated that mining waste proceedings under RCRA confirm that radiation risks at mines are low. EPA disagrees. EPA's decision not to regulate some mining wastes as hazardous under Subtitle C of RCRA was not based on a finding that the risks (including the radiation risks) are low, but rather on a finding that Subtitle C may not provide sufficient flexibility to address mining-related risks in light of the unique conditions at mining sites (51 FR 24496, July 3, 1986). Since issuing the mining waste regulatory determination, radioactivity has continued to be an important issue in EPA's development of the mining waste program under Subtitle D of RCRA.

Several commenters stated that, like exempted land disturbance activities, radon releases from non-exempt mines disperse rapidly and quickly dissipate into background levels. The Agency agrees that radon disperses rapidly in the ambient air; but this by itself does not mean that radon risks to nearby receptors are necessarily low. Even the low radon risk estimates developed by the Agency in support of the 1989 radionuclide NESHAP ruling for surface uranium mines (54 FR 51654, December 15, 1989), which are worst-case mine sites according to commenters, do not provide adequate basis for a CERCLA reporting exemption, because the 1989 assessment did not evaluate radon risks to workers or those associated with homes built on or around uranium-mining materials with elevated radionuclide concentrations. Such

scenarios could warrant response under CERCLA if an abandoned site in the non-exempt mining categories is not fully reclaimed and is then used for other purposes, or if materials from non-exempt mines are taken off-site and used as fill around homes.

Commenters also stated that risks are low because mining occurs in remote locations. While the Agency acknowledges that many mines are located farther away from population centers than many construction and farming activities, this by itself does not provide sufficient basis for concluding that human exposures and risks around non-exempt mining sites are low. The distance to and exposures of maximally exposed individuals, including on-site workers and closest residents, are unrelated to population density around mining sites. Even if mining sites are located in less populated areas, it is still possible that such individuals may spend considerable time in close proximity to materials with substantially elevated concentrations of radionuclides, and thus experience significant risks.

A few commenters referenced other reports as evidence that radiation risks associated with mining are low. After reviewing each of these references, EPA believes they do not support a reporting exemption for the non-exempt categories of mines. For example, some commenters pointed to a National Research Council report⁸ that states that "the health risks posed by exposures to radon from uranium mill tailings piles are trivial for the average U.S. citizen," and that by "virtually any measure, the risk for people living at distances beyond several kilometers from a pile is trivial." Without disputing these statements in the report, EPA notes that overall population risks or the potential to pose significant risks at great distances are not the most important factors in deciding whether a CERCLA response action may be needed at any individual site. An important determination of the need for response is the risk to reasonably maximally exposed individuals. Nothing in the Council's report enables EPA to conclude that risks to workers or nearby individuals from radon emissions are insignificant.

Commenters also pointed out that the total amount of radon released due to mining is but a small fraction of that released due to the exempted activities of farming and construction. The total amount of radon released across all sites in the country, however, is not relevant

⁶U.S. EPA, 1984, "Radionuclides—Background Information Document for Final Rules, Volume II," Office of Radiation Programs, EPA 520/1-84-022-2, October.

⁷U.S. EPA, 1989, "Risk Assessments, Environmental Impact Statement, NESHAP for Radionuclides, Background Information Document—Volume 2," Office of Radiation Programs, EPA/520/1-89-006-1, September.

⁸"Scientific Basis for Risk Assessment and Management of Uranium Mill Tailings," 1986.

for the purpose of determining whether a reporting exemption is appropriate for a given site or category of sites. Reports of releases are intended to alert government authorities to releases at individual sites so they may determine whether they pose risks warranting a response. A more meaningful measure, with a greater bearing on the potential for radon emissions to pose risks that may warrant a response, is the expected radon emission per site. When commenters' estimates of total annual radon releases from different categories of sources are divided by the number of sites in those categories, it appears that more radon is released from an average uranium or phosphate mine than from an average farm. The Agency recognizes that certain large farms emit more radon than certain mining sites, but this is due more to the relative sizes of the sites than to the rate of radon emission from the earthen materials being disturbed. Large farms emit radon at a low rate but over a large area, whereas certain uranium and phosphate mines emit radon at a higher rate but over a smaller area. The radon flux from uranium and phosphate mining materials is higher than that from most natural soils. This supports the Agency's decision to treat these materials differently from exempted materials in today's final rule.

Some commenters contended that the recent scientific information casts doubt on EPA's underlying Linear Non-Threshold Hypothesis that all ionizing radiation is harmful, and that epidemiological studies of populations exposed to even high ambient radiation levels, such as 50 to 100 times background, do not indicate significant adverse health effects. As EPA stated in the proposed Federal Radiation Protection Guidance for Exposure of the General Public (59 FR 66417, December 23, 1994), the risks to health from exposure to low levels of ionizing radiation have been reviewed by the National Academy of Sciences in a series of reports over the past two decades, as well as by the International Commission on Radiological Protection, the United Nations Scientific Committee on the Effects of Atomic Radiation, and the National Radiological Protection Board of the United Kingdom. Based on these studies as well as extensive reevaluations completed over the last decade of atom bomb survivors, the Agency continues to believe that it is appropriate, for radiation protection purposes, to assume that at and just above the level of natural background the risk of cancer and most serious hereditary effects increases linearly with increasing radiation dose, without a

threshold (59 FR 66417, December 23, 1994). The Agency published its risk estimates for doses at or near background levels of exposure in a 1994 report,⁹ which was reviewed by EPA's Science Advisory Board. These risk estimates are based on the linear non-threshold model.

Finally, one commenter stated that analyses of site-specific exposures at a facility in California shows that there is no significant radiation risk associated with bastnasite extraction and beneficiation, and that the State of California has accordingly declined to license the site for the purpose of radiation control. EPA discussed the matter with the California Department of Health Services (Radiologic Health Branch), which does not concur with the commenter's conclusions. The State is continuing to examine activities at the facility and is still evaluating the need to issue a nuclear materials license. A final decision will be based, in part, on a comprehensive Environmental Impact Report being prepared by San Bernardino County. Consequently, EPA cannot conclude that radiation risks at the subject facility are low and that a government response to radionuclide releases from the facility would be unwarranted. Also, the fact that one facility were well controlled would not support an exemption for an entire category of facilities.

4. Radon Releases

Three commenters argued that radon exposure is responsible for most of the public health risk associated with naturally occurring radionuclides. These commenters also concluded that the risk of radon from mines is low, based on past risk assessments of uranium mill tailings sites and surface uranium mines, which would tend to have higher risks than other kinds of mines. The commenters reasoned that these points taken together show that risks from the worst-case exposure pathway from worst-case mining activities are not significant, and that therefore a broad reporting exemption for all radionuclide releases from all mines is justified.

EPA does not agree with this reasoning. EPA recognizes that its Environmental Impact Statement (EIS) for Remedial Action Standards for Inactive Uranium Processing Sites, cited by commenters, shows that the risk at such sites from radon emissions dwarfs the risks associated with releases of other radionuclides and other pathways.

⁹U.S. EPA, 1994, "Estimating Radiogenic Cancer Risks," EPA 402-R-93-076, Office of Radiation and Indoor Air, Washington, D.C.

Similarly, EPA acknowledges that the Nuclear Regulatory Commission's Generic EIS on Uranium Milling, also cited by commenters, concludes that "* * * radon is the greatest single contributor to risk." However, EPA does not believe either of these references provides a basis for concluding that only radon is of concern. Both reports show other radionuclides and other exposure pathways also can pose considerable risk. Both reports show that direct gamma radiation is a big contributor to risk at uranium mill tailings piles, especially to on-site workers and residents who may live or spend considerable time close to the piles.

This conclusion is supported by other documents placed in the public docket for this rule. For example, EPA's original risk assessment for coal and coal ash piles at boiler sites, which resemble piles of diffuse NORM at mine sites, found that the critical exposure pathway for workers was direct radiation.¹⁰ The estimated risk to nearby residents from exposure to direct radiation was of the same order of magnitude as that from exposure to radon emissions. Similarly, a report submitted in public comments on this rule estimates that direct radiation is the critical exposure pathway for workers exposed to either uranium overburden or metal mine wastes.¹¹ The report also estimates that direct radiation is the critical exposure pathway for nearby residents exposed to metal mining waste. Finally, EPA analyses at the Bluewater Uranium Mine Sites in Prewitt, New Mexico, estimates that exposure to external gamma radiation and radionuclides by the soil ingestion pathway results in a greater than 10^{-4} lifetime cancer risk, which is a substantial risk.¹²

EPA does not believe, as commenters suggest, that previous risk assessment results for uranium mill tailings piles and surface uranium mines provide a basis for concluding that radon risks at all mines are low. Indeed, in enacting the Uranium Mill Tailings Radiation Control Act (UMTRCA), Congress found that uranium mill tailings may pose significant radiation health hazards to

¹⁰U.S. EPA, 1989, "Technical Background Supplement in Support of Rulemaking Adjustment Activities for Reportable Quantities (RQ) of Radionuclides," Office of Radiation Programs, March.

¹¹SENEC Consultants Limited, 1993, "Review of Selected Issues Concerning EPA's Regulations: Reportable Quantities Adjustment—Radionuclides," Prepared for American Mining Congress and The Fertilizer Institute, January.

¹²U.S. EPA, 1992, "Removal Fact Sheet 1, Bluewater Uranium Mine Sites," Prewitt, New Mexico, Navajo Nation, November.

the public, and that every reasonable effort should be made to provide for their stabilization, disposal, and control in a safe and environmentally sound manner to prevent or minimize radon diffusion into the environment. Regulatory initiatives to control radon releases from uranium mill tailings piles have since included UMTRCA standards under 40 CFR part 192 as well as CAA NESHAPs under 40 CFR part 61. For example, in the radon risk assessment supporting the NESHAP for operating uranium mill tailings piles, EPA estimated that the lifetime fatal cancer risk to the most exposed individual is 3×10^{-5} , so long as the piles are mostly wet or covered with clay. However, the risks from mill tailings piles can increase dramatically, to as high as 3×10^{-3} , if the piles are allowed to be dry and uncovered. Based on this conclusion, EPA promulgated a standard limiting radon emissions to an average of 20 pCi/m²-sec (54 FR 51680, December 15, 1989). The risk assessments supporting other regulations on radon emissions from uranium mill tailings piles yield similar conclusions. These conclusions do not support a determination that radon releases from the non-exempt categories of mines are insignificant and warrant a reporting exemption.

EPA recognizes that its risk assessment for the 1989 NESHAP on surface uranium mines concluded that the maximum individual risk due to radon exposure is 5×10^{-5} , which was below the benchmark of 1×10^{-4} used to trigger the imposition of an emission limit. However, a risk of 5×10^{-5} is significant and might warrant response under CERCLA. Moreover, there is no technical basis for concluding that this risk estimate bounds the radon risk at other mine sites. Finally, as mentioned previously, the 1989 assessment did not consider radon risks to workers or radon risks associated with homes built on or around uranium-mining materials with elevated radionuclide concentrations. Therefore, even if the Agency were to accept the proposition that radon risks at other mines are lower than estimated for surface uranium mines, available risk results for surface uranium mines do not address all the potential exposure pathways and receptors that would have to be considered for a broader reporting exemption.

5. Feasibility of Response

Two commenters stated that it is highly unlikely the government could or would respond to reported radionuclide releases from the non-exempt mines. According to these commenters, there is little that could be done beyond

covering radon-emitting ores and other materials with soil or water, which would defeat the purpose of mining.

The Agency believes that CERCLA responses are possible and feasible for non-exempt mines where materials have elevated concentrations of radionuclides. For example, responses could include covering overburden or waste piles, fencing to prevent access, monitoring nearby areas for potential radiation exposure, and establishing administrative controls governing the disposal and use of materials and future land uses of the site after closure.

In addition, it may be feasible or appropriate to take response action after mining operations cease. These could include actions to reclaim the land and prevent elevated radiation exposures in surrounding and encroaching communities. Examples of CERCLA responses targeted specifically to radiation exposures at abandoned mine sites include removal actions taken at the Bluewater Uranium Mine Sites in Prewitt, New Mexico.

6. Controls Under Other Programs

Nine commenters asserted that EPA has previously evaluated radiation risks at non-exempt extraction, beneficiation, and processing sites under other regulatory initiatives and has chosen to regulate those risks identified as potentially significant. Therefore, according to the commenters, CERCLA and EPCRA reporting should not be required for releases at these sites either because they are federally permitted or because they have been shown to pose low risk that does not warrant regulation.

As discussed in Section II.B.3 above, the two regulatory initiatives cited by the commenters as controlling radiation risks at mines—the radionuclide NESHAP under the CAA and the mining waste proceedings under RCRA—do not support a conclusion that the risks are necessarily low. Radiation risk at mines is still being evaluated as part of EPA's current study of diffuse NORM wastes, as well as under various state initiatives. In addition, at the request of Congress, the National Academy of Sciences is currently conducting a study for EPA on the scientific and technical basis of its radiation protection guidance for NORM; when that study is completed, EPA is to report to Congress its views on the need to revise guidelines for NORM in light of the Academy's report. Until these or other comparable studies are completed, and a regulatory change is warranted based on the results of such studies, the Agency will maintain the existing reporting requirements for non-exempt mines. Also, decisions

whether to regulate releases under other programs do not always take adequate account of factors that are important in the CERCLA and EPCRA programs. For example, in making its decision not to regulate radionuclide emissions from mines under the CAA NESHAPs program in 1984, EPA considered a variety of factors, including cost and technological feasibility. These factors would be evaluated differently by government personnel deciding whether to take a response action under CERCLA.

One commenter believed applicable operations and materials produced at a rare earth separations facility in California are adequately considered and controlled within existing regulations, and that the facility should therefore be exempted. Existing controls include a license issued by the California Radiologic Health Branch that requires a radiological monitoring and safety plan to include the treatment, storage and transport of a lead/iron filter cake generated from site operations.

The fact that a facility is regulated by a State does not show that it or other facilities might not cause a release warranting a response. Also, EPA discussed this comment with the California Department of Health Services (Radiologic Health Branch), which clarified that the scope of the current nuclear materials license for this facility is limited to treatment and disposal of radioactively contaminated filter cake. The license currently does not address the separations process in general. The State is continuing to examine activities at the facility and is evaluating the need to issue a broad license to control other radioactive materials and wastes at the site. Therefore, EPA does not believe that this facility shows that the reporting exemptions should be broadened.

More broadly, beneficiation and processing are beyond the scope of the reporting exemptions, as mentioned in section II.B.1.b above. Therefore, controls under other programs for beneficiation and processing activities are irrelevant for the purpose of this rule.

7. Site-Specific Exemptions

Two commenters requested that EPA provide a means for facilities to seek a site-specific exemption based on radionuclide releases at the site, if land disturbance activities incidental to extraction activities at mines with elevated concentrations and beneficiation and processing operations are not included within the final reporting exemptions. In the interest of limiting burdens to both the regulated

community and the government, EPA decided to grant exemptions to categories of mines rather than site-specific exemptions. All of the facilities that would most likely seek a site-specific exemption would be eligible for the reduced reporting requirements under CERCLA for continuous releases. EPA believes that it would be much more burdensome for these facilities to prepare and submit information for a site-specific exemption than to comply with existing reporting requirements for continuous releases. The economic analysis supporting today's final rule ("Estimated Economic Effects of Final Administrative Reporting Exemptions for Certain Releases of Radionuclides," available for inspection in the docket) estimates that each facility spends eight hours per year complying with the continuous release reporting requirements. It would take many more hours for each facility to prepare a scientifically sound, site-specific risk assessment to support a reporting exemption.

C. Scope of Reporting Exemptions for Coal and Coal Ash

Four public commenters raised questions regarding the scope of the proposed reporting exemptions for coal and coal ash piles.

1. Types of Ash

One commenter asked if the exemption for coal ash applies to coal fly ash. EPA interprets the term "coal ash" in the final reporting exemptions to apply to fly ash, bottom ash, and boiler slags, as clarified in the final regulatory language. The radionuclide concentration data presented and examined in the Technical Background Document supporting the exemptions are for all three of these materials. Based on these data, EPA concluded that these materials typically contain radionuclide levels very close to the upper end of the range reported by Myrick *et al.* for surface soils (3.8 pCi/g of uranium-238 and 3.4 pCi/g of thorium-232). Accordingly, these materials were judged to have radionuclide concentrations that are at or near background and they are included within the scope of the reporting exemptions.

2. Beneficial Uses of Ash

Two commenters asked if the coal ash exemption applies to beneficial uses of the ash. Releases of radionuclides "from the dumping of coal ash" and "from piles of coal ash" at all sites—including sites that beneficially use the ash—are included within the scope of the reporting exemptions. The rationale and

regulatory language for the coal ash dumping exemption logically extends to such coal ash uses that involve the land application of coal ash that has not been otherwise processed or altered, typically as a substitute for natural materials.

Other coal ash uses, however, are beyond the scope of the exemptions as proposed. They involve coal ash that has been placed into manufacturing operations and discrete product uses that are unlike the releases from diffuse sources contemplated for the exemptions. These include uses of coal ash as an ingredient in cement, concrete, asphalt, wallboard, blasting grits, roof granules, grouts, fire extinguishing slurries, and fillers in paints, undercoatings, and plastics. Because such uses were not originally part of the exemptions as proposed, but arose through commenters' suggestions, the Agency would need further study to determine whether the exemptions could properly be applied to manufactured product uses.

3. Coal Preparation and Transportation

One commenter asked if the reporting exemption for coal piles applies to coal preparation activities and the transportation of coal in open top railcars and other vehicles. The Agency has determined that the exemptions do not apply to coal preparation activities but do apply to coal transportation.

Today's rule exempts radionuclide releases to and from coal piles at all sites, including piles of raw and prepared coal at coal preparation plants. However, releases from coal preparation activities are outside the scope of the reporting exemptions for the same reasons advanced for beneficiation activities in the mining industry. Specifically, coal preparation involves processing operations and releases that are unlike diffuse releases to and from coal piles, as contemplated in the proposal. Coal preparation activities include, but are not limited to, size reduction, screening, cleaning, and dewatering.¹³

In addition, EPA notes that the concentration of radionuclides in materials handled during coal preparation would have to be generally within the range of typical background, in order to meet the first criterion for exemption outlined in the proposed rule. The Agency, however, has no data on the concentration of radionuclides in wastes and by-products generated during the coal preparation process

¹³ The Technical Background Document supporting the final reporting exemption rule provides background information on the nature of coal preparation activities.

(e.g., slimes, sludges, air emissions, and discarded piping and processing equipment). The commenter asserts that it is unlikely that radionuclide concentrations would be increased as a result of preparation activities, but provides no data showing that the levels in various wastes and by-products are indeed at or near background, as they are in coal.

The amount of waste generated during coal preparation has been estimated as roughly 30 tons for every 100 tons of raw coal.¹⁴ Although limited information is available on the composition of this waste, washability studies do provide some information regarding the fate of radionuclides in the preparation process. These studies identify the phase (i.e., mineral matter or coal) in which an element remains after cleaning, indicating whether an element can be "washed out" of a given sample of coal. Thorium appears to be associated with the mineral material, and uranium with the coal, although "significant amounts of uranium may occur in accessory minerals and as secondary mineralization" in some coals.¹⁵ Consequently, coal preparation waste might be lower in uranium, but higher in thorium than the raw coal. No quantitative data, however, are available to demonstrate the frequency and extent of these or any other differences, if they actually exist.

Preparation techniques and, therefore, the wastes generated during preparation may undergo significant changes in the near future. More stringent air pollution regulations are inducing industry to develop improved coal cleaning technologies which reduce impurities emitted when coal is burned. Based on the extremely limited data for the wastes, and the likelihood that their nature may change, EPA cannot prudently assume that they have, or will in the future have, radionuclide concentrations similar to typical background.

Further, to satisfy the Agency's second criterion for exemption, a CERCLA response to releases of radionuclides from coal preparation activities would have to be highly unlikely, and possibly infeasible, because the materials being handled have radionuclide concentrations similar to background and the releases are expected to be continuously low,

¹⁴ U.S. Department of Energy, 1991, "Coal Data: A Reference," Energy Information Administration, DOE/EIA-0064(90).

¹⁵ U.S. EPA, 1995, "Estimates of Health Risks Associated with Radionuclide Emissions from Fossil-Fueled Steam-Electric Generating Plants," Office of Radiation and Indoor Air, EPA 402/R-95-16.

spread over large areas, and widely dispersed in the environment. Coal preparation activities generally will not result in releases from a diffuse source like those exempted by today's final rule. On the contrary, a coal preparation plant is similar to an industrial facility which may have point source releases, as from an air vent. Responses to such releases would appear to be quite feasible. These responses could include the placement of emission controls, such as fabric filters, to capture particulates before they are released to the atmosphere.

Finally, releases from coal preparation and treatment activities would have to satisfy the last exemption criterion identified in the Agency's supplemental proposal, that is, individual release notifications would not be necessary for the government to assess whether a response action is needed, since the releases should be similarly low across all sites. However, preparation plants appear to differ in design according to the properties and composition of the coal used and other factors. Therefore, processes and releases cannot be generally characterized, and individual release reports may be required for the government to assess the necessity of a response action for a particular facility.

In summary, radionuclide releases from coal preparation and treatment are not analogous to those from coal piles. Like beneficiation in the mining industry, coal preparation activities are outside the scope of the reporting exemptions.

EPA interprets releases from coal transportation as falling within the scope of today's broader exemptions, which apply to releases of radionuclides "from the dumping of coal" and "from piles of coal" at all sites. This includes releases to and from coal piles at transportation storage yards as well as coal held in transportation vehicles. Therefore, fugitive emissions of radionuclides from coal in a moving open top railcar would be exempt. This interpretation is consistent with the scope of the exemption for land disturbance incidental to extraction, which includes transporting ores and other raw materials from certain kinds of mines. Such radionuclide releases during coal transport meet all of the exemption criteria in that the concentrations of radionuclides in the coal are at or near background, the releases are diffuse, and the releases should be similarly low in every case.

D. Requests for Other Exemptions

Two commenters requested that EPA consider other kinds of reporting exemptions. One asked EPA to consider

an exemption for non-episodic releases of hazardous substances from waste sites already identified for remedial/corrective actions. The other asked EPA to consider an exemption for liquid or gaseous radionuclide releases from a nuclear power plant exceeding federally permitted release limits specified in the Nuclear Regulatory Commission's regulations in 10 CFR Part 50.

EPA is not, as part of this final rule, including either of these reporting exemptions because they are beyond the scope of the proposed exemptions. The scope of the exemptions is limited to naturally occurring radionuclide releases from undisturbed land holdings, from certain land disturbance activities (construction, farming, and most types of mining), and to or from coal and coal ash piles.

E. Interpretation of CERCLA Provisions

Nine commenters raised issues regarding the interpretation of two provisions of CERCLA as they pertain to the reporting exemptions: (1) The definition of "release into the environment," and (2) the focus on "substantial danger."

1. Release Into the Environment

All nine of these commenters addressed the ruling of the U.S. Court of Appeals for the District of Columbia in *TFI v. EPA*, 935 F.2d 1303 (D.C. Cir. 1991) that the placement of hazardous substances into an "unenclosed containment structure" does not necessarily constitute a release into the environment for the purpose of CERCLA reporting requirements. According to the commenters, placing radionuclides in stockpiles at mine sites, coal piles, or coal ash storage or disposal units qualifies as placement into an unenclosed containment structure under the court's ruling. As a consequence, they contend, such placement does not qualify as release into the environment and the reporting exemptions are not required.

In making its decision, the court in the *TFI* case considered CERCLA's reporting requirement in the context of an "unenclosed containment structure," defined by EPA as "any surface impoundment, lagoon, tank, or other holding device that has an open side with the contained materials directly exposed to the ambient environment." *TFI* at p. 1309. With such a structure in mind, the court reasoned that "a company could place a non-volatile substance into an open-air storage container and the consequences of the open-air storage would be no different from those that would occur if the company had placed the substance to a

closed container." *TFI* at p. 1310. Therefore, according to the court, the company should not have to report the transfer of the substance to the container because the substance would merely be exposed to the environment, not released into the environment. *Id.*

There may be significant differences, however, between an "unenclosed containment structure" considered by the court in *TFI*, and the open-air stockpiles envisioned by the commenters. The court considered a container with an open side which nonetheless holds a substance. This may be different from a typical bulk-material storage or disposal pile. Placing a substance (e.g., radionuclides in coal) in a pile directly on the land surface clearly constitutes a release to the environment, as those terms are defined under CERCLA. EPA understands, however, that some units for storing or disposing of bulk materials, such as coal and coal ash, may qualify as unenclosed containment structures within the meaning of the court's ruling in the *TFI* case. Such a determination would have to be made on a case-by-case basis considering the actual level of containment provided by the storage or disposal unit.

2. Substantial Danger

Two commenters asserted that CERCLA section 102(a) limits reporting requirements to releases that "may present substantial danger to the public health or welfare or the environment." * * * The commenters added that the "substantial danger" standard is consistently applied across the remainder of the CERCLA response scheme triggered by a release exceeding an RQ (including CERCLA sections 103, 104, and 105(a)). Considered as a whole, according to the commenters, these CERCLA provisions indicate that no relevant purpose is served by requiring reporting of releases not likely to pose the substantial danger at which CERCLA response action is aimed. This applies not only to the radionuclide releases EPA proposed to exempt but also to other radionuclide releases from mining and processing facilities.

RQs are reporting triggers intended to give government officials an opportunity to mount a timely response, if necessary, based on a determination of possible or potential harm. They do not signal a determination that a release presents substantial danger; nor are they a determination that releases of a particular amount of a hazardous substance necessarily will harm the public health or welfare or the environment. The quantity released is just one factor considered by the

government when assessing the need to respond to such a release. Other factors include, but are not limited to, the location of the release, its proximity to drinking water supplies or other valuable resources, and the likelihood of exposure or injury to nearby populations.

Contrary to the commenters' assertion, CERCLA section 102(a) does not limit reporting requirements to releases that "may present substantial danger." Instead, section 102(a) authorizes EPA to designate as hazardous substances, in addition to those referred to in section 101(14), other substances that "may present substantial danger" when released.

Today's administrative reporting exemption rulemaking is related to the release notification provisions of CERCLA section 103, not to the designation provisions of section 102, the response provisions of section 104, or the National Contingency Plan (NCP) provisions of section 105. EPA notes, however, that the commenters have incorrectly stated the role of "substantial danger" in the requirements of sections 104 and 105. Section 104(a)(1) authorizes a federal response to any release of a hazardous substance. In addition, the CERCLA section 105(a)(8)(A) requirement that the NCP consider risk at Superfund sites does not bear on the adjustment of RQs under section 102 or on release notification under section 103.

III. Regulatory Analyses

A. Executive Order 12866

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the Agency must determine whether a regulatory action is "significant" and, therefore, subject to review by the Office of Management and Budget (OMB) and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

- (1) Have an annual effect on the economy of \$100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities;
- (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- (4) Raise novel legal or policy issues arising out of legal mandates, the

President's priorities, or the principles set forth in the Executive Order.

It has been determined that this rule is not a "significant regulatory action" under the terms of Executive Order 12866 and is therefore not subject to OMB review. It does not have an annual effect on the economy of \$100 million or more; nor does it fall within the other definitional criteria for a significant regulatory action described above.

This rule is deregulatory and the exemptions to reporting requirements will result in an estimated net cost savings to the regulated community of \$489,000 annually, as demonstrated by an economic analysis ("Estimated Economic Effects of Final Administrative Reporting Exemptions for Certain Releases of Radionuclides") performed by the Agency, available for inspection in the U.S. EPA CERCLA Docket Office, Crystal Gateway #1, 1st Floor, 1235 Jefferson Davis Highway, Arlington, VA 22202 [Docket Number 102RQ-RN-2].

B. Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), generally requires an agency to prepare, and make available for public comment, a regulatory flexibility analysis that describes the impact of a proposed or final rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant adverse impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities. The following discussion explains EPA's determination.

This rule does not impose any new burdens on small entities. Since it provides relief from reporting requirements to certain sources of radionuclide releases, the impact is solely a cost savings. Therefore, the Agency certifies that the rule will not have a significant economic impact on a substantial number of small entities and, therefore, that a Regulatory Flexibility Analysis is not necessary.

C. Paperwork Reduction Act

Because this rule provides an exemption from CERCLA section 103 and EPCRA section 304 reporting requirements for certain radionuclide

releases, there are no reporting or recordkeeping provisions that require approval from OMB. The Office of Management and Budget (OMB) has previously approved the information collection requirements contained in 40 CFR 302 and 40 CFR 355 under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* and has assigned OMB control number 2050-0046.

This rule reduces the existing regulatory burden. The exemptions to reporting requirements will result in an estimated net cost savings to the regulated community of \$489,000 annually. The Agency estimates that 1,785 facilities will benefit from the reporting exemptions included in this rule. This number includes mining sites engaged solely in extraction activities, as well as coal and coal ash sites and landfills that do not include industrial or utility coal-fired boilers, that might continuously release an RQ of nuclide. The Agency excluded those mining sites with reportable releases from adjoining beneficiation or processing facilities which must still meet CERCLA section 103 reporting requirements, and those still subject to reporting due to adjoining activities releasing an RQ or more of radionuclides. Applying Department of Labor hourly compensation rates for the appropriate labor categories, the cost saving per facility is \$274. This results in total savings of \$489,000. This economic analysis is explained more fully in EPA's "Estimated Economic Effects of Final Administrative Reporting Exemptions for Certain Releases of Radionuclides."

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

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

in 40 CFR Part 9 and 48 CFR Chapter 15.

D. Unfunded Mandates

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub. L. 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative

was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this rule does not include a Federal mandate that would result in estimated costs of \$100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector because the rule imposes no enforceable duty on any State, local or tribal governments or the private sector.

E. Small Business Regulatory Enforcement Fairness Act

Under 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of

Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. 804(2).

List of Subjects

40 CFR Part 302

Environmental protection, Air pollution control, Chemicals, Emergency Planning and Community Right-to-Know Act, Extremely hazardous substances, Hazardous chemicals, Hazardous materials, Hazardous materials transportation, Hazardous substances, Hazardous wastes, Intergovernmental relations, Reporting and recordkeeping requirements, Superfund, Water pollution control, Water supply.

40 CFR Part 355

Air pollution control, Chemicals, Disaster assistance, Hazardous substances, Hazardous waste, Intergovernmental relations, Natural resources, Penalties, Reporting and recordkeeping requirements, Superfund, Water pollution control, Water supply.

Dated: February 19, 1998.

Carol M. Browner,
Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 302—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

1. The authority citation for part 302 continues to read as follows:

Authority: 42 U.S.C. 9602, 9603, and 9604; 33 U.S.C. 1321 and 1361.

2. Section 302.6 is amended by revising paragraph (c) to read as follows:

§ 302.6 Notification requirements.

* * * * *

(c) The following categories of releases are exempt from the notification requirements of this section:

(1) Releases of those radionuclides that occur naturally in the soil from land holdings such as parks, golf courses, or other large tracts of land.

(2) Releases of naturally occurring radionuclides from land disturbance activities, including farming, construction, and land disturbance incidental to extraction during mining activities, except that which occurs at uranium, phosphate, tin, zircon, hafnium, vanadium, monazite, and rare earth mines. Land disturbance incidental to extraction includes: land clearing; overburden removal and stockpiling; excavating, handling,

transporting, and storing ores and other raw materials; and replacing materials in mined-out areas as long as such materials have not been beneficiated or processed and do not contain elevated radionuclide concentrations (greater than 7.6 picocuries per gram or pCi/g of Uranium-238, 6.8 pCi/g of Thorium-232, or 8.4 pCi/g of Radium-226).

(3) Releases of radionuclides from the dumping and transportation of coal and coal ash (including fly ash, bottom ash, and boiler slags), including the dumping and land spreading operations that occur during coal ash uses.

(4) Releases of radionuclides from piles of coal and coal ash, including fly ash, bottom ash, and boiler slags.

* * * * *

PART 355—EMERGENCY PLANNING AND NOTIFICATION

3. The authority citation for part 355 continues to read as follows:

Authority: 42 U.S.C. 11002, 11004, and 11048.

4. Section 355.40 is amended by revising paragraph (a)(2)(vi) to read as follows:

§ 355.40 Emergency release notification.

(a) * * *

(2) * * *

(vi) Any radionuclide release which occurs:

(A) Naturally in soil from land holdings such as parks, golf courses, or other large tracts of land.

(B) Naturally from land disturbance activities, including farming, construction, and land disturbance incidental to extraction during mining activities, except that which occurs at uranium, phosphate, tin, zircon, hafnium, vanadium, monazite, and rare earth mines. Land disturbance incidental to extraction includes: land clearing; overburden removal and stockpiling; excavating, handling, transporting, and storing ores and other raw materials; and replacing materials in mined-out areas as long as such materials have not been beneficiated or processed and do not contain elevated radionuclide concentrations (greater than 7.6 picocuries per gram or pCi/g of Uranium-238, 6.8 pCi/g of Thorium-232, or 8.4 pCi/g of Radium-226).

(C) From the dumping and transportation of coal and coal ash (including fly ash, bottom ash, and boiler slags), including the dumping and land spreading operations that occur during coal ash uses.

(D) From piles of coal and coal ash, including fly ash, bottom ash, and boiler slags.

* * * * *

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