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Mr. Melvyn Leach
Fuel Cycle Licensing Branch
Division of Fuel Cycle Safety and Safeguards
U.S. Nuclear Regulatory Commission
Mail Stop T-8A33
Washington, D.C. 20555

Re: IUSA's License Amendment to Receive and Process Alternate Feed Material from the Molycorp Site

Dear Mr. Leach:

The purpose of this letter is to follow up on our previous discussions with your staff regarding International Uranium (USA) Corporation's ("IUSA's") proposed amendment to Nuclear Regulatory Commission ("NRC") Source Material License SUA-1358, which would permit IUSA to receive and process at its White Mesa Mill (the "Mill") up to 17,750 tons of alternate feed material derived from Molycorp, Inc.'s rare earths facility located in Mountain Pass, California ("Molycorp"). During the course of the discussions, the question was posed as to whether the U.S. Environmental Protection Agency ("EPA"), or a state that has been delegated authority by EPA under the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. §§ 6901 *et seq.*, has RCRA jurisdiction over the Molycorp materials if the materials exhibit a hazardous "characteristic" pursuant to RCRA regulations, 40 C.F.R. §§ 261.21-33 (Attachment A).[1]

IUSA's answer to the question posed is that once NRC issues an alternate feed material license amendment to IUSA to process the Molycorp materials as *source material ore* at its licensed uranium mill, and the materials are destined for processing at the Mill pursuant to that amendment, neither EPA nor a state with delegated RCRA authority has jurisdiction over the materials under RCRA.[2] In light of all the points and

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[1] The hazardous waste "characteristics" under RCRA are ignitability, corrosivity, toxicity and reactivity.

[2] An Atomic Energy Act ("AEA") license amendment issued by an Agreement State or a determination by a licensee pursuant to its performance based license condition criteria would also be sufficient.

authorities provided herein, IUSA respectfully requests that NRC issue the requested license amendment as expeditiously as possible.

I. FACTUAL BACKGROUND

As discussed in NRC's Federal Register Notice dated January 9, 2001, 66 Fed. Reg. 1702 (Attachment B), IUSA filed an application to amend Source Material License No. SUA-1358 to allow the Mill to receive and process certain material from Molycorp as alternate feed material pursuant to NRC's Alternate Feed Policy.[3] Specifically, IUSA seeks to process certain uranium-bearing materials from Molycorp for the recovery of uranium through use of the Mill's existing acid leach process. As is the case with all alternate feed materials processed at the Mill, the residuals resulting from processing the Molycorp materials will be managed as 11e.(2) byproduct material in the Mill's NRC-licensed tailings cells.

The Molycorp materials consist of up to approximately 17,750 tons of lead sulfide sludge containing uranium. The materials resulted from the extraction of lanthanides and other rare earth materials and are currently being stored in ponds at the Molycorp facility. Molycorp has estimated that the materials have an average uranium content of approximately 0.15%. The lead content in the materials is a natural component of the ore (similar to many ores processed by IUSA) and is at levels such that the materials might not pass EPA's Toxicity Characteristic Leaching Procedure ("TCLP"). Consequently, unless exempted from RCRA, the materials potentially could be subject to regulation as a RCRA characteristic hazardous waste. The materials do not contain any listed hazardous waste as defined in RCRA. *See* 40 C.F.R. §§ 261.30-33 (Attachment A).

In a letter received by NRC on February 12, 2001 (Attachment E), EPA expressed concerns regarding IUSA's application. Specifically, EPA advised NRC that according to EPA's Region 9 Office, the Molycorp materials are currently regulated under RCRA as a "characteristic" hazardous waste and have been classified by the State of California as such.[4] EPA further stated that it is "unclear whether RCRA jurisdiction would apply to some components of the waste after it is licensed as a source material," and, in particular, questioned IUSA's analysis, as stated in the license amendment request, that once NRC has determined the waste to be deemed *source material* it can be removed from the Molycorp facility as a "recycled mineral waste." In the letter, EPA requested that NRC meet with EPA to clarify this point and to work with EPA to reach a consensus

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[3] *See Final Position and Guidance on the Use of Uranium Mill Feed Materials Other than Natural Ores*, 60 Fed. Reg. 49296 (September 25, 1995) (Attachment C), as amended by *Regulatory Issue Summary* 2000-23 (Nov. 2000) (*Interim Position and Guidance on the Use of Uranium Mill Feed Material Other than Natural Ores*) (Attachment D).

[4] IUSA understands that while the State of California has previously classified a lead precipitate stored in drums at the Molycorp facility as hazardous waste, it has never asserted jurisdiction over the lead sulfide sludge that is the subject of this amendment. Moreover, under EPA guidance, 54 Fed. Reg. 36597 (September 1, 1989), because the lead sulfide sludge materials have not been actively managed since the mid-1980's, IUSA understands that they are not subject to regulation as hazardous wastes.

on the issue. In a follow-up letter received by NRC on April 5, 2001 (Attachment F), EPA advised NRC that the determination as to whether the Molycorp materials are hazardous waste requires resolution of several issues, including whether the materials in question are "solid wastes." EPA noted that generally materials are not classified as "solid wastes" when they are legitimately reclaimed, and therefore such materials are not considered hazardous wastes under Subtitle C of RCRA. The letter further states that EPA has authorized the State of California and the State of Utah to implement their State RCRA programs in lieu of the Federal RCRA program and that NRC should obtain the views of California, Utah and Nevada (through which the Molycorp materials will be transported) on this matter. In discussions with the State of Utah Division of Solid and Hazardous Waste ("UDSHW"), UDSHW advised IUSA that it interpreted the April 5, 2001 EPA letter as EPA deferring to the State with respect to whether the processing of the Molycorp materials as an alternate feed material is exempt from RCRA. UDSHW advised IUSA that, based on the letter from EPA, UDSHW would apply standard RCRA guidance to determine whether or not the Molycorp materials would be legitimately "recycled" at the Mill, and hence exempt from RCRA pursuant to 40 C.F.R. § 261.2(e) (Attachment G).

As discussed below, the primary issue here is not whether the materials are to be "recycled" and, therefore, are not hazardous waste, but rather whether the materials are *source material ore* and hence are not solid waste and, therefore, not regulated under RCRA. As explained below, it is unnecessary to engage in a RCRA recycling analysis with respect to these materials. It should be noted, however, that in order for the Molycorp materials to be licensed for processing at an NRC licensed uranium mill as *source material ore* they must meet the definition of source material *and* satisfy the criteria of NRC's Alternate Feed Policy which addresses many of the issues that are fundamental to a RCRA recycling analysis, while taking into consideration the unique nature of materials containing radionuclides.

With this letter, IUSA is requesting that the NRC Staff grant the license amendment by concluding that the Molycorp materials satisfy the definition of *source material ore and* the requirements of NRC's Alternate Feed Policy and, therefore, are not a solid waste and are exempt from RCRA. IUSA notes that EPA also sees value in NRC resolving this issue. In a meeting between IUSA and EPA Region 8 on May 2, 2001, EPA Region 8 personnel advised IUSA that it is their opinion that it is within NRC's authority and responsibility to determine whether the Molycorp materials are *source material ore* and, hence, exempt from RCRA. Moreover, during a recent meeting between Molycorp and the State of California Radiation Health Bureau ("RHB"), RHB personnel expressed support for processing the lead sulfide sludge from Molycorp at IUSA's NRC licensed mill, pursuant to the proposed licensed amendment.

Should the NRC fail to make this determination, IUSA is concerned that confusion will continue and quite possibly, unmanageable dual jurisdiction (including perhaps *retroactive* application of RCRA to previous IUSA activities) over the Molycorp materials, and other materials that have been processed at the Mill, may result.

II. LEGAL BACKGROUND

To adequately address the issue of whether the Molycorp materials are subject to regulation by EPA and/or an authorized state under RCRA, a brief review of the applicable law is provided.

A. Source Material Ore Is Expressly Exempted From RCRA

Only "solid wastes" may be regulated as "hazardous waste" under RCRA. *See* 42 U.S.C. § 6903(5) (Attachment H); 40 C.F.R. § 261.3 (Attachment G). *Source material* is expressly excluded from the definition of "solid waste." RCRA provides that the term "solid waste" does not include:

> source, special nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, (68 Stat. 923) [42 U.S.C. §§ 2011 *et seq.*].

42 U.S.C. § 6903(27) (Attachment H); *see also* 40 C.F.R. § 261.4(a)(4) (Attachment G). Consequently, since *source material* is not a "solid waste," it cannot be classified as "hazardous waste." Therefore, *source material* is not subject to regulation by EPA or an authorized state pursuant to RCRA.

Since RCRA must rely on the AEA definition of *source material*, an understanding of what qualifies as "source material" under the AEA is critical. *See* 42 U.S.C. § 6903(27) (Attachment H); 40 C.F.R. § 261.4(a)(4) (Attachment G). The term *source material* is defined to mean:

> (1) uranium, thorium[5], or any other material which is determined by the Commission pursuant to the provisions of section 61 to be source material; or (2) *ores* containing one or more of the foregoing materials, in such concentration as the Commission may by regulation determine from time to time.

42 U.S.C. § 2014(z) *(emphasis added)* (Attachment I). Since *source material* is defined to include *ore* containing uranium, it is necessary to understand the definition of *ore*. Consistent with Congress' intent to include a broad range of materials within the scope of the term *ore* (and, thereby to encompass an equally broad range of materials within the regulatory control program for wastes from ore processing as 11e.(2) byproduct material), NRC defines *ore* as:

> a natural or native matter that may be mined and treated for the extraction of any of its constituents ***or any other matter***

[5] Although uranium and thorium are both source material, this letter addresses only uranium recovery.

> *from which source material is extracted in a licensed uranium or thorium mill.*

60 Fed. Reg. at 49,296 (*emphasis added*) (Attachment C).[6] Licensable or licensed *source material ore* must contain at least 0.05% uranium and/or thorium. *See* 10 C.F.R. § 40.4 (Attachment K).

Thus, any material that satisfies NRC's definition of *ore* and contains 0.05% or greater uranium is *source material* and, therefore, is excluded from regulation under RCRA.[7]

1. Alternate Feed Materials Are Source Material Ore And Therefore Are Exempt From RCRA

The Alternate Feed Policy was developed by NRC to establish a set of criteria to be used in evaluating whether feed materials that are not "conventional ores" can properly be processed at licensed uranium mills such that the tailings and wastes generated from such processing will still be considered 11e.(2) byproduct material. The Policy establishes four criteria that must be satisfied before uranium-bearing materials other than conventional ores may be processed at a licensed uranium mill. First, processing the alternate feed material (and disposal of the tailings and wastes associated with such processing) must conform with the requirements of 10 C.F.R. Part 40. Second, the alternate feed material must not contain any "listed" hazardous wastes (*i.e.*, any wastes listed under 40 C.F.R. §§ 271.30-33 (Attachment A) or under comparable state law provisions) or residues that constitute hazardous waste from any wastewater treatment process.[8] However, "[f]eed material exhibiting only a characteristic of hazardous waste (ignitable, corrosive, reactive, toxic) would not be regulated as hazardous wastes and could therefore be approved for recycling and extraction of source material." 60 Fed. Reg. at 49,297 (Attachment C). Third, the alternate feed material

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[6] The Commission approved the broad definition of ore in its various decisions regarding alternate feed materials, including *In the Matter of International Uranium Corporation (Receipt of Materials from Tonawanda, New York)* CLI-00-01 (Feb. 10, 2000) (*Ashland II*) (Attachment J). Furthermore, the same definition has been relied upon by the Staff and licensees to determine whether the wastes from processing particular materials satisfy the definition of 11e.(2) byproduct material. Therefore, the same definition *must* be used in defining *source material ore*.

[7] *Source material ore* is not a solid *waste* and, as noted above, is exempt from regulation under RCRA and is under the sole jurisdiction of NRC. Technically speaking, mixed *waste* (a mixture of AEA low-level radioactive waste and hazardous waste) by contrast, is subject to EPA jurisdiction with respect to the hazardous constituents and NRC jurisdiction with respect to the radionuclides. Since, as explained herein, the Molycorp materials are *source material ore* and not mixed *waste*, EPA has no jurisdiction over the materials. *See* EPA, *Guidance on the Definition and Identification of Commercial Mixed Low-Level Radioactive and Hazardous Waste,* Question 1 (http://www.epa.gov/radiation/mixed-waste/mw_pg25.htm) (Attachment L).

[8] However, the *Interim Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores* (Attachment D), indicates that materials containing listed hazardous waste may be licensed as alternate feed material with approval from EPA or an authorized state.

must qualify as an "ore." Fourth, the alternate feed material must be processed *primarily* for its source material content.

The determination of whether or not a material is processed *primarily* for its source material content is inextricably linked to the definition of "ore" quoted above.[9] *See Ashland II.* The Commission's decision interpreting the Alternate Feed Policy, effectively adopts the Policy's definition of *ore* and establishes that a material will be presumed to be processed *primarily* for its source material content if it is processed for the extraction of uranium in a licensed uranium mill that is part of the nuclear fuel cycle, rather than in a non-fuel cycle facility as part of a *secondary, side-stream* recovery operation. As the discussion of the definition of "ore" in the preamble to the proposed Alternate Feed Policy stated:

> Two major considerations that went into this proposed definition of ore were:
>
> 1. It is broad enough to include a wide variety of feed materials.
>
> 2. The definition continues to be tied to the nuclear fuel cycle. Because *the extraction of uranium in a licensed mill remains the primary purpose of processing the feed material*, it excludes secondary uranium side-stream recovery operations at mills processing ores for other metals. Thus, tailings from such side-stream operations at facilities that are not licensed as uranium or thorium mills would not meet the definition under 11e.(2) of byproduct material.

57 Fed. Reg. at 20,525 (*emphasis added*) (Attachment M).

Finally, the phrase "processed *primarily* for its source material content" was interpreted by the Commission in *Ashland II* to mean that it must be reasonable to expect that the material will in fact be processed at a licensed uranium mill and that uranium will be recovered, regardless of the economics of the transaction. In developing its Alternate Feed Policy, NRC recognized that the physical, chemical, and radiological characteristics of alternate feed materials may vary widely in comparison to conventional ores. Accordingly, the Alternate Feed Policy sets out a number of criteria intended to ensure that wastes generated from processing alternate feed material will qualify as 11e.(2) byproduct material and will not otherwise be subject to dual or multiple jurisdiction. Thus, for example, the policy requires a licensee to ensure that processing an alternate feed, and disposing of the resulting tailings and wastes, will not compromise a mill's

[9] That determination (and the expansive definition of *ore*) is also inextricably linked to the expansive definition of 11e.(2) byproduct material which includes all wastes (radioactive and non-radioactive) generated by the extraction or concentration of uranium from *"any ore."*

ability to comply with the regulatory requirements contained in 10 C.F.R. Part 40. *See* 60 Fed. Reg. at 49,296 (Attachment C).

Based on the foregoing, any uranium-bearing material that satisfies the broad definition of ore, does not contain a *listed* hazardous waste, and that will be processed *primarily for its source material content* at a licensed uranium mill meets the definition of alternate feed material. Furthermore, because alternate feed material must be an *ore*, an alternate feed material with an uranium content of 0.05% or greater is *source material ore*. For the reasons stated above, such *source material ore* is exempt from regulation under RCRA.

B. 11e.(2) Byproduct Material Is Regulated By NRC And Is Expressly Exempt From RCRA

As noted above, the wastes that result from processing *source material ore* primarily for its *source material* content at a licensed uranium mill are 11e.(2) byproduct material, which is defined as:

> ...the tailings or wastes produced by the extraction or concentration of uranium or thorium from *any ore* processed *primarily* for its source material content.

42 U.S.C. § 2014e.(2) (*emphasis added*) (Attachment I).

Like *source material*, 11e.(2) byproduct material is excluded from the definition of "solid waste" and, therefore, is excluded from regulation under RCRA. *See* 42 U.S.C. § 6309(27) (Attachment H); 40 C.F.R. § 261.4(a)(4) (Attachment G).

C. Congress Intended For NRC To Have Sole Jurisdiction Over Source Material

Congress gave NRC the authority to regulate both the radiological and nonradiological aspects of *source material ore* and byproduct material, in conformity with standards set by EPA. The AEA, as amended by UMTRCA, requires NRC to regulate wastes from processing source material based on standards that provide equivalent protection to EPA standards, and, as a result, no permit is required under the Solid Waste Disposal Act for the "processing, possessing, transfer, or disposal of byproduct material." Section 275 b.(2) (Attachment N). In Section 84 of the AEA (Attachment O), Congress directed the NRC to regulate both the *radiological and nonradiological components* of mill tailings in conformance with the manner in which EPA manages hazardous waste under RCRA. Specifically, EPA promulgated standards that NRC relied on when promulgating its 10 C.F.R. Part 40, Appendix A criteria. However, unlike the EPA standards, NRC criteria include additional protections and slight variations to address the unique issues associated with the presence of radionuclides in *source material ore* and byproduct material.

NRC, not EPA, is charged with active implementation of UMTRCA generated requirements including ensuring that the standards promulgated pursuant to RCRA, set forth at 40 C.F.R. Part 192, Subpart D (Attachment P), are applied "during and following processing of uranium ores." 40 C.F.R. § 192.30. Similarly, the applicable surface impoundment design standards and groundwater protection requirements for Subtitle C facilities are incorporated into Appendix A, which includes the requirements applicable to mill tailings impoundments and the operations of uranium mills generally. *See* 40 C.F.R. § 192.32 (Attachment P). For example, since the long-lived nature of radionuclides pose an additional potential threat beyond mere characteristic waste, the Appendix A criteria, incorporating the 40 C.F.R. Part 192, Subpart D standards, have unique features such as passive controls for 1000 years through an engineered encapsulation system and a mandatory governmental custodian licensed in perpetuity by NRC, which provide additional protection above and beyond that provided by a state-of-the-art RCRA impoundment.

Congress in adopting the AEA, as amended by UMTRCA, delegated to NRC exclusive jurisdiction over *source material and 11e.(2) byproduct material.* Had it been intended that EPA should have jurisdiction over these materials, either of which could and both of which frequently do contain hazardous constituents, Congress would not have exempted them from RCRA and provided that where there is a conflict between AEA and RCRA, RCRA yields.[10] Therefore, it is only proper that alternate feed material, which NRC determines to be *source material ore,* is exempt from regulation as hazardous waste under RCRA. If NRC does not assert its sole authority over these materials, it could result in an entangled web of dual jurisdiction of the very type Congress intended to avoid.

D. A Separate RCRA Recycling Analysis Is Redundant And Creates The Potential For Inconsistent AEA And RCRA Determinations And Dual Jurisdiction

The application of RCRA requirements to processing alternate feed material that is *source material ore* at an NRC licensed uranium mill would not only be contrary to law, but would be duplicative and unnecessary. NRC has determined what constitutes "processing *primarily* for uranium" and, hence, what type of *ore* processing creates

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[10] Congress has made it clear that, in the event of a conflict between RCRA and the AEA, RCRA requirements must yield. RCRA § 6905(a) (Attachment Q) provides that:

> Nothing in this chapter shall be construed to apply to (or to authorize any State, interstate, or local authority to regulate) any activity or substance which is subject to ... the Atomic Energy Act of 1954 except to the extent that such application (or regulation) is not inconsistent with the requirements of such Acts.

11e.(2) byproduct material. Furthermore, as noted above, NRC regulates the creation and disposal of 11e.(2) byproduct material in conformance with EPA standards.[11]

From the standpoint of environmental protection, RCRA recycling management requirements are duplicative of NRC's license amendment process and could lead to confusion or conflicts as a result of the application of two similar, yet distinctly different, regulatory programs.[12] The ultimate objective of the RCRA analysis is the same as the analysis NRC performs under the AEA when evaluating whether to approve an alternate feed license amendment—to evaluate whether materials proposed for recycling/processing will indeed be recycled/processed to produce a valuable product (*e.g.* yellow cake) and to assure that all wastes generated will not avoid appropriate regulatory controls, and will be used and managed in a manner that is protective of human health and the environment.

As discussed above, Congress has given NRC the sole authority to regulate *source material* and the radiological and nonradiological components of 11e.(2) byproduct material. NRC should avoid the potential for inconsistent AEA and RCRA results by designating the Molycorp alternate feed materials, which have a uranium content of greater than 0.05% and which by definition are *source material ore*, not subject to RCRA. If a separate RCRA analysis must be performed for each alternate feed, the potential for inconsistent results exists not only prospectively but also perhaps retrospectively. As noted above, a number of alternate feeds processed since 1992 have displayed characteristics of hazardous waste and have not undergone a separate RCRA analysis. If NRC were to conclude today that a RCRA analysis is necessary for these materials, and some materials were to become subject to RCRA controls, this could subject licensed uranium milling facilities to dual AEA/RCRA jurisdiction, thereby raising questions about whether DOE would be required by UMTRCA to accept long term stewardship of the site. In no circumstances to date has EPA or an authorized State required that RCRA recycling guidance be applied by NRC, or any other party, in connection with the approval of any alternate feed material for processing at a licensed uranium mill; to do so now would be unwarranted and improper.

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[11] It is worth noting that, the 1984 Amendments to the Solid Waste Disposal Act, which set forth specific requirements for RCRA surface impoundments, state that nothing in the amendments should be construed to require changes in the regulatory program for mill tailings under UMTRCA, which provides that certain standards promulgated under UMTRCA for the regulation of uranium mill tailings should be "consistent" with the standards of the Solid Waste Disposal Act, as amended. Pub. L. 98-616 §703 (Attachment R). *See also*, 130 Cong. Rec. S20845 (daily ed. July 25, 1984) (statement of Mr. Randolph) (Attachment S).

[12] For example, RCRA recycling guidance considers economics as a factor (although acknowledging that all mineral recovery recycling does not necessarily have to be profitable to be legitimate). *See generally*, 63 Fed. Reg. 28,556 (May 26, 1998). The Commission however, as explained *supra*, has determined that the economics of uranium recovery at a Mill are irrelevant to valid recycling as long as uranium can reasonably be expected to be (or is) extracted at a mill.

III. CONCLUSION

The Molycorp materials satisfy the definition of *source material ore* and the criteria of the Alternate Feed Policy: they are estimated to contain an average of approximately 0.15% uranium, therefore they are licensable *source material ore*; they do not contain any listed hazardous wastes; they will be processed and their wastes disposed of in accordance with the requirements of 10 C.F.R. Part 40, Appendix A; the wastes meet the definition of 11e.(2) byproduct material; source material will be extracted from the materials at a licensed uranium mill; and, the material will be processed *primarily* for its source material content. As *source material ore* the Molycorp materials are exempt from RCRA under 40 C.F.R. § 261.4 (a)(4) (Attachment G), regardless of whether the materials exhibit a hazardous characteristic. In other words, *whether or not the Molycorp materials are potentially subject to state and/or EPA jurisdiction under RCRA, once a license amendment is issued by NRC and the materials are destined for processing at the Mill as an alternate feed material pursuant to an NRC alternate feed material amendment, the materials are source material ore*, and, thus are regulated solely by NRC and not by EPA or an authorized state under RCRA.[13]

This analysis is consistent with NRC's application of the Alternate Feed Policy over the last decade and NRC Staff need look only to the Alternate Feed Policy, NRC's regulations, and prior Commission decisions to approve IUSA's license amendment request. The Alternate Feed Policy provides that alternate feed materials may be processed at a licensed uranium mill if they exhibit characteristics of RCRA hazardous wastes. The Policy does not require EPA or EPA authorized state approval for any materials that contain characteristics of RCRA hazardous wastes.[14] Since the Molycorp materials are exempt from RCRA as licensed (or licensable) *source material ore* and NRC is charged with implementing the AEA, including the meaning of such AEA terms, NRC Staff can approve the license amendment without applying a RCRA recycling analysis, which is not only unnecessary but potentially detrimental to UMTRCA's mandated long term custodial control requirements.

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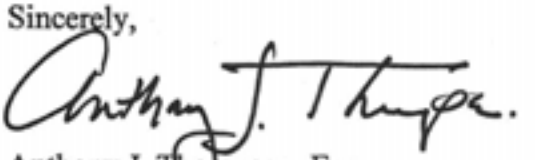
[13] In fact, while not applicable here, it is important to note that an alternate feed material containing less than 0.05 % uranium that is processed for its uranium content is subject to AEA jurisdiction. As such, it is a primary raw material feedstock for AEA and RCRA purposes, ceases to become a solid waste and therefore ceases to be regulated under RCRA.

[14] As noted in footnote 8, in NRC Regulatory Issue Summary 2000-23 (*Interim Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores*) (Attachment D), the Commission suggests broadening the scope of the alternate feed guidance to permit processing alternate feeds containing *listed* hazardous waste where approvals are obtained from EPA and/or an authorized state and the long term custodian (*i.e.* DOE). However, this suggestion is not relevant here because the Molycorp materials merely exhibit a hazardous characteristic and do not contain listed hazardous waste.

IUSA urges NRC to license the Molycorp materials as alternate feed material and to affirmatively recognize that as *source material ore* they are not solid waste and are exempt from regulation by EPA under RCRA.

Sincerely,



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Attachments

Attachment A

waste if he has reason to believe that individual wastes, within the class or type of waste, typically or frequently are hazardous under the definition of hazardous waste found in section 1004(5) of the Act.

(c) The Administrator will use the criteria for listing specified in this section to establish the exclusion limits referred to in § 261.5(c).

[45 FR 33119, May 19, 1980, as amended at 55 FR 18726, May 4, 1990; 57 FR 14, Jan. 2, 1992]

Subpart C—Characteristics of Hazardous Waste

§ 261.20 General.

(a) A solid waste, as defined in § 261.2, which is not excluded from regulation as a hazardous waste under § 261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this subpart.

[*Comment:* § 262.11 of this chapter sets forth the generator's responsibility to determine whether his waste exhibits one or more of the characteristics identified in this subpart]

(b) A hazardous waste which is identified by a characteristic in this subpart is assigned every EPA Hazardous Waste Number that is applicable as set forth in this subpart. This number must be used in complying with the notification requirements of section 3010 of the Act and all applicable recordkeeping and reporting requirements under parts 262 through 265, 268, and 270 of this chapter.

(c) For purposes of this subpart, the Administrator will consider a sample obtained using any of the applicable sampling methods specified in appendix I to be a representative sample within the meaning of part 260 of this chapter.

[*Comment:* Since the appendix I sampling methods are not being formally adopted by the Administrator, a person who desires to employ an alternative sampling method is not required to demonstrate the equivalency of his method under the procedures set forth in §§ 260.20 and 260.21.]

[45 FR 33119, May 19, 1980, as amended at 51 FR 40636, Nov. 7, 1986; 55 FR 22684, June 1, 1990; 56 FR 3876, Jan. 31, 1991]

§ 261.21 Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has a flash point less than 60 °C (140 °F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D–93–79 or D–93–80 (incorporated by reference, see § 260.11), or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D–3278–78 (incorporated by reference, see § 260.11), or as determined by an equivalent test method approved by the Administrator under procedures set forth in §§ 260.20 and 260.21.

(2) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

(3) It is an ignitable compressed gas as defined in 49 CFR 173.300 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under §§ 260.20 and 260.21.

(4) It is an oxidizer as defined in 49 CFR 173.151.

(b) A solid waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981; 55 FR 22684, June 1, 1990]

§ 261.22 Characteristic of corrosivity.

(a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using Method 9040 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW–846, as incorporated by reference in § 260.11 of this chapter.

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55 °C (130 °F) as determined by the test method specified in NACE

(National Association of Corrosion Engineers) Standard TM-01-69 as standardized in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in §260.11 of this chapter.

(b) A solid waste that exhibits the characteristic of corrosivity has the EPA Hazardous Waste Number of D002.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981; 55 FR 22684, June 1, 1990; 58 FR 46049, Aug. 31, 1993]

§ 261.23 Characteristic of reactivity.

(a) A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has *any* of the following properties:

(1) It is normally unstable and readily undergoes violent change without detonating.

(2) It reacts violently with water.

(3) It forms potentially explosive mixtures with water.

(4) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

(7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

(8) It is a forbidden explosive as defined in 49 CFR 173.51, or a Class A explosive as defined in 49 CFR 173.53 or a Class B explosive as defined in 49 CFR 173.88.

(b) A solid waste that exhibits the characteristic of reactivity has the EPA Hazardous Waste Number of D003.

[45 FR 33119, May 19, 1980, as amended at 55 FR 22684, June 1, 1990]

§ 261.24 Toxicity characteristic.

(a) A solid waste exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in §260.11 of this chapter, the extract from a representative sample of the waste contains any of the contaminants listed in table 1 at the concentration equal to or greater than the respective value given in that table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purpose of this section.

(b) A solid waste that exhibits the characteristic of toxicity has the EPA Hazardous Waste Number specified in Table I which corresponds to the toxic contaminant causing it to be hazardous.

TABLE 1—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC

EPA HW No.[1]	Contaminant	CAS No.[2]	Regulatory Level (mg/L)
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	[4]200.0
D024	m-Cresol	108-39-4	[4]200.0
D025	p-Cresol	106-44-5	[4]200.0
D026	Cresol		[4]200.0
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	[3]0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide).	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	[3]0.13
D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentrachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	[3]5.0
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

[1] Hazardous waste number.
[2] Chemical abstracts service number.

[2] Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

[4] If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

[55 FR 11862, Mar. 29, 1990, as amended at 55 FR 22684, June 1, 1990; 55 FR 26987, June 29, 1990; 58 FR 46049, Aug. 31, 1993]

Subpart D—Lists of Hazardous Wastes

§ 261.30 General.

(a) A solid waste is a hazardous waste if it is listed in this subpart, unless it has been excluded from this list under §§ 260.20 and 260.22.

(b) The Administrator will indicate his basis for listing the classes or types of wastes listed in this subpart by employing one or more of the following Hazard Codes:

Ignitable Waste	(I)
Corrosive Waste	(C)
Reactive Waste	(R)
Toxicity Characteristic Waste	(E)
Acute Hazardous Waste	(H)
Toxic Waste	(T)

Appendix VII identifies the constituent which caused the Administrator to list the waste as a Toxicity Characteristic Waste (E) or Toxic Waste (T) in §§ 261.31 and 261.32.

(c) Each hazardous waste listed in this subpart is assigned an EPA Hazardous Waste Number which precedes the name of the waste. This number must be used in complying with the notification requirements of Section 3010 of the Act and certain recordkeeping and reporting requirements under parts 262 through 265, 268, and part 270 of this chapter.

(d) The following hazardous wastes listed in § 261.31 or § 261.32 are subject to the exclusion limits for acutely hazardous wastes established in § 261.5: EPA Hazardous Wastes Nos. FO20, FO21, FO22, FO23, FO26, and FO27.

[45 FR 33119, May 19, 1980, as amended at 48 FR 14294, Apr. 1, 1983; 50 FR 2000, Jan. 14, 1985; 51 FR 40636, Nov. 7, 1986; 55 FR 11863, Mar. 29, 1990]

§ 261.31 Hazardous wastes from non-specific sources.

(a) The following solid wastes are listed hazardous wastes from non-specific sources unless they are excluded under §§ 260.20 and 260.22 and listed in appendix IX.

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Generic:		
F001	The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F002	The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F003	The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I)*
F004	The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
F005	The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I,T)
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.	(T)
F007	Spent cyanide plating bath solutions from electroplating operations	(R, T)
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	(R, T)
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	(R, T)
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	(R, T)
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	(R, T)
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process.	(T)
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.	(T)
F020	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F021	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.	(H)
F022	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.	(H)
F023	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in § 261.31 or § 261.32.).	(T)
F025	Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	(T)
F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.	(H)
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing Hexachlorophene sythesized from prepurified 2,4,5-trichlorophenol as the sole component.).	(H)
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with § 261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	(T)
F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	(T)
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	(T)
F037	Petroleum refinery primary oil/water/solids separation sludge—Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oil cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in § 261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under § 261.4(a)(12)(i), if those residuals are to be disposed of..	(T)
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge—Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in § 261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing.	(T)
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.).	(T)

(b) Listing Specific Definitions: (1) For the purposes of the F037 and F038 listings, oil/water/solids is defined as oil and/or water and/or solids.(2) (i) For the purposes of the F037 and F038 listings, aggressive biological treatment units are defined as units which employ one of the following four treatment methods: activated sludge; trickling filter; rotating biological contactor for the continuous accelerated biological oxidation of wastewaters; or high-rate aeration. High-rate aeration is a system of surface impoundments or tanks, in which intense mechanical aeration is used to completely mix the wastes, enhance biological activity, and (A) the units employ a minimum of 6 hp per million gallons of treatment volume; and either (B) the hydraulic retention time of the unit is no longer than 5 days; or (C) the hydraulic retention time is no longer than 30 days and the unit does not generate a sludge that is a hazardous waste by the Toxicity Characteristic.

(ii) Generators and treatment, storage and disposal facilities have the burden of proving that their sludges are exempt from listing as F037 and F038 wastes

under this definition. Generators and treatment, storage and disposal facilities must maintain, in their operating or other onsite records, documents and data sufficient to prove that: (A) the unit is an aggressive biological treatment unit as defined in this subsection; and (B) the sludges sought to be exempted from the definitions of F037 and/or F038 were actually generated in the aggressive biological treatment unit.

(3) (i) For the purposes of the F037 listing, sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement.

(ii) For the purposes of the F038 listing,

(A) sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement and

(B) floats are considered to be generated at the moment they are formed in the top of the unit.

[46 FR 4617, Jan. 16, 1981]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 261.31, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 261.32 Hazardous wastes from specific sources.

The following solid wastes are listed hazardous wastes from specific sources unless they are excluded under §§ 260.20 and 260.22 and listed in appendix IX.

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Wood preservation: K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	(T)
Inorganic pigments:		
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	(T)
K003	Wastewater treatment sludge from the production of molybdate orange pigments	(T)
K004	Wastewater treatment sludge from the production of zinc yellow pigments	(T)
K005	Wastewater treatment sludge from the production of chrome green pigments	(T)
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).	(T)
K007	Wastewater treatment sludge from the production of iron blue pigments	(T)
K008	Oven residue from the production of chrome oxide green pigments	(T)
Organic chemicals:		
K009	Distillation bottoms from the production of acetaldehyde from ethylene	(T)
K010	Distillation side cuts from the production of acetaldehyde from ethylene	(T)
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile	(R, T)
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile	(R, T)
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile	(T)
K015	Still bottoms from the distillation of benzyl chloride	(T)
K016	Heavy ends or distillation residues from the production of carbon tetrachloride	(T)
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	(T)
K018	Heavy ends from the fractionation column in ethyl chloride production	(T)
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	(T)
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production	(T)
K021	Aqueous spent antimony catalyst waste from fluoromethanes production	(T)
K022	Distillation bottom tars from the production of phenol/acetone from cumene	(T)
K023	Distillation light ends from the production of phthalic anhydride from naphthalene	(T)
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene	(T)
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene	(T)
K026	Stripping still tails from the production of methy ethyl pyridines	(T)
K027	Centrifuge and distillation residues from toluene diisocyanate production	(R, T)
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	(T)
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane	(T)
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.	(T)
K083	Distillation bottoms from aniline production	(T)
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes	(T)
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene	(T)
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene	(T)
K095	Distillation bottoms from the production of 1,1,1-trichloroethane	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Haza code
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane	(T)
K103	Process residues from aniline extraction from the production of aniline	(T)
K104	Combined wastewater streams generated from nitrobenzene/aniline production	(T)
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	(T)
K107	Column bottoms from product separation from the production of 1,1-dimethyl-hydrazine (UDMH) from carboxylic acid hydrazines.	(C,T)
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(I,T)
K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(T)
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(T)
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene	(C,T)
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	(T)
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	(T)
K118	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	(T)
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	(T)
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, (This waste does not include still bottoms from the distillation of benzyl chloride.).	(T)
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K159	Organics from the treatment of thiocarbamate wastes	(T)
K161	Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.).	(R,T)
Inorganic chemicals:		
K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.	(T)
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	(T)
K106	Wastewater treatment sludge from the mercury cell process in chlorine production	(T)
Pesticides:		
K031	By-product salts generated in the production of MSMA and cacodylic acid	(T)
K032	Wastewater treatment sludge from the production of chlordane	(T)
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	(T)
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	(T)
K035	Wastewater treatment sludges generated in the production of creosote	(T)
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
K037	Wastewater treatment sludges from the production of disulfoton	(T)
K038	Wastewater from the washing and stripping of phorate production	(T)
K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	(T)
K040	Wastewater treatment sludge from the production of phorate	(T)
K041	Wastewater treatment sludge from the production of toxaphene	(T)
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	(T)
K043	2,6-Dichlorophenol waste from the production of 2,4-D	(T)
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	(T)
K098	Untreated process wastewater from the production of toxaphene	(T)
K099	Untreated wastewater from the production of 2,4-D	(T)
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt.	(T)
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	(C, T)
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	(T)
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	(T)
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.	(C, T)
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.	(T)
Explosives:		
K044	Wastewater treatment sludges from the manufacturing and processing of explosives	(R)
K045	Spent carbon from the treatment of wastewater containing explosives	(R)
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	(T)
K047	Pink/red water from TNT operations	(R)
Petroleum refining:		
K048	Dissolved air flotation (DAF) float from the petroleum refining industry	(T)
K049	Slop oil emulsion solids from the petroleum refining industry	(T)
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry	(T)
K051	API separator sludge from the petroleum refining industry	(T)
K052	Tank bottoms (leaded) from the petroleum refining industry	(T)
K169	Crude oil storage tank sediment from petroleum refining operations	(T)
K170	Clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations.	(T)
K171	Spent Hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	(I,T)
K172	Spent Hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	(I,T)
Iron and steel:		
K061	Emission control dust/sludge from the primary production of steel in electric furnaces	(T)
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	(C,T)
Primary copper:		
Primary lead:		
Primary zinc:		
Primary aluminum:		
K088	Spent potliners from primary aluminum reduction	(T)
Ferroalloys:		
Secondary lead:		
K069	Emission control dust/sludge from secondary lead smelting. (NOTE: This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further administrative action is taken. If EPA takes further action effecting this stay, EPA will publish a notice of the action in the Federal Register.	(T)
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	(T)
Veterinary pharmaceuticals:		
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Ink formulation:		
K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	(T)
Coking:		
K060	Ammonia still lime sludge from coking operations	(T)
K087	Decanter tank tar sludge from coking operations	(T)
K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations).	(T)
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.	(T)
K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.	(T)
K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.	(T)
K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	(T)
K147	Tar storage tank residues from coal tar refining	(T)
K148	Residues from coal tar distillation, including but not limited to, still bottoms	(T)

[46 FR 4618, Jan. 16, 1981]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 261.32, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 261.33 Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof.

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded as described in § 261.2(a)(2)(i), when they are mixed with waste oil or used oil or other material and applied to the land for dust suppression or road treatment, when they are otherwise applied to the land in lieu of their original intended use or when they are contained in products that are applied to the land in lieu of their original intended use, or when, in lieu of their original intended use, they are produced for use as (or as a component of) a fuel, distributed for use as a fuel, or burned as a fuel.

(a) Any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section.

(b) Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (e) or (f) of this section.

(c) Any residue remaining in a container or in an inner liner removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraphs (e) or (f) of this section, unless the container is empty as defined in § 261.7(b) of this chapter.

[*Comment:* Unless the residue is being beneficially used or reused, or legitimately recycled or reclaimed; or being accumulated, stored, transported or treated prior to such use, re-use, recycling or reclamation, EPA considers the residue to be intended for discard, and thus, a hazardous waste. An example of a legitimate re-use of the residue would be where the residue remains in the container and the container is used to hold the same commercial chemical product or manufacturing chemical intermediate it previously held. An example of the discard of the residue would be where the drum is sent to a drum reconditioner who reconditions the drum but discards the residue.]

(d) Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill into or on any land or water of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of

this section, or any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any off-specification chemical product and manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (e) or (f) of this section.

Comment: The phrase "commercial chemical product or manufacturing chemical intermediate having the generic name listed in . . ." refers to a chemical substance which is manufactured or formulated for commercial or manufacturing use which consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient. It does not refer to a material, such as a manufacturing process waste, that contains any of the substances listed in paragraph (e) or (f). Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in paragraph (e) or (f), such waste will be listed in either § 261.31 or § 261.32 or will be identified as a hazardous waste by the characteristics set forth in subpart C of this part.]

(e) The commercial chemical products, manufacturing chemical intermediates or off-specification commercial chemical products or manufacturing chemical intermediates referred to in paragraphs (a) through (d) of this section, are identified as acute hazardous wastes (H) and are subject to be the small quantity exclusion defined in § 261.5(e).

[*Comment:* For the convenience of the regulated community the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), and R (Reactivity). Absence of a letter indicates that the compound only is listed for acute toxicity.]

These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous waste No.	Chemical abstracts No.	Substance
	107-20-0	Acetaldehyde, chloro-
	591-08-2	Acetamide, N-(aminothioxomethyl)-
	640-19-7	Acetamide, 2-fluoro-
	62-74-8	Acetic acid, fluoro-, sodium salt
	591-08-2	1-Acetyl-2-thiourea
	107-02-8	Acrolein
	116-06-3	Aldicarb
	1646-88-4	Aldicarb sulfone
	309-00-2	Aldrin
	107-18-6	Allyl alcohol
	20859-73-8	Aluminum phosphide (R,T)
	2763-96-4	5-(Aminomethyl)-3-isoxazolol
	504-24-5	4-Aminopyridine
	131-74-8	Ammonium picrate (R)
	7803-55-6	Ammonium vanadate
	506-61-6	Argentate(1-), bis(cyano-C)-, potassium
	7778-39-4	Arsenic acid H_3AsO_4
	1327-53-3	Arsenic oxide As_2O_3
	1303-28-2	Arsenic oxide As_2O_5
	1303-28-2	Arsenic pentoxide
	1327-53-3	Arsenic trioxide
	692-42-2	Arsine, diethyl-
	696-28-6	Arsonous dichloride, phenyl-
	151-56-4	Aziridine
	75-55-8	Aziridine, 2-methyl-
	542-62-1	Barium cyanide
	106-47-8	Benzenamine, 4-chloro-
	100-01-6	Benzenamine, 4-nitro-
	100-44-7	Benzene, (chloromethyl)-
	51-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-
	122-09-8	Benzeneethanamine, alpha,alpha-dimethyl-
	108-98-5	Benzenethiol
	1563-66-2	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate
	57-64-7	Benzoic acid, 2-hydroxy-, compd. with (3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl methylcarbamate ester (1:1)
	181-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations greater than 0.3%
	100-44-7	Benzyl chloride
	7440-41-7	Beryllium powder
	598-31-2	Bromoacetone
	357-57-3	Brucine

Hazardous waste No.	Chemical abstracts No.	Substance
P045	39196–18–4	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O-[(methylamino)carbonyl] oxime
P021	592–01–8	Calcium cyanide
P021	592–01–8	Calcium cyanide $Ca(CN)_2$
P189	55285–14–8	Carbamic acid, [(dibutylamino)- thio]methyl-, 2,3-dihydro-2,2-dimethyl- 7-benzofuranyl ester.
P191	644–64–4	Carbamic acid, dimethyl-, 1-[(dimethyl- amino)carbonyl]- 5-methyl-1H- pyrazol-3-yl ester.
P192	119–38–0	Carbamic acid, dimethyl-, 3-methyl-1- (1-methylethyl)-1H- pyrazol-5-yl ester.
P190	1129–41–5	Carbamic acid, methyl-, 3-methylphenyl ester.
P127	1563–66–2	Carbofuran.
P022	75–15–0	Carbon disulfide
P095	75–44–5	Carbonic dichloride
P189	55285–14–8	Carbosulfan.
P023	107–20–0	Chloroacetaldehyde
P024	106–47–8	p-Chloroaniline
P026	5344–82–1	1-(o-Chlorophenyl)thiourea
P027	542–76–7	3-Chloropropionitrile
P029	544–92–3	Copper cyanide
P029	544–92–3	Copper cyanide Cu(CN)
P202	64–00–6	m-Cumenyl methylcarbamate.
P030	.....	Cyanides (soluble cyanide salts), not otherwise specified
P031	460–19–5	Cyanogen
P033	506–77–4	Cyanogen chloride
P033	506–77–4	Cyanogen chloride (CN)Cl
P034	131–89–5	2-Cyclohexyl-4,6-dinitrophenol
P016	542–88–1	Dichloromethyl ether
P036	696–28–6	Dichlorophenylarsine
P037	60–57–1	Dieldrin
P038	692–42–2	Diethylarsine
P041	311–45–5	Diethyl-p-nitrophenyl phosphate
P040	297–97–2	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	55–91–4	Diisopropylfluorophosphate (DFP)
P004	309–00–2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa- chloro-1,4,4a,5,8,8a,-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-
P060	465–73–6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa- chloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-
P037	60–57–1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta, 7aalpha)-
P051	[1]72–20–8	2,7:3,6-Dimethanonaphth [2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta, 7aalpha)-, & metabolites
P044	60–51–5	Dimethoate
P046	122–09–8	alpha,alpha-Dimethylphenethylamine
P191	644–64–4	Dimetilan.
P047	[1]534–52–1	4,6-Dinitro-o-cresol, & salts
P048	51–28–5	2,4-Dinitrophenol
P020	88–85–7	Dinoseb
P085	152–16–9	Diphosphoramide, octamethyl-
P111	107–49–3	Diphosphoric acid, tetraethyl ester
P039	298–04–4	Disulfoton
P049	541–53–7	Dithiobiuret
P185	26419–73–8	1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O- [(methylamino)- carbonyl]oxime.
P050	115–29–7	Endosulfan
P088	145–73–3	Endothall
P051	72–20–8	Endrin
P051	72–20–8	Endrin, & metabolites
P042	51–43–4	Epinephrine
P031	460–19–5	Ethanedinitrile
P194	23135–22–0	Ethanimidothioc acid, 2-(dimethylamino)-N-[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester.
P066	16752–77–5	Ethanimidothioic acid, N-[[(methylamino)carbonyl]oxy]-, methyl ester
P101	107–12–0	Ethyl cyanide
P054	151–56–4	Ethyleneimine
P097	52–85–7	Famphur
P056	7782–41–4	Fluorine
P057	640–19–7	Fluoroacetamide
P058	62–74–8	Fluoroacetic acid, sodium salt
P198	23422–53–9	Formetanate hydrochloride.
P197	17702–57–7	Formparanate.
P065	628–86–4	Fulminic acid, mercury(2+) salt (R,T)
P059	76–44–8	Heptachlor
P062	757–58–4	Hexaethyl tetraphosphate

Hazardous waste No.	Chemical abstracts No.	Substance
P116	79–19–6	Hydrazinecarbothioamide
P068	60–34–4	Hydrazine, methyl-
P063	74–90–8	Hydrocyanic acid
P063	74–90–8	Hydrogen cyanide
P096	7803–51–2	Hydrogen phosphide
P060	465–73–6	Isodrin
P192	119–38–0	Isolan.
P202	64–00–6	3-Isopropylphenyl N-methylcarbamate.
P007	2763–96–4	3(2H)-Isoxazolone, 5-(aminomethyl)-
P196	15339–36–3	Manganese, bis(dimethylcarbamodithioato-S,S')-,
P196	15339–36–3	Manganese dimethyldithiocarbamate.
P092	62–38–4	Mercury, (acetato-O)phenyl-
P065	628–86–4	Mercury fulminate (R,T)
P082	62–75–9	Methanamine, N-methyl-N-nitroso-
P064	624–83–9	Methane, isocyanato-
P016	542–88–1	Methane, oxybis[chloro-
P112	509–14–8	Methane, tetranitro- (R)
P118	75–70–7	Methanethiol, trichloro-
P198	23422–53–9	Methanimidamide, N,N-dimethyl-N'-[3-[[(methylamino)-carbonyl]oxy]phenyl]-, monohydrochloride.
P197	17702–57–7	Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[[(methylamino)carbonyl]oxy]phenyl]-
P050	115–29–7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide
P059	76–44–8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
P199	2032–65–7	Methiocarb.
P066	16752–77–5	Methomyl
P068	60–34–4	Methyl hydrazine
P064	624–83–9	Methyl isocyanate
P069	75–86–5	2-Methyllactonitrile
P071	298–00–0	Methyl parathion
P190	1129–41–5	Metolcarb.
P128	315–8–4	Mexacarbate.
P072	86–88–4	alpha-Naphthylthiourea
P073	13463–39–3	Nickel carbonyl
P073	13463–39–3	Nickel carbonyl $Ni(CO)_4$, (T-4)-
P074	557–19–7	Nickel cyanide
P074	557–19–7	Nickel cynaide $Ni(CN)_2$
P075	[1]54–11–5	Nicotine, & salts
P076	10102–43–9	Nitric oxide
P077	100–01–6	p-Nitroaniline
P078	10102–44–0	Nitrogen dioxide
P076	10102–43–9	Nitrogen oxide NO
P078	10102–44–0	Nitrogen oxide NO_2
P081	55–63–0	Nitroglycerine (R)
P082	62–75–9	N-Nitrosodimethylamine
P084	4549–40–0	N-Nitrosomethylvinylamine
P085	152–16–9	Octamethylpyrophosphoramide
P087	20816–12–0	Osmium oxide OsO_4, (T-4)-
P087	20816–12–0	Osmium tetroxide
P088	145–73–3	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P194	23135–22–0	Oxamyl.
P089	56–38–2	Parathion
P034	131–89–5	Phenol, 2-cyclohexyl-4,6-dinitro-
P048	51–28–5	Phenol, 2,4-dinitro-
P047	[1]534–52–1	Phenol, 2-methyl-4,6-dinitro-, & salts
P020	88–85–7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P009	131–74–8	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P128	315–18–4	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester).
P199	2032–65–7	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate
P202	64–00–6	Phenol, 3-(1-methylethyl)-, methyl carbamate.
P201	2631–37–0	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate.
P092	62–38–4	Phenylmercury acetate
P093	103–85–5	Phenylthiourea
P094	298–02–2	Phorate
P095	75–44–5	Phosgene
P096	7803–51–2	Phosphine
P041	311–45–5	Phosphoric acid, diethyl 4-nitrophenyl ester
P039	298–04–4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P094	298–02–2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
P044	60–51–5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester

Hazardous waste No.	Chemical abstracts No.	Substance
P043	55–91–4	Phosphorofluoridic acid, bis(1-methylethyl) ester
P089	56–38–2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P040	297–97–2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
P097	52–85–7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester
P071	298–00–0	Phosphorothioic acid, O,O,-dimethyl O-(4-nitrophenyl) ester
P204	57–47–6	Physostigmine.
P188	57–64–7	Physostigmine salicylate.
P110	78–00–2	Plumbane, tetraethyl-
P098	151–50–8	Potassium cyanide
P098	151–50–8	Potassium cyanide K(CN)
P099	506–61–6	Potassium silver cyanide
P201	2631–37–0	Promecarb
P070	116–06–3	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P203	1646–88–4	Propanal, 2-methyl-2-(methyl-sulfonyl)-, O-[(methylamino)carbonyl] oxime.
P101	107–12–0	Propanenitrile
P027	542–76–7	Propanenitrile, 3-chloro-
P069	75–86–5	Propanenitrile, 2-hydroxy-2-methyl-
P081	55–63–0	1,2,3-Propanetriol, trinitrate (R)
P017	598–31–2	2-Propanone, 1-bromo-
P102	107–19–7	Propargyl alcohol
P003	107–02–8	2-Propenal
P005	107–18–6	2-Propen-1-ol
P067	75–55–8	1,2-Propylenimine
P102	107–19–7	2-Propyn-1-ol
P008	504–24–5	4-Pyridinamine
P075	[1] 54–11–5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts
P204	57–47–6	Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester), (3aS-cis)-.
P114	12039–52–0	Selenious acid, dithallium(1+) salt
P103	630–10–4	Selenourea
P104	506–64–9	Silver cyanide
P104	506–64–9	Silver cyanide Ag(CN)
P105	26628–22–8	Sodium azide
P106	143–33–9	Sodium cyanide
P106	143–33–9	Sodium cyanide Na(CN)
P108	[1] 57–24–9	Strychnidin-10-one, & salts
P018	357–57–3	Strychnidin-10-one, 2,3-dimethoxy-
P108	[1] 57–24–9	Strychnine, & salts
P115	7446–18–6	Sulfuric acid, dithallium(1+) salt
P109	3689–24–5	Tetraethyldithiopyrophosphate
P110	78–00–2	Tetraethyl lead
P111	107–49–3	Tetraethyl pyrophosphate
P112	509–14–8	Tetranitromethane (R)
P062	757–58–4	Tetraphosphoric acid, hexaethyl ester
P113	1314–32–5	Thallic oxide
P113	1314–32–5	Thallium oxide Tl_2O_3
P114	12039–52–0	Thallium(I) selenite
P115	7446–18–6	Thallium(I) sulfate
P109	3689–24–5	Thiodiphosphoric acid, tetraethyl ester
P045	39196–18–4	Thiofanox
P049	541–53–7	Thioimidodicarbonic diamide $[(H_2N)C(S)]_2NH$
P014	108–98–5	Thiophenol
P116	79–19–6	Thiosemicarbazide
P026	5344–82–1	Thiourea, (2-chlorophenyl)-
P072	86–88–4	Thiourea, 1-naphthalenyl-
P093	103–85–5	Thiourea, phenyl-
P185	26419–73–8	Tirpate.
P123	8001–35–2	Toxaphene
P118	75–70–7	Trichloromethanethiol
P119	7803–55–6	Vanadic acid, ammonium salt
P120	1314–62–1	Vanadium oxide V_2O_5
P120	1314–62–1	Vanadium pentoxide
P084	4549–40–0	Vinylamine, N-methyl-N-nitroso-
P001	[1] 81–81–2	Warfarin, & salts, when present at concentrations greater than 0.3%
P205	137–30–4	Zinc, bis(dimethylcarbamodithioato-S,S')-,
P121	557–21–1	Zinc cyanide
P121	557–21–1	Zinc cyanide $Zn(CN)_2$
P122	1314–84–7	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10% (R,T)
P205	137–30–4	Ziram.

[1] CAS Number given for parent compound only.

(f) The commercial chemical products, manfacturing chemical intermediates, or off-specification commercial chemical products referred to in paragraphs (a) through (d) of this section, are identified as toxic wastes (T), unless otherwise designated and are subject to the small quantity generator exclusion defined in §261.5 (a) and (g).

[*Comment:* For the convenience of the regulated community, the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), R (Reactivity), I (Ignitability) and C (Corrosivity). Absence of a letter indicates that the compound is only listed for toxicity.]

These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous waste No.	Chemical abstracts No.	Substance
U394	30558-43-1	A2213.
U001	75-07-0	Acetaldehyde (I)
U034	75-87-6	Acetaldehyde, trichloro-
U187	62-44-2	Acetamide, N-(4-ethoxyphenyl)-
U005	53-96-3	Acetamide, N-9H-fluoren-2-yl-
U240	194-75-7	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters
U112	141-78-6	Acetic acid ethyl ester (I)
U144	301-04-2	Acetic acid, lead(2+) salt
U214	563-68-8	Acetic acid, thallium(1+) salt
See F027	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-
U002	67-64-1	Acetone (I)
U003	75-05-8	Acetonitrile (I,T)
U004	98-86-2	Acetophenone
U005	53-96-3	2-Acetylaminofluorene
U006	75-36-5	Acetyl chloride (C,R,T)
U007	79-06-1	Acrylamide
U008	79-10-7	Acrylic acid (I)
U009	107-13-1	Acrylonitrile
U011	61-82-5	Amitrole
U012	62-53-3	Aniline (I,T)
U136	75-60-5	Arsinic acid, dimethyl-
U014	492-80-8	Auramine
U015	115-02-6	Azaserine
U010	50-07-7	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[(aminocarbonyl)oxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta,8aalpha,8balpha)]-
U280	101-27-9	Barban.
U278	22781-23-3	Bendiocarb.
U364	22961-82-6	Bendiocarb phenol.
U271	17804-35-2	Benomyl.
U157	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	225-51-4	Benz[c]acridine
U017	98-87-3	Benzal chloride
U192	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
U018	56-55-3	Benz[a]anthracene
U094	57-97-6	Benz[a]anthracene, 7,12-dimethyl-
U012	62-53-3	Benzenamine (I,T)
U014	492-80-8	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl-
U049	3165-93-3	Benzenamine, 4-chloro-2-methyl-, hydrochloride
U093	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
U328	95-53-4	Benzenamine, 2-methyl-
U353	106-49-0	Benzenamine, 4-methyl-
U158	101-14-4	Benzenamine, 4,4'-methylenebis[2-chloro-
U222	636-21-5	Benzenamine, 2-methyl-, hydrochloride
U181	99-55-8	Benzenamine, 2-methyl-5-nitro-
U019	71-43-2	Benzene (I,T)
U038	510-15-6	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
U030	101-55-3	Benzene, 1-bromo-4-phenoxy-
U035	305-03-3	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-
U037	108-90-7	Benzene, chloro-
U221	25376-45-8	Benzenediamine, ar-methyl-
U028	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
U069	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
U102	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
U070	95-50-1	Benzene, 1,2-dichloro-
U071	541-73-1	Benzene, 1,3-dichloro-
U072	106-46-7	Benzene, 1,4-dichloro-

Hazardous waste No.	Chemical abstracts No.	Substance
U060	72–54–8	Benzene, 1,1′-(2,2-dichloroethylidene)bis[4-chloro-
U017	98–87–3	Benzene, (dichloromethyl)-
U223	26471–62–5	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	1330–20–7	Benzene, dimethyl- (I,T)
U201	108–46–3	1,3-Benzenediol
U127	118–74–1	Benzene, hexachloro-
U056	110–82–7	Benzene, hexahydro- (I)
U220	108–88–3	Benzene, methyl-
U105	121–14–2	Benzene, 1-methyl-2,4-dinitro-
U106	606–20–2	Benzene, 2-methyl-1,3-dinitro-
U055	98–82–8	Benzene, (1-methylethyl)- (I)
U169	98–95–3	Benzene, nitro-
U183	608–93–5	Benzene, pentachloro-
U185	82–68–8	Benzene, pentachloronitro-
U020	98–09–9	Benzenesulfonic acid chloride (C,R)
U020	98–09–9	Benzenesulfonyl chloride (C,R)
U207	95–94–3	Benzene, 1,2,4,5-tetrachloro-
U061	50–29–3	Benzene, 1,1′-(2,2,2-trichloroethylidene)bis[4-chloro-
U247	72–43–5	Benzene, 1,1′-(2,2,2-trichloroethylidene)bis[4- methoxy-
U023	98–07–7	Benzene, (trichloromethyl)-
U234	99–35–4	Benzene, 1,3,5-trinitro-
U021	92–87–5	Benzidine
U202	[1] 81–07–2	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts
U278	22781–23–3	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate.
U364	22961–82–6	1,3-Benzodioxol-4-ol, 2,2-dimethyl-,
U203	94–59–7	1,3-Benzodioxole, 5-(2-propenyl)-
U141	120–58–1	1,3-Benzodioxole, 5-(1-propenyl)-
U367	1563–38–8	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-
U090	94–58–6	1,3-Benzodioxole, 5-propyl-
U064	189–55–9	Benzo[rst]pentaphene
U248	[1] 81–81–2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenyl-butyl)-, & salts, when present at concentrations of 0.3% or less
U022	50–32–8	Benzo[a]pyrene
U197	106–51–4	p-Benzoquinone
U023	98–07–7	Benzotrichloride (C,R,T)
U085	1464–53–5	2,2′-Bioxirane
U021	92–87–5	[1,1′-Biphenyl]-4,4′-diamine
U073	91–94–1	[1,1′-Biphenyl]-4,4′-diamine, 3,3′-dichloro-
U091	119–90–4	[1,1′-Biphenyl]-4,4′-diamine, 3,3′-dimethoxy-
U095	119–93–7	[1,1′-Biphenyl]-4,4′-diamine, 3,3′-dimethyl-
U225	75–25–2	Bromoform
U030	101–55–3	4-Bromophenyl phenyl ether
U128	87–68–3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	924–16–3	1-Butanamine, N-butyl-N-nitroso-
U031	71–36–3	1-Butanol (I)
U159	78–93–3	2-Butanone (I,T)
U160	1338–23–4	2-Butanone, peroxide (R,T)
U053	4170–30–3	2-Butenal
U074	764–41–0	2-Butene, 1,4-dichloro- (I,T)
U143	303–34–4	2-Butenoic acid, 2-methyl-, 7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-
U031	71–36–3	n-Butyl alcohol (I)
U136	75–60–5	Cacodylic acid
U032	13765–19–0	Calcium chromate
U372	10605–21–7	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester.
U271	17804–35–2	Carbamic acid, [1-[(butylamino)carbonyl]-1H-benzimidazol-2-yl]-, methyl ester.
U280	101–27–9	Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester.
U238	51–79–6	Carbamic acid, ethyl ester
U178	615–53–2	Carbamic acid, methylnitroso-, ethyl ester
U373	122–42–9	Carbamic acid, phenyl-, 1-methylethyl ester.
U409	23564–05–8	Carbamic acid, [1,2-phenylenebis (iminocarbonothioyl)]bis-, dimethyl ester.
U097	79–44–7	Carbamic chloride, dimethyl-
U389	2303–17–5	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester.
U387	52888–80–9	Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester.
U114	[1] 111–54–6	Carbamodithioic acid, 1,2-ethanediylbis-, salts & esters
U062	2303–16–4	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester
U279	63–25–2	Carbaryl.
U372	10605–21–7	Carbendazim.
U367	1563–38–8	Carbofuran phenol.

Hazardous waste No.	Chemical abstracts No.	Substance
U215	6533-73-9	Carbonic acid, dithallium(1+) salt
U033	353-50-4	Carbonic difluoride
U156	79-22-1	Carbonochloridic acid, methyl ester (I,T)
U033	353-50-4	Carbon oxyfluoride (R,T)
U211	56-23-5	Carbon tetrachloride
U034	75-87-6	Chloral
U035	305-03-3	Chlorambucil
U036	57-74-9	Chlordane, alpha & gamma isomers
U026	494-03-1	Chlornaphazin
U037	108-90-7	Chlorobenzene
U038	510-15-6	Chlorobenzilate
U039	59-50-7	p-Chloro-m-cresol
U042	110-75-8	2-Chloroethyl vinyl ether
U044	67-66-3	Chloroform
U046	107-30-2	Chloromethyl methyl ether
U047	91-58-7	beta-Chloronaphthalene
U048	95-57-8	o-Chlorophenol
U049	3165-93-3	4-Chloro-o-toluidine, hydrochloride
U032	13765-19-0	Chromic acid H_2CrO_4, calcium salt
U050	218-01-9	Chrysene
U051	.....	Creosote
U052	1319-77-3	Cresol (Cresylic acid)
U053	4170-30-3	Crotonaldehyde
U055	98-82-8	Cumene (I)
U246	506-68-3	Cyanogen bromide (CN)Br
U197	106-51-4	2,5-Cyclohexadiene-1,4-dione
U056	110-82-7	Cyclohexane (I)
U129	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-
U057	108-94-1	Cyclohexanone (I)
U130	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
U058	50-18-0	Cyclophosphamide
U240	[1]94-75-7	2,4-D, salts & esters
U059	20830-81-3	Daunomycin
U060	72-54-8	DDD
U061	50-29-3	DDT
U062	2303-16-4	Diallate
U063	53-70-3	Dibenz[a,h]anthracene
U064	189-55-9	Dibenzo[a,i]pyrene
U066	96-12-8	1,2-Dibromo-3-chloropropane
U069	84-74-2	Dibutyl phthalate
U070	95-50-1	o-Dichlorobenzene
U071	541-73-1	m-Dichlorobenzene
U072	106-46-7	p-Dichlorobenzene
U073	91-94-1	3,3'-Dichlorobenzidine
U074	764-41-0	1,4-Dichloro-2-butene (I,T)
U075	75-71-8	Dichlorodifluoromethane
U078	75-35-4	1,1-Dichloroethylene
U079	156-60-5	1,2-Dichloroethylene
U025	111-44-4	Dichloroethyl ether
U027	108-60-1	Dichloroisopropyl ether
U024	111-91-1	Dichloromethoxy ethane
U081	120-83-2	2,4-Dichlorophenol
U082	87-65-0	2,6-Dichlorophenol
U084	542-75-6	1,3-Dichloropropene
U085	1464-53-5	1,2:3,4-Diepoxybutane (I,T)
U108	123-91-1	1,4-Diethyleneoxide
U028	117-81-7	Diethylhexyl phthalate
U395	5952-26-1	Diethylene glycol, dicarbamate.
U086	1615-80-1	N,N'-Diethylhydrazine
U087	3288-58-2	O,O-Diethyl S-methyl dithiophosphate
U088	84-66-2	Diethyl phthalate
U089	56-53-1	Diethylstilbesterol
U090	94-58-6	Dihydrosafrole
U091	119-90-4	3,3'-Dimethoxybenzidine
U092	124-40-3	Dimethylamine (I)
U093	60-11-7	p-Dimethylaminoazobenzene
U094	57-97-6	7,12-Dimethylbenz[a]anthracene
U095	119-93-7	3,3'-Dimethylbenzidine
U096	80-15-9	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	79-44-7	Dimethylcarbamoyl chloride
U098	57-14-7	1,1-Dimethylhydrazine

Hazardous waste No.	Chemical abstracts No.	Substance
U099	540–73–8	1,2-Dimethylhydrazine
U101	105–67–9	2,4-Dimethylphenol
U102	131–11–3	Dimethyl phthalate
U103	77–78–1	Dimethyl sulfate
U105	121–14–2	2,4-Dinitrotoluene
U106	606–20–2	2,6-Dinitrotoluene
U107	117–84–0	Di-n-octyl phthalate
U108	123–91–1	1,4-Dioxane
U109	122–66–7	1,2-Diphenylhydrazine
U110	142–84–7	Dipropylamine (I)
U111	621–64–7	Di-n-propylnitrosamine
U041	106–89–8	Epichlorohydrin
U001	75–07–0	Ethanal (I)
U404	121–44–8	Ethanamine, N,N-diethyl-
U174	55–18–5	Ethanamine, N-ethyl-N-nitroso-
U155	91–80–5	1,2-Ethanediamine, N,N-dimethyl-N′-2-pyridinyl-N′-(2-thienylmethyl)-
U067	106–93–4	Ethane, 1,2-dibromo-
U076	75–34–3	Ethane, 1,1-dichloro-
U077	107–06–2	Ethane, 1,2-dichloro-
U131	67–72–1	Ethane, hexachloro-
U024	111–91–1	Ethane, 1,1′-[methylenebis(oxy)]bis[2-chloro-
U117	60–29–7	Ethane, 1,1′-oxybis-(I)
U025	111–44–4	Ethane, 1,1′-oxybis[2-chloro-
U184	76–01–7	Ethane, pentachloro-
U208	630–20–6	Ethane, 1,1,1,2-tetrachloro-
U209	79–34–5	Ethane, 1,1,2,2-tetrachloro-
U218	62–55–5	Ethanethioamide
U226	71–55–6	Ethane, 1,1,1-trichloro-
U227	79–00–5	Ethane, 1,1,2-trichloro-
U410	59669–26–0	Ethanimidothioic acid, N,N′- [thiobis[(methylimino)carbonyloxy]]bis-, dimethyl ester
U394	30558–43–1	Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ester.
U359	110–80–5	Ethanol, 2-ethoxy-
U173	1116–54–7	Ethanol, 2,2′-(nitrosoimino)bis-
U395	5952–26–1	Ethanol, 2,2′-oxybis-, dicarbamate.
U004	98–86–2	Ethanone, 1-phenyl-
U043	75–01–4	Ethene, chloro-
U042	110–75–8	Ethene, (2-chloroethoxy)-
U078	75–35–4	Ethene, 1,1-dichloro-
U079	156–60–5	Ethene, 1,2-dichloro-, (E)-
U210	127–18–4	Ethene, tetrachloro-
U228	79–01–6	Ethene, trichloro-
U112	141–78–6	Ethyl acetate (I)
U113	140–88–5	Ethyl acrylate (I)
U238	51–79–6	Ethyl carbamate (urethane)
U117	60–29–7	Ethyl ether (I)
U114	[1] 111–54–6	Ethylenebisdithiocarbamic acid, salts & esters
U067	106–93–4	Ethylene dibromide
U077	107–06–2	Ethylene dichloride
U359	110–80–5	Ethylene glycol monoethyl ether
U115	75–21–8	Ethylene oxide (I,T)
U116	96–45–7	Ethylenethiourea
U076	75–34–3	Ethylidene dichloride
U118	97–63–2	Ethyl methacrylate
U119	62–50–0	Ethyl methanesulfonate
U120	206–44–0	Fluoranthene
U122	50–00–0	Formaldehyde
U123	64–18–6	Formic acid (C,T)
U124	110–00–9	Furan (I)
U125	98–01–1	2-Furancarboxaldehyde (I)
U147	108–31–6	2,5-Furandione
U213	109–99–9	Furan, tetrahydro-(I)
U125	98–01–1	Furfural (I)
U124	110–00–9	Furfuran (I)
U206	18883–66–4	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-
U206	18883–66–4	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)-carbonyl]amino]-
U126	765–34–4	Glycidylaldehyde
U163	70–25–7	Guanidine, N-methyl-N′-nitro-N-nitroso-
U127	118–74–1	Hexachlorobenzene
U128	87–68–3	Hexachlorobutadiene
U130	77–47–4	Hexachlorocyclopentadiene
U131	67–72–1	Hexachloroethane

Hazardous waste No.	Chemical abstracts No.	Substance
U132	70–30–4	Hexachlorophene
U243	1888–71–7	Hexachloropropene
U133	302–01–2	Hydrazine (R,T)
U086	1615–80–1	Hydrazine, 1,2-diethyl-
U098	57–14–7	Hydrazine, 1,1-dimethyl-
U099	540–73–8	Hydrazine, 1,2-dimethyl-
U109	122–66–7	Hydrazine, 1,2-diphenyl-
U134	7664–39–3	Hydrofluoric acid (C,T)
U134	7664–39–3	Hydrogen fluoride (C,T)
U135	7783–06–4	Hydrogen sulfide
U135	7783–06–4	Hydrogen sulfide H_2S
U096	80–15–9	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U116	96–45–7	2-Imidazolidinethione
U137	193–39–5	Indeno[1,2,3-cd]pyrene
U190	85–44–9	1,3-Isobenzofurandione
U140	78–83–1	Isobutyl alcohol (I,T)
U141	120–58–1	Isosafrole
U142	143–50–0	Kepone
U143	303–34–4	Lasiocarpine
U144	301–04–2	Lead acetate
U146	1335–32–6	Lead, bis(acetato-O)tetrahydroxytri-
U145	7446–27–7	Lead phosphate
U146	1335–32–6	Lead subacetate
U129	58–89–9	Lindane
U163	70–25–7	MNNG
U147	108–31–6	Maleic anhydride
U148	123–33–1	Maleic hydrazide
U149	109–77–3	Malononitrile
U150	148–82–3	Melphalan
U151	7439–97–6	Mercury
U152	126–98–7	Methacrylonitrile (I, T)
U092	124–40–3	Methanamine, N-methyl- (I)
U029	74–83–9	Methane, bromo-
U045	74–87–3	Methane, chloro- (I, T)
U046	107–30–2	Methane, chloromethoxy-
U068	74–95–3	Methane, dibromo-
U080	75–09–2	Methane, dichloro-
U075	75–71–8	Methane, dichlorodifluoro-
U138	74–88–4	Methane, iodo-
U119	62–50–0	Methanesulfonic acid, ethyl ester
U211	56–23–5	Methane, tetrachloro-
U153	74–93–1	Methanethiol (I, T)
U225	75–25–2	Methane, tribromo-
U044	67–66–3	Methane, trichloro-
U121	75–69–4	Methane, trichlorofluoro-
U036	57–74–9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
U154	67–56–1	Methanol (I)
U155	91–80–5	Methapyrilene
U142	143–50–0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-
U247	72–43–5	Methoxychlor
U154	67–56–1	Methyl alcohol (I)
U029	74–83–9	Methyl bromide
U186	504–60–9	1-Methylbutadiene (I)
U045	74–87–3	Methyl chloride (I,T)
U156	79–22–1	Methyl chlorocarbonate (I,T)
U226	71–55–6	Methyl chloroform
U157	56–49–5	3-Methylcholanthrene
U158	101–14–4	4,4'-Methylenebis(2-chloroaniline)
U068	74–95–3	Methylene bromide
U080	75–09–2	Methylene chloride
U159	78–93–3	Methyl ethyl ketone (MEK) (I,T)
U160	1338–23–4	Methyl ethyl ketone peroxide (R,T)
U138	74–88–4	Methyl iodide
U161	108–10–1	Methyl isobutyl ketone (I)
U162	80–62–6	Methyl methacrylate (I,T)
U161	108–10–1	4-Methyl-2-pentanone (I)
U164	56–04–2	Methylthiouracil
U010	50–07–7	Mitomycin C
U059	20830–81–3	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy)-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-
U167	134–32–7	1-Naphthalenamine
U168	91–59–8	2-Naphthalenamine

Hazardous waste No.	Chemical abstracts No.	Substance
U026	494–03–1	Naphthalenamine, N,N'-bis(2-chloroethyl)-
U165	91–20–3	Naphthalene
U047	91–58–7	Naphthalene, 2-chloro-
U166	130–15–4	1,4-Naphthalenedione
U236	72–57–1	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)bis[5-amino-4-hydroxy]-, tetrasodium salt
U279	63–25–2	1-Naphthalenol, methylcarbamate.
U166	130–15–4	1,4-Naphthoquinone
U167	134–32–7	alpha-Naphthylamine
U168	91–59–8	beta-Naphthylamine
U217	10102–45–1	Nitric acid, thallium(1+) salt
U169	98–95–3	Nitrobenzene (I,T)
U170	100–02–7	p-Nitrophenol
U171	79–46–9	2-Nitropropane (I,T)
U172	924–16–3	N-Nitrosodi-n-butylamine
U173	1116–54–7	N-Nitrosodiethanolamine
U174	55–18–5	N-Nitrosodiethylamine
U176	759–73–9	N-Nitroso-N-ethylurea
U177	684–93–5	N-Nitroso-N-methylurea
U178	615–53–2	N-Nitroso-N-methylurethane
U179	100–75–4	N-Nitrosopiperidine
U180	930–55–2	N-Nitrosopyrrolidine
U181	99–55–8	5-Nitro-o-toluidine
U193	1120–71–4	1,2-Oxathiolane, 2,2-dioxide
U058	50–18–0	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide
U115	75–21–8	Oxirane (I,T)
U126	765–34–4	Oxiranecarboxyaldehyde
U041	106–89–8	Oxirane, (chloromethyl)-
2	123–63–7	Paraldehyde
U183	608–93–5	Pentachlorobenzene
U184	76–01–7	Pentachloroethane
U185	82–68–8	Pentachloronitrobenzene (PCNB)
See F027	87–86–5	Pentachlorophenol
U161	108–10–1	Pentanol, 4-methyl-
U186	504–60–9	1,3-Pentadiene (I)
U187	62–44–2	Phenacetin
U188	108–95–2	Phenol
U048	95–57–8	Phenol, 2-chloro-
U039	59–50–7	Phenol, 4-chloro-3-methyl-
U081	120–83–2	Phenol, 2,4-dichloro-
U082	87–65–0	Phenol, 2,6-dichloro-
U089	56–53–1	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-
U101	105–67–9	Phenol, 2,4-dimethyl-
U052	1319–77–3	Phenol, methyl-
U132	70–30–4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
U411	114–26–1	Phenol, 2-(1-methylethoxy)-, methylcarbamate.
U170	100–02–7	Phenol, 4-nitro-
See F027	87–86–5	Phenol, pentachloro-
See F027	58–90–2	Phenol, 2,3,4,6-tetrachloro-
See F027	95–95–4	Phenol, 2,4,5-trichloro-
See F027	88–06–2	Phenol, 2,4,6-trichloro-
U150	148–82–3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U145	7446–27–7	Phosphoric acid, lead(2+) salt (2:3)
U087	3288–58–2	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U189	1314–80–3	Phosphorus sulfide (R)
U190	85–44–9	Phthalic anhydride
U191	109–06–8	2-Picoline
U179	100–75–4	Piperidine, 1-nitroso-
U192	23950–58–5	Pronamide
U194	107–10–8	1-Propanamine (I,T)
U111	621–64–7	1-Propanamine, N-nitroso-N-propyl-
U110	142–84–7	1-Propanamine, N-propyl- (I)
U066	96–12–8	Propane, 1,2-dibromo-3-chloro-
U083	78–87–5	Propane, 1,2-dichloro-
U149	109–77–3	Propanedinitrile
U171	79–46–9	Propane, 2-nitro- (I,T)

Hazardous waste No.	Chemical abstracts No.	Substance
U027	108-60-1	Propane, 2,2'-oxybis[2-chloro-
U193	1120-71-4	1,3-Propane sultone
See F027	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
U235	126-72-7	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U140	78-83-1	1-Propanol, 2-methyl- (I,T)
U002	67-64-1	2-Propanone (I)
U007	79-06-1	2-Propenamide
U084	542-75-6	1-Propene, 1,3-dichloro-
U243	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	107-13-1	2-Propenenitrile
U152	126-98-7	2-Propenenitrile, 2-methyl- (I,T)
U008	79-10-7	2-Propenoic acid (I)
U113	140-88-5	2-Propenoic acid, ethyl ester (I)
U118	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
U162	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U373	122-42-9	Propham.
U411	114-26-1	Propoxur.
U387	52888-80-9	Prosulfocarb.
U194	107-10-8	n-Propylamine (I,T)
U083	78-87-5	Propylene dichloride
U148	123-33-1	3,6-Pyridazinedione, 1,2-dihydro-
U196	110-86-1	Pyridine
U191	109-06-8	Pyridine, 2-methyl-
U237	66-75-1	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-
U164	56-04-2	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	930-55-2	Pyrrolidine, 1-nitroso-
U200	50-55-5	Reserpine
U201	108-46-3	Resorcinol
U202	[a]81-07-2	Saccharin, & salts
U203	94-59-7	Safrole
U204	7783-00-8	Selenious acid
U204	7783-00-8	Selenium dioxide
U205	7488-56-4	Selenium sulfide
U205	7488-56-4	Selenium sulfide SeS_2 (R,T)
U015	115-02-6	L-Serine, diazoacetate (ester)
See F027	93-72-1	Silvex (2,4,5-TP)
U206	18883-66-4	Streptozotocin
U103	77-78-1	Sulfuric acid, dimethyl ester
U189	1314-80-3	Sulfur phosphide (R)
See F027	93-76-5	2,4,5-T
U207	95-94-3	1,2,4,5-Tetrachlorobenzene
U208	630-20-6	1,1,1,2-Tetrachloroethane
U209	79-34-5	1,1,2,2-Tetrachloroethane
U210	127-18-4	Tetrachloroethylene
See F027	58-90-2	2,3,4,6-Tetrachlorophenol
U213	109-99-9	Tetrahydrofuran (I)
U214	563-68-8	Thallium(I) acetate
U215	6533-73-9	Thallium(I) carbonate
U216	7791-12-0	Thallium(I) chloride
U216	7791-12-0	Thallium chloride TlCl
U217	10102-45-1	Thallium(I) nitrate
U218	62-55-5	Thioacetamide
U410	59669-26-0	Thiodicarb.
U153	74-93-1	Thiomethanol (I,T)
U244	137-26-8	Thioperoxydicarbonic diamide $[(H_2N)C(S)]_2S_2$, tetramethyl-
U409	23564-05-8	Thiophanate-methyl.
U219	62-56-6	Thiourea
U244	137-26-8	Thiram
U220	108-88-3	Toluene
U221	25376-45-8	Toluenediamine
U223	26471-62-5	Toluene diisocyanate (R,T)
U328	95-53-4	o-Toluidine
U353	106-49-0	p-Toluidine
U222	636-21-5	o-Toluidine hydrochloride
U389	2303-17-5	Triallate.
U011	61-82-5	1H-1,2,4-Triazol-3-amine
U227	79-00-5	1,1,2-Trichloroethane

Hazardous waste No.	Chemical abstracts No.	Substance
U228	79–01–6	Trichloroethylene
U121	75–69–4	Trichloromonofluoromethane
See F027	95–95–4	2,4,5-Trichlorophenol
See F027	88–06–2	2,4,6-Trichlorophenol
U404	121–44–8	Triethylamine.
U234	99–35–4	1,3,5-Trinitrobenzene (R,T)
U182	123–63–7	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	126–72–7	Tris(2,3-dibromopropyl) phosphate
U236	72–57–1	Trypan blue
U237	66–75–1	Uracil mustard
U176	759–73–9	Urea, N-ethyl-N-nitroso-
U177	684–93–5	Urea, N-methyl-N-nitroso-
U043	75–01–4	Vinyl chloride
U248	[1] 81–81–2	Warfarin, & salts, when present at concentrations of 0.3% or less
U239	1330–20–7	Xylene (I)
U200	50–55–5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester, (3beta,16beta,17alpha,18beta,20alpha)-
U249	1314–84–7	Zinc phosphide Zn_3P_2, when present at concentrations of 10% or less

[1] CAS Number given for parent compound only.

[45 FR 78529, 78541, Nov. 25, 1980]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 261.33, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 261.35 Deletion of certain hazardous waste codes following equipment cleaning and replacement.

(a) Wastes from wood preserving processes at plants that do not resume or initiate use of chlorophenolic preservatives will not meet the listing definition of F032 once the generator has met all of the requirements of paragraphs (b) and (c) of this section. These wastes may, however, continue to meet another hazardous waste listing description or may exhibit one or more of the hazardous waste characteristics.

(b) Generators must either clean or replace all process equipment that may have come into contact with chlorophenolic formulations or constituents thereof, including, but not limited to, treatment cylinders, sumps, tanks, piping systems, drip pads, fork lifts, and trams, in a manner that minimizes or eliminates the escape of hazardous waste or constituents, leachate, contaminated drippage, or hazardous waste decomposition products to the ground water, surface water, or atmosphere.

(1) Generators shall do one of the following:

(i) Prepare and follow an equipment cleaning plan and clean equipment in accordance with this section;

(ii) Prepare and follow an equipment replacement plan and replace equipment in accordance with this section; or

(iii) Document cleaning and replacement in accordance with this section, carried out after termination of use of chlorophenolic preservations.

(2) Cleaning Requirements.

(i) Prepare and sign a written equipment cleaning plan that describes:

(A) The equipment to be cleaned;

(B) How the equipment will be cleaned;

(C) The solvent to be used in cleaning;

(D) How solvent rinses will be tested; and

(E) How cleaning residues will be disposed.

(ii) Equipment must be cleaned as follows:

(A) Remove all visible residues from process equipment;

(B) Rinse process equipment with an appropriate solvent until dioxins and dibenzofurans are not detected in the final solvent rinse.

(iii) Analytical requirements.

(A) Rinses must be tested in accordance with SW–846, Method 8290.

(B) "Not detected" means at or below the lower method calibration limit (MCL) in Method 8290, Table 1.

Attachment B

Estimated time per response: 10 minutes.

Frequency of response: On occasion.

Estimated total annual burden hours: 867 hours.

Abstract: The information collection is prescribed by 36 CFR 1254.72. The collection is prepared by researchers who cannot visit the appropriate NARA research room or who request copies of records as a result of visiting a research room. NARA offers limited provisions to obtain copies of records by mail and requires requests to be made on prescribed forms for certain bodies of records. The National Archives Trust Fund (NATF) Form 36 (8/00), Microfilm Publication Order Form, is used by customers/researchers for ordering a roll, rolls, or a microfiche of a microfilm publication.

Dated: December 29, 2000.

L. Reynolds Cahoon,

Assistant Archivist for Human Resources and Information Services.

[FR Doc. 01–515 Filed 1–8–01; 8.45 am]

BILLING CODE 7515–01–P

NUCLEAR REGULATORY COMMISSION

[Docket No. 40–8681]

International Uranium (USA) Corporation; Notice of Receipt of Request To Process Alternate Feed

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of Receipt of Request from International Uranium (USA) Corporation to Amend Source Material License SUA–1358 to Receive and Process Alternate Feed Materials; Notice of Opportunity for Hearing.

SUMMARY: Notice is hereby given that the U.S. Nuclear Regulatory Commission has received, by letter dated December 19, 2000, a request from International Uranium (USA) Corporation (IUSA), to amend its NRC Source Material License SUA–1358, to allow its White Mesa Uranium Mill near Blanding, Utah, to receive and process up to 17,750 tons of alternate feed material from the Molycorp Site located in Mountain Pass, California. The material is a result of extraction of lathanides and other rare earth minerals and is presently being stored in ponds as lead sulfide sludge. IUSA and Molycorp estimate the amount of material for this amendment request to be up to 17,750 tons and the average uranium content of the material to be approximately 0.15 percent, or greater. IUSA proposes to receive and process the material for its uranium content and dispose of the byproduct material in the mill's tailings cells.

FOR FURTHER INFORMATION CONTACT: Mr. William von Till, Fuel Cycle Licensing Branch, Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Mail Stop T–8A33, Washington, D.C. 20555. Telephone: (301) 415–6251.

SUPPLEMENTARY INFORMATION: By its submittal dated December 19, 2000, IUSA requested that the NRC amend Materials License SUA–1358 to allow the receipt and processing of material other than natural uranium ore (i.e., alternate feed material) at its White Mesa uranium mill located near Blanding, Utah. These materials would be used as an "alternate feed material" (i.e., matter that is processed in the mill to remove the uranium but which is different from natural uranium ores, the normal feed material).

Since 1951, Molycorp has operated a surface mining and milling operation for the recovery and chemical separation of lanthanides and other rare earth metals from bastnasite ores. From 1965 through 1984, Molycorp constructed and operated three lead sulfide ponds for the evaporation of lead sulfides from the clarifier/thickener operation. The lead sulfide sludge contains uranium, which is also precipitated in the thickener. The ponds were taken out of service in 1984, and in 1997 Molycorp drafted a Closure Plan for the decommissioning of the ponds which required the removal and off-site disposal or recovery of the lead sulfide sludge contained in the ponds. This amendment request seeks authorization to process the lead sulfide sludges for their uranium content. IUSA has determined that the material does not contain listed hazardous waste as defined in the Resource Recovery and Conservation Act, as amended, 42 U.S.C. Section 6901–6991. IUSA proposes to temporarily store the material on the existing storage pad until a sufficient quantity of material is available to begin processing. IUSA will utilize water sprays, as required, to minimize dusting during dumping activities. The material will be processed utilizing an acid leach, in existing mill equipment, to dissolve the uranium. The solution will then be advanced through the mill circuitry with no significant physical modifications.

The material will be shipped using exclusive-use trucks from the Mountain Pass facility to the mill in lined, covered, aluminum end-dump trailers. Molycorp estimates that it will ship approximately 60–70 trucks per week for an estimated period of 60 to 90 days. The transportation route as proposed, will follow route I–15 and I–70 to U.S. Highway 191 at Crescent Junction, Utah and through Highway 191 south to the mill.

This application will be reviewed using NRC formal guidance, "Interim Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores" provided in the NRC Regulatory Issue Summary 2000–23 (November 30, 2000). The NRC has approved similar amendment requests in the past for separate alternate feed material under this license.

The amendment application is available for public inspection and copying at the NRC Public Document Room, in the Gelman Building, 2120 L Street N.W., Washington D.C. 20555.

Notice of Opportunity for Hearing

The NRC hereby provides notice of an opportunity for a hearing on the license amendment under the provisions of 10 CFR Part 2, Subpart L, "Informal Hearing Procedures for Adjudications in Materials and Operator Licensing Proceedings." Pursuant to § 2.1205(a), any person whose interest may be affected by this proceeding may file a request for a hearing. In accordance with § 2.1205(d), a request for hearing must be filed within 30 days of the publication of this notice in the **Federal Register**. The request for a hearing must be filed with the Office of the Secretary, either:

(1) By delivery to the Docketing and Service Branch of the Office of the Secretary at One White Flint North, 11555 Rockville Pike, Rockville, MD 20852; or

(2) By mail or telegram addressed to the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Service Branch.

In accordance with 10 CFR 2.1205(f), each request for a hearing must also be served, by delivering it personally or by mail, to:

(1) The applicant, International Uranium (USA) Corporation, Independence Plaza, Suite 950, 1050 Seventeenth Street, Denver, Colorado 80265; Attention: Michelle Rehmann; and

(2) The NRC staff, by delivery to the Executive Director for Operations, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852, or by mail addressed to the Executive Director for Operations, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

In addition to meeting other applicable requirements of 10 CFR part

2 of the NRC's regulations, a request for a hearing filed by a person other than an applicant must describe in detail:

(1) The interest of the requestor in the proceeding;

(2) How that interest may be affected by the results of the proceeding, including the reasons why the requestor should be permitted a hearing, with particular reference to the factors set out in § 2.1205(h);

(3) The requestor's areas of concern about the licensing activity that is the subject matter of the proceeding; and

(4) The circumstances establishing that the request for a hearing is timely in accordance with § 2.1205(d).

The request must also set forth the specific aspect or aspects of the subject matter of the proceeding as to which petitioner wishes a hearing.

In addition, members of the public may provide comments on the subject application within 30 days of the publication of this notice in the **Federal Register**. The comments may be provided to Michael T. Lesar, Acting Chief, Rules Review and Directives Branch, Division of Administration Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington DC 20555.

Dated at Rockville, Maryland, this 3rd day of January, 2001.

For the Nuclear Regulatory Commission.

Daniel Gillen,

Acting Chief, Fuel Cycle Licensing Branch, Division of Fuel Cycle Safety & Safeguards, Office of Nuclear Material Safety and Safeguards.

[FR Doc. 01-601 Filed 1-8-01; 8:45 am]

BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

Reactor Oversight Process Initial Implementation Evaluation Panel; Meeting Notice

Pursuant to the Federal Advisory Committee Act of October 6, 1972 (Pub. L., 94-463, Stat. 770-776) the U.S. Nuclear Regulatory Commission (NRC), on October 2, 2000, announced the establishment of the Reactor Oversight Process Initial Implementation Evaluation Panel (IIEP). The IIEP functions as a cross-disciplinary oversight group to independently monitor and evaluate the results of the first year of implementation of the Reactor Oversight Process (ROP). A Charter governing the IIEP functions as a Federal Advisory Committee was filed with Congress on October 17, 2000, after consultation with the Committee Management Secretariat, General Services Administration. The IIEP will hold its third meeting on January 22-23, 2001, at the Four Points by Sheraton Bethesda Hotel. The Four Points by Sheraton Bethesda Hotel is located at 8400 Wisconsin Avenue, Bethesda, Maryland 20814 and can be contacted at (301)654-1000. The meeting will take place in the Hotel's Ambassador II Conference Room.

The IIEP meeting participants are listed below along with their affiliation.

A. Randolph Blough—U.S. Nuclear Regulatory Commission
R. William Borchardt—U.S. Nuclear Regulatory Commission
Kenneth Brockman—U.S. Nuclear Regulatory Commission
Mary Ferdig—Ph. D. Candidate, Organization Development Program, Benedictine University; Ferdig Inc. Organizational Research and Development
Steve Floyd—Nuclear Energy Institute
David Garchow—PSEG Nuclear LLC
Richard Hill—Southern Nuclear Operating Company
Rod Krich—Commonwealth Edison Company
Robert Laurie—California Energy Commission
James Moorman, III—U.S. Nuclear Regulatory Commission
Loren Plisco—U.S. Nuclear Regulatory Commission
Steven Reynolds—U.S. Nuclear Regulatory Commission
A. Edward Scherer—Southern California Edison Company
James Setser—Georgia Department of Natural Resources
Raymond Shadis—New England Coalition on Nuclear Pollution
James Trapp—U.S. Nuclear Regulatory Commission

A tentative agenda of the meeting is outlined as follows:

January 22, 2001 Meeting

8:00 am Introduction/Meeting Objectives and Goals/Review of Meeting Minutes from December 11-12, 2000 Meeting
8:30 am Initial Prioritization of Issues Identified Through the Panel
12:00 pm Lunch
1:00 pm Presentation by NRC Staff on (1) Reactor Oversight Process Self-Assessment Data and Insights, (2) Current Reactor Oversight Process Initiatives and Status, and (3) Status of Recommendations and Issues Identified in the Pilot Program Evaluation Panel Report and Commission Staff Requirements Memorandum
5:00 pm Adjourn

January 23, 2001 Meeting

8:00 am Recap of Previous Day's Meeting/Meeting Objectives and Goals
8:30 am Presentation of Stakeholder Issues/Views (Invited parties)
12:00 pm Lunch
1:00 pm Initial Prioritization of Issues Identified Through the Panel (continued)
3:00 pm Agenda Planning Session 4:00 pm Public Comments / General Discussion
5:00 pm Adjourn

Meetings of the IIEP are open to the members of the public. Oral or written views may be presented by the members of the public, including members of the nuclear industry. Persons desiring to make oral statements should notify Mr. Loren R. Plisco (Telephone 404/562-4501, e-mail LRP@nrc.gov) or Mr. John D. Monninger (Telephone 301/415-3495, e-mail JDM@nrc.gov) five days prior to the meeting date, if possible, so that appropriate arrangements can be made to allow necessary time during the meeting for such statements. Use of still, motion picture, and television cameras will be permitted during this meeting.

Further information regarding topics of discussion; whether the meeting has been canceled, rescheduled, or relocated; and the Panel Chairman's ruling regarding requests to present oral statements and time allotted, may be obtained by contacting Mr. Loren R. Plisco or Mr. John D. Monninger between 8:00 a.m. and 4:30 p.m. EST.

IIEP meeting transcripts and meeting reports will be available from the Commission's Public Document Room. Transcripts will be placed on the agency's web page.

Dated: January 3, 2001.

Andrew L. Bates,

Advisory Committee Management Officer.

[FR Doc. 01-598 Filed 1-8-01; 8:45 am]

BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards; Subcommittee Meeting on Thermal-Hydraulic Phenomena: Revised

A meeting of the ACRS Subcommittee on Thermal-Hydraulic Phenomena is scheduled to be held on January 16-17, 2001, 8:30 a.m., Room T-2B1, 11545 Rockville Pike, Rockville, Maryland. The meeting agenda has been revised so that portions of the January 16, 2001 session will be closed to discuss proprietary information per 5 U.S.C. 552b(c)(4) pertinent to the Electric Power Research Institute (EPRI). Notice of this meeting was published in the **Federal Register** on December 28, 2000 (65 FR 82410). All other items pertaining to this meeting remains the same as previously published.

For further information contact: Mr. Paul A. Boehnert, cognizant ACRS staff

Attachment C

Uranium Mill Facilities, Notice of Two Guidance Documents: Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments; Final Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of final guidance.

SUMMARY: The U.S. Nuclear Regulatory Commission has finalized two uranium mill licensing guidance documents after consideration of comments received in response to a request for public comment in a Federal Register notice published May 13, 1992 (57 FR 20525). Only minor changes were made to the proposed guidance documents titled, "Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments" and "Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores."

ADDRESSES: Copies of the comments and the NRC staff responses, as well as SECY–91–243, can be examined at the Commission's Public Document Room at 2120 L Street NW. (lower level), Washington DC.

FOR FURTHER INFORMATION CONTACT: Myron Fliegel, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555; telephone (301) 415–6629.

SUPPLEMENTARY INFORMATION:

Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments

1. In reviewing licensee requests for the disposal of wastes that have radiological characteristics comparable to those of Atomic Energy Act (AEA) of 1954, Section 11e.(2) byproduct material (hereafter designated as "11e.(2) byproduct material") in tailings impoundments, staff will follow the guidance set forth below. Since mill tailings impoundments are already regulated under 10 CFR part 40, licensing of the receipt and disposal of such material [hereafter designated as "non-11e.(2) byproduct material [1]"] should also be done under 10 CFR part 40.

2. Radioactive material not regulated under the AEA shall not be authorized for disposal in an 11e.(2) byproduct material impoundment.

3. Special nuclear material and Section 11e.(1) byproduct material waste should not be considered as candidates for disposal in a tailings impoundment, without compelling reasons to the contrary. If staff believes that such material should be disposed of in a tailings impoundment in a specific instance, a request for approval by the Commission should be prepared.

4. The 11e.(2) licensee must demonstrate that the material is not subject to applicable Resource Conservation and Recovery Act (RCRA) regulations or other U.S. Environmental Protection Agency (EPA) standards for hazardous or toxic wastes prior to disposal. To further ensure that RCRA hazardous waste is not inadvertently disposed of in mill tailings impoundments, the 11e.(2) licensee also must demonstrate, for waste containing source material, as defined under the AEA, that the waste does not also contain material classified as hazardous waste according to 40 CFR part 261. In addition, the licensee must demonstrate that the non-11e.(2) material does not contain material regulated under other Federal statutes, such as the Toxic Substances Control Act. Thus, source material physically mixed with other material, would require evaluation in accordance with 40 CFR part 261, or 40 CFR part 761. (These provisions would cover material such as: Characteristically hazardous waste; listed hazardous waste; and polychlorinated biphenyls.) The demonstration and testing should follow accepted EPA regulations and protocols.

5. The 11e.(2) licensee must demonstrate that there are no Comprehensive Environmental Response, Compensation and Liability Act issues related to the disposal of the non-11e.(2) byproduct material.

6. The 11e.(2) licensee must demonstrate that there will be no significant environmental impact from disposing of this material.

7. The 11e.(2) licensee must demonstrate that the proposed disposal will not compromise the reclamation of the tailings impoundment by demonstrating compliance with the reclamation and closure criteria of appendix A of 10 CFR part 40.

8. The 11e.(2) licensee must provide documentation showing approval by the Regional Low-Level Waste Compact in whose jurisdiction the waste originates as well as approval by the Compact in whose jurisdiction the disposal site is located.

9. The Department of Energy (DOE) and the State in which the tailings impoundment is located, should be informed of the Nuclear Regulatory Commission findings and proposed action, with a request to concur within 120 days. A concurrence and commitment from either DOE or the State to take title to the tailings impoundment after closure must be received before granting the license amendment to the 11e.(2) licensee.

10. The mechanism to authorize the disposal of non-11e.(2) byproduct material in a tailings impoundment is an amendment to the mill license under 10 CFR part 40, authorizing the receipt of the material and its disposal. Additionally, an exemption to the requirements of 10 CFR part 61, under the authority of § 61.6, must be granted. (If the tailings impoundment is located in an Agreement State with low-level waste licensing authority, the State must take appropriate action to exempt the non-11e.(2) byproduct material from regulation as low-level waste.) The license amendment and the § 61.6 exemption should be supported with a staff analysis addressing the issues discussed in this guidance.

Final Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores

Staff reviewing licensee requests to process alternate feed material (material other than natural ore) in uranium mills should follow the guidance presented below. Besides reviewing to determine compliance with appropriate aspects of appendix A of 10 CFR part 40, the staff should also address the following issues:

1. Determination of Whether the Feed Material is Ore

For the tailings and wastes from the proposed processing to qualify as 11e.(2) byproduct material, the feed material must qualify as "ore." In determining whether the feed material is ore, the following definition of ore must be used:

Ore is a natural or native matter that may be mined and treated for the extraction of any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill.

2. Determination of Whether the Feed Material Contains Hazardous Waste

If the proposed feed material contains hazardous waste, listed under subpart D §§ 261.30–33 of 40 CFR (or comparable RCRA authorized State regulations), it would be subject to EPA (or State) regulation under RCRA. To avoid the

[1] "non-11e.(2) byproduct material" as used here is simply an encompassing term for source, special nuclear, and 11e.(1) byproduct materials.

complexities of NRC/EPA dual regulation, such feed material will not be approved for processing at a licensed mill. If the licensee can show that the proposed feed material does not contain a listed hazardous waste, this issue is resolved.

Feed material exhibiting only a characteristic of hazardous waste (ignitable, corrosive, reactive, toxic) would not be regulated as hazardous waste and could therefore be approved for recycling and extraction of source material. However, this does not apply to residues from water treatment, so acceptance of such residues as feed material will depend on their not containing any hazardous or characteristic hazardous waste. Staff may consult with EPA (or the State) before making a determination of whether the feed material contains hazardous waste.

3. Determination of Whether the Ore is Being Processed Primarily for its Source-Material Content

For the tailings and waste from the proposed processing to qualify as 11e.(2) byproduct material, the ore must be processed primarily for its source-material content. There is concern that wastes that would have to be disposed of as radioactive or mixed waste would be proposed for processing at a uranium mill primarily to be able to dispose of it in the tailings pile as 11e.(2) byproduct material. In determining whether the proposed processing is primarily for the source-material content or for the disposal of waste, either of the following tests can be used:

a. *Co-disposal test:* Determine if the feed material would be approved for disposal in the tailings impoundment under the "Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments," or revisions or replacements to that guidance. If the material would be approved for disposal, it can be concluded that if a mill operator proposes to process it, the processing is primarily for the source-material content. The material would have to be physically and chemically similar to 11e.(2) byproduct material and not be subject to RCRA or other EPA hazardous-waste regulations, as discussed in the guidance.

b. *Licensee certification and justification test:* The licensee must certify under oath or affirmation that the feed material is to be processed primarily for the recovery of uranium and for no other primary purpose. The licensee must also justify, with reasonable documentation, the certification. The justification can be based on financial considerations, the high uranium content of the feed material, or other grounds. The determination that the proposed processing is primarily for the source material content must be made on a case-specific basis.

If it can be determined, using the aforementioned guidance, that the proposed feed material meets the definition of ore, that it will not introduce a hazardous waste not otherwise exempted, and that the primary purpose of its processing is for its source-material content, the request can be approved.

Dated at Rockville, Maryland, this 13th day of September 1995.

For the Nuclear Regulatory Commission.

Joseph J. Holonich,

Chief, High-Level Waste and Uranium Recovery Projects Branch, Division of Waste Management, Office of Nuclear Material Safety and Safeguards.

[FR Doc. 95-23531 Filed 9-21-95; 8:45 am]

BILLING CODE 7590-01-P

SECURITIES AND EXCHANGE COMMISSION

[Rel. No. IC-21362; No. 812-9602]

Golden American Life Insurance Company, et al.

September 15, 1995.

AGENCY: Securities and Exchange Commission ("SEC" or "Commission").

ACTION: Notice of Application for an Order under the Investment Company Act of 1940 ("1940 Act").

APPLICANTS: Golden American Life Insurance Company ("Golden American"), Separate Account B ("Account B") and Separate Account D ("Account D"—together with Account B, "Separate Accounts"), and Directed Services, Inc. ("DSI").

RELEVANT 1940 ACT SECTION: Order requested under Section 6(c) of the 1940 Act granting exemptions from Sections 12(b), 26(a)(2) and 27(c)(2) thereof and Rule 12b-1 thereunder.

SUMMARY OF APPLICATION: Applicants seek an order permitting the deduction of mortality and expense risk charges, including an asset-based enhanced death benefit charge, from the assets of the Separate Accounts in connection with the offering of certain variable annuity contracts ("Contracts") and certain other variable annuity contracts ("Future Contracts") issued in the future by Golden American that are materially similar to the Contracts. Applicants also request that the order permit the deduction of a mortality and expense risk charge from the assets of any other separate accounts ("Future Accounts") established in the future by Golden American in connection with the offering of the Future Contracts.

FILING DATE: The application was filed on May 11, 1995, and amended on August 29, 1995.

HEARING OR NOTIFICATION OF HEARING: An order granting the application will be issued unless the Commission orders a hearing. Interested persons may request a hearing by writing to the Secretary of the Commission and serving Applicants with a copy of the request, personally or by mail. Hearing requests should be received by the Commission by 5:30 p.m. on October 10, 1995, and should be accompanied by proof of service on Applicants in the form of an affidavit or, for lawyers, a certificate of service. Hearing requests should state the nature of the requestor's interest, the reason for the request, and the issues contested. Persons may request notification of a hearing by writing to the Secretary of the Commission.

ADDRESSES: Secretary, Securities and Exchange Commission, 450 5th Street, NW., Washington, DC 20549. Applicants, c/o Mitchell M. Cox, Esq., Vice President, Assistant Secretary and Associate General Counsel, Golden American Life Insurance Company, 1001 Jefferson Avenue, 4th Floor, Wilmington, Delaware 19801.

FOR FURTHER INFORMATION CONTACT: Yvonne M. Hunold, Assistant Special Counsel, or Patrice M. Pitts, Special Counsel, Office of Insurance Products (Division of Investment Management), at (202) 942-0670.

SUPPLEMENTARY INFORMATION: The following is a summary of the application; the complete application is available for a fee from the Public Reference Branch of the Commission.

Applicants' Representation

1. Golden American is a stock life insurance company authorized to do business in all jurisdictions, except New York. Golden American is a wholly-owned subsidiary of BT Variable, Inc. and a wholly-owned indirect subsidiary of Bankers Trust Company.

2. The Separate Accounts were established by Golden American as segregated asset accounts to fund variable annuity contracts. Account B is registered under the 1940 Act as a unit investment trust. Account D is registered under the 1940 Act as a non-diversified open-end management company. Registration statements on Form N-4 and Form N-3, registering the Contracts as securities under the

Attachment D

Interim Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores

In reviewing licensee requests to process alternate feed material (material other than natural ore) in uranium mills, the Nuclear Reguatory Commission staff will follow the guidance presented below. Besides reviewing to determine compliance with appropriate aspects of Appendix A of 10 CFR Part 40, the staff should also address the following issues:

1. Determination of whether the feed material is ore.

For the tailings and wastes from the proposed processing to qualify as 11e.(2) byproduct material, the feed material must qualify as "ore." In determining whether the feed material is ore, the following definition of ore will be used:

Ore is a natural or native matter that may be mined and treated for the extraction of any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill.

2. Determination of whether the feed material contains hazardous waste.

If the proposed feed material contains hazardous waste, listed under subpart D Sections 261.30-33 of 40 CFR (or comparable Resource Conservation and Recovery Act (RCRA) authorized State regulations), it would be subject to the U.S. Environmental Protection Agency (EPA) or State regulation under RCRA. If the licensee can show that the proposed feed material does not contain a listed hazardous waste, this issue is resolved.

Feed material exhibiting only a characteristic of hazardous waste (ignitable, corrosive, reactive, toxic) would not be regulated as hazardous waste and could therefore be approved for recycling and extraction of source material. However, this does not apply to residues from water treatment, so determination that such residues are not subject to regulation under RCRA will depend on their not containing any characteristic hazardous waste. Staff may consult with EPA (or the State) before making a determination of whether the feed material contains hazardous waste.

If the feed material contains hazardous waste, the licensee can process it only if it obtains EPA (or State) approval and provides the necessary documentation to that effect. Additionally, for feed material containing hazardous waste, the staff will review documentation from the licensee that provides a commitment from the U.S. Department of Energy or the State to take title to the tailings impoundment after closure.

3. Determination of whether the ore is being processed primarily for its source-material content.

For the tailings and waste from the proposed processing to qualify as 11e.(2) byproduct material, the ore must be processed primarily for its source-material content. If the only product produced in the processing of the alternate feed is uranium product, this determination is satisfied. If, in addition to uranium product, another material is also produced in the processing of the ore, the licensee must provide documentation showing that the uranium product is the primary product produced.

If it can be determined, using the aforementioned guidance, that the proposed feed material meets the definition of ore, that it will not introduce a hazardous waste not otherwise exempted, or if it has been approved by the EPA (or State) and the long-term custodian, and that the primary purpose of its processing is for its source-material content, the request can be approved.

Interim Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments

1. In reviewing licensee requests for the disposal of wastes that have radiological characteristics comparable to those of Atomic Energy Act of 1954, Section 11e.(2) byproduct material [hereafter designated as "11e.(2) byproduct material"] in tailings impoundments, the Nuclear Regulatory Commission staff will follow the guidance set forth below. Since mill tailings impoundments are already regulated under 10 CFR Part 40, licensing of the receipt and disposal of such material [hereafter designated as "non-11e.(2) byproduct material"] should also be done under 10 CFR Part 40.

2. Special nuclear material and Section 11e.(1) byproduct material waste should not be considered as candidates for disposal in a tailings impoundment, without compelling reasons to the contrary. If staff believes that such material should be disposed of in a tailings impoundment in a specific instance, a request for Commission approval should be prepared.

3. The 11e.(2) licensee must provide documentation showing necessary approvals of other affected regulators (e.g., the U.S. Environmental Protection Agency or State) for material containing listed hazardous wastes or any other material regulated by another Federal agency or State because of environmental or safety considerations.

4. The 11e.(2) licensee must demonstrate that there will be no significant environmental impact from disposing of this material.

5. The 11e.(2) licensee must demonstrate that the proposed disposal will not compromise the reclamation of the tailings impoundment by demonstrating compliance with the reclamation and closure criteria of Appendix A of 10 CFR Part 40.

6. The 11e.(2) licensee must provide documentation showing approval by the Regional Low-Level Waste Compact in whose jurisdiction the waste originates as well as approval by the Compact in whose jurisdiction the disposal site is located, for material which otherwise would fall under Compact jurisdiction.

7. The U.S. Department of Energy (DOE) and the State in which the tailings impoundment is located, should be informed of the U.S. Nuclear Regulatory Commission findings and proposed action, with a request to concur within 120 days. A concurrence and commitment from either DOE or the State to take title to the tailings impoundment after closure must be received before granting the license amendment to the 11e.(2) licensee.

8. The mechanism to authorize the disposal of non-11e.(2) byproduct material in a tailings impoundment is an amendment to the mill license under 10 CFR Part 40, authorizing the receipt of the material and its disposal. Additionally, an exemption to the requirements of 10 CFR Part 61, under the authority of 10 CFR 61.6, must be granted, if the material would otherwise be regulated under Part 61. (If the tailings impoundment is located in an Agreement State with low-level waste licensing authority, the State must take appropriate action to exempt the non-11e.(2) byproduct material from regulation as low-level waste.) The license amendment and the 10 CFR 61.6 exemption should be supported with a staff analysis addressing the issues discussed in this guidance.

ATTACHMENT 2

(UMTRCA) preempts a non-Agreement State's authority to regulate the non-radiological hazards associated with 11e.(2) byproduct material and concluded that it did not. The NRC concluded that NRC and the State both exercised this authority. As a result, the staff has followed the practice of sharing jurisdiction of the non-radiological hazards with States. In its 1998 white paper, the NMA questioned the 1980 staff interpretation of UMTRCA. The Commission, in the SRM for SECY-99-0277 determined that NRC has exclusive jurisdiction over both the radiological and non-radiological hazards of 11e.(2) byproduct material.

As a result of this decision, the staff will implement its exclusive authority over the non-radiological hazards of 11e.(2) byproduct material and not recognize State authority in this area.

SUMMARY OF ISSUES

The Commission has evaluated a range of uranium recovery issues and the staff evaluation and has directed, through SRMs, the staff to take various actions that will ultimately be incorporated into the new Part 41 rulemaking and existing uranium recovery SRPs.

In the interim, this RIS informs the licensees of the Commission's decisions. These are: 1) to allow more flexibility in the disposal of non-11e.(2) material in tailings impoundments, subject to certain considerations; 2) to allow alternate feed material to be processed for uranium (or thorium) without any inquiry into a licensee's economic motives; 3) to classify all waste water and sludges generated during or after the uranium (or thorium) extraction phase of in situ leach operations as 11e.(2) byproduct material; 4) to continue discussions with EPA and appropriate States to determine the extent that NRC can rely on the EPA UIC program for ground-water protection at ISL facilities; and 5) to note that NRC has exclusive jurisdiction over both the radiological and non-radiological hazards of 11e.(2) byproduct material.

This regulatory issue summary requires no specific action nor written response. If you have any questions about this summary, please contact the technical contact listed below.

/RA/

Michael F. Weber, Director
Division of Fuel Cycle Safety & Safeguards
Office of Nuclear Material Safety and Safeguards

Technical Contact: Kenneth R. Hooks, NMSS
301-415-7777
E-mail: krh1@nrc.gov

Attachments:
1. Interim Guidance Non-11e.(2)
2. Interim Position Alternate Feed
3. List of Recently Issued NRC Regulatory Issue Summaries

(ADAMS Accession Number ML003773008)

ATTACHMENT 1

derived from such waste waters, are classified as 11e.(2) byproduct material. The staff will make no legal distinction among the waste waters produced at different stages in a facility's life cycle.

This revised policy is effective immediately. The staff intends to codify this policy in the new rulemaking for Part 41 and associated regulatory guidance.

GROUND-WATER ISSUES AT ISL FACILITIES (SECY-99-013)

Over the past several years, the industry has expressed concern that NRC's regulation of ground water at ISLs is duplicative of the ground-water protection programs required by the Safe Drinking Water Act (SDWA), as administered by EPA or EPA-authorized States. EPA and the States protect ground-water quality through the Underground Injection Control (UIC) program, under the SDWA. The States often require additional measures in the UIC program that are more stringent than the Federal program. As presented in NMA's white paper, the industry contended that NRC's review and licensing activities are a duplicative form of regulation covering the same issues. Additionally, NMA also expressed the view that NRC did not have authority to regulate ground water at ISLs.

Historically, NRC has imposed conditions on ISL operations to ensure that ground-water quality is maintained during licensed activities and that actions are taken to ensure the restoration of ground-water quality before the license is terminated. The specific conditions imposed in an ISL license have typically been the result of NRC's independent review, as documented in safety evaluation reports and appropriate environmental evaluations.

In addition to NRC's review, licensees must also obtain a UIC permit from EPA or the EPA-authorized State before uranium recovery operations can begin. EPA or the authorized State conducts many of the same types of reviews as NRC. This is evidenced by NRC incorporating ground-water protection limits from a State's permitting program into specific license requirements, after conducting its own review of the licensee's groundwater protection program, including the use of State-imposed standards -- and staff routinely accepting specific methodologies and guidance developed by EPA or States for ground-water monitoring programs and well construction.

In the SRM for SECY-99-013, the Commission approved the staff continuing discussions with EPA and appropriate States to determine the extent to which NRC can rely on the EPA UIC program for ground-water protection issues, thereby potentially minimizing duplicative review of ground-water protection at ISL facilities. Part of the discussions with EPA and appropriate States should include appropriate methods to implement any agreements, including Memoranda of Understanding (if necessary) and potential requirements that could be incorporated in the new Part 41. In the interim, it is recognized that some NRC/EPA dual regulation of the ground-water at ISL facilities will continue until such time that NRC can defer to EPA's UIC program.

NRC has initiated a new round of discussions with the EPA since the Commission decision in July 2000, and discussions with the appropriate States should begin in early to mid 2001.

In February 1998, staff documented its review process for ISLs, including a detailed evaluation of ground-water activities, in a draft Standard Review Plan (draft SRP) for ISL facility license applications (NUREG-1569), that was published for public comment. Following the comment period, staff held a public workshop on the SRP to discuss the issues raised. The staff intends to use the draft SRP in licensing reviews until the rulemaking for new Part 41 (SECY 99-011) has been completed and NUREG-1569 is finalized.

CONCURRENT JURISDICTION OF NON-RADIOLOGICAL HAZARDS OF URANIUM MILL TAILINGS (SECY-99-277)

In 1980, the staff considered the issue of whether the Uranium Mill Tailings Radiation Control Act

- The staff will revise the criterion, in item 8, regarding approval by Low-Level Waste Compacts, to allow for the situation in which material proposed for disposal does not fall under the jurisdiction of Low-Level Waste Compacts (e.g., radioactive material not regulated under the AEA).

- The Commission directed the staff to pursue a generic exemption to NRC's disposal requirements for low-level radioactive waste in 10 CFR Part 61, rather than having to grant an exemption, under 10 CFR 61.6, as identified in item 10. A generic exemption to regulations must be issued through a rulemaking process. Therefore, the staff will pursue incorporating the generic exemption in the new Part 41. In the interim, the requirement for a specific exemption will remain in the guidance, with addition of a caveat for material not regulated under Part 61.

The staff therefore is revising its 1995 guidance. The complete revised guidance, is in Attachment 1.

PROCESSING OF MATERIAL OTHER THAN NATURAL URANIUM ORES (SECY-99-012)

In 1995, the staff published its position and guidance, in the *Federal Register* (60 FR 49296), on the use of uranium feed material other than natural ores (alternate feed material), in uranium mills. The guidance identified three determinations that the staff had to make in order to approve an alternate feed request. The third determination -- whether the ore is being processed primarily for its source material content -- generated considerable controversy. This determination was required to address the concern that wastes that would otherwise have to be disposed of as radioactive or mixed waste would be proposed for processing at a uranium mill primarily to be able to dispose of them in the tailings pile as 11e.(2) byproduct material. This determination was essentially a determination of the motives of the mill operator in requesting approval of a specific stream of alternate feed material. In many cases it involved questioning the financial aspects of acquiring and processing the alternate feed material, and selling the resultant uranium product.

In its 1998 white paper, the NMA emphasized that NRC should not be looking to a licensee's motives in processing alternate feed material. After careful consideration of stakeholder comments and the staff's analysis, the Commission, in the SRM for SECY-99-012, directed the staff to allow processing of alternate feed material without inquiry into a licencee's economic motives, and referred to a Commission decision (CLI-00-01 51 NRC 9) on a specific instance of proposed processing of alternate feed, that was brought before the Atomic Safety Licensing Board and then appealed to the Commission. The Commission also addressed the second determination in the 1995 guidance (i.e., whether the feed material contains hazardous waste). It directed the staff to allow more flexibility with regard to this issue consistent with its direction to the staff on the disposal of non-11e.(2) byproduct material in tailings piles.

The Commission directed the staff to revise, issue, and implement final guidance on the processing of alternate feed as soon as possible and to codify the guidance in the new Part 41.

To comply with the SRM, the staff is revising the 1995 position and guidance in the following manner:

The staff will modify the prohibition in item 2 on feed material containing hazardous waste, to allow such feed material provided that the licensee obtains approval of the U.S. Environmental Protection Agency (EPA) or the State, and a commitment from the long-term custodian to accept the tailings after site closure.

The staff will revise the manner in which it determines whether the ore is being processed primarily for its source material content, to focus on the product of the processing, and eliminate any inquiry into the licensee's economic motives for the processing.

The staff therefore is revising its 1995 guidance. The complete revised guidance, is in Attachment 2.

CLASSIFICATION OF LIQUID WASTES AT ISL FACILITIES (SECY-99-013)

Before 1995, the staff practice for addressing the disposal of evaporation pond sludges at ISL facilities relied on a broad reading of the definition of 11e.(2) byproduct material. This broad reading only addressed discrete surface wastes capable of controlled disposal and did not distinguish between wastes generated at various phases of an ISL operation. All waste materials generated during ISL operations and ground-water restoration activities were designated 11e.(2) byproduct material and disposed of at licensed uranium mill tailings impoundments, in accordance with 10 CFR Part 40, Appendix A, Criterion 2.

The staff issued two guidance documents in 1995 to address issues raised by the industry in the uranium recovery program. The first, "Staff Technical Position on Effluent Disposal at Licensed Uranium Recovery Facilities" (hereinafter, the effluent guidance), was intended to ensure protection of the environment and public, while providing uranium recovery licensees with flexibility regarding the disposal of various types of liquid effluents generated during the operation of their facilities. In issuing this guidance, the staff took a more narrow view of the definition of 11e.(2) byproduct material. It differentiated between the various waste waters generated during ISL operations on the basis of their origin and whether uranium was extracted for its source material content during that phase of the operation. Waste waters and the associated solids produced during the uranium extraction phase of site operations, called "production bleed," were classified as AEA Section 11e.(2) byproduct material and therefore subject to regulation by NRC. Conversely, waste waters and the resulting solids produced after uranium extraction (i.e., during ground-water restoration activities) were classified as "mine waste waters," and therefore were subject to regulation by individual States under their applicable mining programs. These wastes were considered naturally occurring radioactive material (NORM). However, because licensees often dispose of waste waters from uranium extraction and post-extraction activities in the same evaporation ponds, the resulting solids are a commingled waste consisting of 11e.(2) byproduct material and sludges derived from mine waste water.

In the second guidance document, "Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments" (hereinafter, the disposal guidance), the staff identified 10 criteria that licensees should meet before NRC could authorize the disposal of AEA material other than 11e.(2) byproduct material in tailings impoundments. One of these criteria prohibited the disposal of radioactive material not covered by the AEA, including NORM (see earlier discussion for policy revisions). This criterion was intended to avoid the possibility of dual regulation of the radioactive constituents in the impoundments, since individual States are responsible for radioactive materials not covered by the AEA.

The industry expressed concerns, in NMA's white paper, that, taken together, these two guidance documents leave no option for the disposal of radioactively contaminated sludges from ISL evaporation ponds. The reason for this concern is that the 11e.(2) byproduct material was commingled with a NORM waste, which the disposal guidance prohibits from disposal in a tailings impoundment. The industry emphasized that the staff's waste classification, based on the origin of the waste water (i.e., from the extraction or restoration phase) at an ISL facility, makes the disposal of such sludges in a mill tailings impoundment, as required under Criterion 2 of 10 CFR Part 40, Appendix A, impossible -- even though the sludges derived from waste waters produced throughout a facility's life cycle are physically, chemically, and radiologically identical.

The staff analyzed several options in SECY-99-013 for addressing the industry's concerns. In the SRM for SECY-99-013, the Commission determined that all liquid effluents at ISL uranium recovery facilities are 11e.(2) byproduct material. NRC takes the position that any waste water generated during or after the uranium extraction phase of site operations, and all evaporation pond sludges

Recovery Facilities") discussed the regulation of ground water at ISL sites and the issue of which waste streams at ISL facilities come under NRC regulatory jurisdiction as 11e.(2) byproduct material. The last paper (SECY-99-277, "Concurrent Jurisdiction of Non-Radiological Hazards of Uranium Mill Tailings") addressed the issue of concurrent jurisdiction (with States that do not have Agreement State regulatory authority for 11e.(2) material under section 274 of the AEA) over the non-radiological hazards of uranium mill tailings.

On July 13, 2000, the Commission issued a Staff Requirements Memorandum (SRM) on SECY-99-011. On July 26, 2000, the Commission issued SRMs on SECY-99-012 and SECY-99-013, and on August 11, 2000, the SRM on SECY-99-277 was issued.

The decisions and directions in these SRMs and the staff actions in response are discussed in sections that follow.

PART 41 RULEMAKING (SECY-99-011)

SECY-99-011 approved the staff's recommendation to provide a draft Rulemaking Plan (RP) for comment to the Agreement States, with the preferred option being the creation of a new Part 41 dedicated to uranium recovery regulation. The Commission directed the staff to revise the draft RP to reflect the Commission's guidance in the other uranium recovery SRMs.

On September 11, 2000, the staff transmitted the draft RP to all States for comment. The staff sent the draft RP to all States rather than just Agreement States because the issue of concurrent jurisdiction regarding non-radiological hazards primarily affects non-Agreement States, and the staff wanted to give those States an opportunity to comment on the draft RP. Comments have been received from several States. In addition, the NMA and two licensees provided comments on the draft RP. The staff will consider all the comments received in preparing its final RP, which it expects to issue in early 2001.

DISPOSAL OF NON-11e.(2) BYPRODUCT MATERIAL IN TAILINGS IMPOUNDMENTS (SECY-99-012)

In 1995, the staff published guidance, in the *Federal Register* (60 FR 49296), for the disposal, in uranium mill tailings impoundments, of radioactive material that is not byproduct material, as defined in section 11e.(2) of the AEA. The guidance consisted of 10 criteria to determine whether to approve a proposed disposal of non-11e.(2) byproduct material in a uranium mill tailings impoundment. In its 1998 white paper, the NMA emphasized that the criteria were too restrictive, pointing out that no requests for such disposals have been made since the guidance was issued. The Commission, in the SRM for SECY-99-012, approved an option that would allow more flexibility in permitting non-11e.(2) material to be disposed of in tailings impoundments. The NRC intends to incorporate the criteria into the new Part 41. In the interim, the Commission directed the staff to implement the SRM.

To comply with the direction in the SRM, the staff is revising the 1995 guidance in the following manner:

- The staff will remove the prohibitions, found in items 2, 4, and 5, regarding non-AEA radioactive material and material subject to regulation under other legislative authorities, such as the Toxic Substance Control Act (TSCA) or the Resource Conservation and Recovery Act (RCRA).
- The staff will add a criterion regarding approval from the appropriate regulators of TSCA, RCRA, and non-AEA radioactive material for disposal of such material in the tailings impoundment.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
WASHINGTON, D.C. 20555-0001

November 30, 2000

NRC REGULATORY ISSUE SUMMARY 2000-23
RECENT CHANGES TO URANIUM RECOVERY POLICY

ADDRESSEES

All holders of materials licenses for uranium and thorium recovery facilities.

INTENT

The U.S. Nuclear Regulatory Commission (NRC) is issuing this regulatory issue summary (RIS) to inform materials licensees of the Commission's decisions on four Commission Papers prepared by the Uranium Recovery staff and the Office of the General Counsel (OGC). All the policy decisions will be codified in the 10 CFR Part 41 rulemaking that has been initiated. No specific action nor written response is required.

BACKGROUND

NRC staff prepared four Commission Papers in 1999 to address various uranium recovery issues. One Commission Paper (SECY-99-011, "Draft Rulemaking Plan; Domestic Licensing of Uranium and Thorium Recovery facilities - Proposed New 10 CFR Part 41") addressed the need to revise and update uranium recovery regulations, particularly with respect to in situ leach (ISL) facilities and recommended the initiation of rulemaking to create a new Part 41 specific to uranium recovery. The other three Commission Papers addressed issues raised by the National Mining Association (NMA) in its April 1998 paper, "Recommendations for a Coordinated Approach to Regulating the Uranium Recovery Industry." The first of those papers (SECY-99-012, "Use of Uranium Mill Tailings Impoundments for the Disposal of Other Than 11e(2) Byproduct Materials, and Reviews of Applications to Process Material Other Than Natural Ore") discussed the disposal of radioactive waste, other than byproduct material, defined in section 11e.(2) of the Atomic Energy Act (AEA) of 1954, as amended, in mill tailings impoundments, and the processing of material, other than natural ore, for source material at licensed uranium mills. The second of those papers (SECY-99-013, "Recommendations on ways to Improve the Efficiency of NRC Regulation at In Situ Leach Uranium

Attachment E

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 12 2001

OFFICE OF
AIR AND RADIATION

Mr. William von Till
Fuel Cycle Licensing Branch
Division of Fuel Cycle Safety and Safeguards
U.S. Nuclear Regulatory Commission
Mail Stop T-8A33
Washington, DC 20555

Dear Mr. von Till:

We are writing to you in response to the Nuclear Regulatory Commission's (NRC) Federal Register Notice of January 9, 2001, Volume 66, Number 6, pages 1702-1703. In that notice, comments were requested regarding the application of International Uranium Corporation (IUSA) to amend its source material license SUA-1358 to receive and process alternate feed materials. IUSA, according to the application materials, affidavits and appendices which we examined, has applied to have its license amended to allow for the processing of alternate feed material consisting of lead (Pb) sludge containing uranium isotopes and decay products of the U^{235} and U^{238} series from MolyCorp's Mountain Pass facility in California. As explained below, we have concerns regarding this application that we believe require further discussions between EPA and NRC.

IUSA's application stated that the material in question is not a listed hazardous waste under Subtitle C of the Resource Conservation and Recovery Act (RCRA). While this appears to be accurate, we would like you to be aware that according to EPA's Region 9 Office, the material in question is regulated under RCRA as a characteristic hazardous waste and has been classified by the state of California as such (further background materials and documentation are available from us if needed.). Therefore, if the lead sulfide material were to be removed from the current storage ponds it may be subject to RCRA hazardous waste regulations for transportation, treatment, and storage. It is unclear whether RCRA jurisdiction would apply to some components of the waste after it is licensed as a source material.

IUSA also asserts in its application that once NRC has determined the waste to be deemed source material, it can be removed from the MolyCorp facility as a "recycled mineral waste" under EPA regulations. However, EPA's Office of Solid Waste and Office of General Counsel at this time can not confirm whether this regulatory interpretation is valid without having an opportunity to review NRC's legal opinion on this important matter. We request that you meet with us at your earliest convenience to clarify this point and to work with us to reach consensus

Thank you for the opportunity to comment on this proposal. Please contact Loren Setlow of my office at 202-564-9445 so that we can arrange to have this discussion.

Sincerely,

Frank Marcinowski
Director, Radiation Protection Division

cc: RDellinger/EPA/OSWER
RKinch/EPA/OSWER
SHoffman/EPA/OSWER
JMichaud/EPA/OGC
KMatthews/EPA/OGC
MLammering/EPA/Region 8
TBrown/EPA/Region 8
RGraham/EPA/Region 8
MBandrowski/EPA/Region 9
BCofer/EPA/Region 9
EForinash/EPA/ORIA
LSetlow/EPA/ORIA

Attachment F

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 25 2001

OFFICE OF
AIR AND RADIATION

Mr. William von Till
Fuel Cycle Licensing Branch
Division of Fuel Cycle Safety and Safeguards
U.S. Nuclear Regulatory Commission
Mail Stop T-8A33
Washington, D.C. 20555

Dear Mr. von Till:

This is a follow-up to our previous letter to you of February 12, 2001. That letter expressed our concerns with the application of International Uranium Corporation (IUSA) to amend its source material license SUA-1358 to receive and process alternate feed materials. IUSA applied to have its license amended to allow for the processing of alternate feed material consisting of lead (Pb) slurries containing uranium isotopes and decay products of the U^{235} and U^{238} series from MolyCorp's Mountain Pass facility in California.

The Environmental Protection Agency (EPA) Headquarters and Regional personnel discussed the key legal and factual issues raised by IUSA's proposed processing of the MolyCorp slurries. Determining whether the MolyCorp slurries are hazardous waste requires resolution of a threshold issue which involves a number of site-specific factors, one being whether the materials are regulated "solid wastes." From the facts available to us, it appears likely that, under the federal Resource Conservation and Recovery Act (RCRA) recycling regulations, the slurries would be classified as either by-products or sludges which exhibit one of the RCRA hazardous waste characteristics. Such by-products and sludges are not classified as solid wastes when they are legitimately reclaimed. Materials which are not solid wastes are not regulated as hazardous wastes under Subtitle C of RCRA.

Under the federal rules, the entities handling recycled materials are responsible for determining whether legitimate recycling is occurring and whether the material is a solid waste, with oversight by the responsible regulatory agency. EPA has authorized the States of California and Utah to implement state RCRA programs in lieu of the federal RCRA program, making them primarily responsible for this oversight within their state. In addition, authorized state RCRA programs are sometimes broader in scope or more stringent than the federal program and may

regulate materials not regulated under the federal regulations. Thus, we recommend that NRC, obtain the States' views by contacting the following individuals:

Mr. Watson Gin
Deputy Director, Hazardous Waste
Management Program
Department of Toxic Substances Control
P.O. Box 806
Sacramento, CA 95812-0806

Mr. Don Verbica
Division of Solid & Hazardous Waste
P.O. Box 144880
Salt Lake City, UT 84114-4880

As a procedural matter, the NRC "Interim Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments" and "Interim Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores," both dated November 30, 2000, provide for the applicant to demonstrate that the material to be processed and/or disposed in the mill tailings impoundment not be a listed hazardous waste. We suggest that the NRC guidance be amended to recommend that the applicant obtain the views, as described above, of authorized States where the material is originally found and where the material is to be processed. We also suggest that applicants consult with States through which the materials may travel on their way to the licensed facility. (For this case, we would recommend that NRC consult with California, Nevada and Utah.) If the material is a characteristic or listed hazardous waste in the state of origin or in any "transit" state, RCRA regulations would apply to storage and transportation. It is our hope that this may help to expedite future such applications.

Thank you for the opportunity to comment on this proposal. Please contact Ms. Teena Wooten of EPA's Office of Solid Waste at 703-308- 8751, or Loren Setlow of my office at 202-564-9445 if you have any further question on this matter.

Sincerely,

Frank Marcinowski, Acting Director
Radiation Protection Division

cc: D. Verbica/VT, Division of Solid & Hazardous Waste
W. Gin/CA, Dept. Toxic Substances Control
M. Lammering/EPA/Region 8
T. Brown/EPA/Region 8
R. Graham/EPA/Region 8
M. Bandrowski/EPA/Region 9
C. Nelson/EPA/Region 9
B. Cofer/EPA/Region 9

Attachment 6

separately produced by the production process. Examples are process residues such as slags or distillation column bottoms. The term does not include a co-product that is produced for the general public's use and is ordinarily used in the form it is produced by the process.

(4) A material is "reclaimed" if it is processed to recover a usable product, or if it is regenerated. Examples are recovery of lead values from spent batteries and regeneration of spent solvents.

(5) A material is "used or reused" if it is either:

(i) Employed as an ingredient (including use as an intermediate) in an industrial process to make a product (for example, distillation bottoms from one process used as feedstock in another process). However, a material will not satisfy this condition if distinct components of the material are recovered as separate end products (as when metals are recovered from metal-containing secondary materials); or

(ii) Employed in a particular function or application as an effective substitute for a commercial product (for example, spent pickle liquor used as phosphorous precipitant and sludge conditioner in wastewater treatment).

(6) "Scrap metal" is bits and pieces of metal parts (*e.g.*,) bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (*e.g.*, radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled.

(7) A material is "recycled" if it is used, reused, or reclaimed.

(8) A material is "accumulated speculatively" if it is accumulated before being recycled. A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that—during the calendar year (commencing on January 1)—the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period. In calculating the percentage of turnover, the 75 percent requirement is to be applied to each material of the same type (*e.g.*, slags from a single smelting process) that is recycled in the same way (*i.e.*, from which the same material is recovered or that is used in the same way). Materials accumulating in units that would be exempt from regulation under § 261.4(c) are not to be included in making the calculation. (Materials that are already defined as solid wastes also are not to be included in making the calculation.) Materials are no longer in this category once they are removed from accumulation for recycling, however.

(9) "Excluded scrap metal" is processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal.

(10) "Processed scrap metal" is scrap metal which has been manually or physically altered to either separate it into distinct materials to enhance economic value or to improve the handling of materials. Processed scrap metal includes, but is not limited to scrap metal which has been baled, shredded, sheared, chopped, crushed, flattened, cut, melted, or separated by metal type (i.e., sorted), and, fines, drosses and related materials which have been agglomerated. (Note: shredded circuit boards being sent for recycling are not considered processed scrap metal. They are covered under the exclusion from the definition of solid waste for shredded circuit boards being recycled (§ 261.4(a)(13)).

(11) "Home scrap metal" is scrap metal as generated by steel mills, foundries, and refineries such as turnings, cuttings, punchings, and borings.

(12) "Prompt scrap metal" is scrap metal as generated by the metal working/fabrication industries and includes such scrap metal as turnings, cuttings, punchings, and borings. Prompt scrap is also known as industrial or new scrap metal.

[45 FR 33119, May 19, 1980, as amended at 48 FR 14293, Apr. 1, 1983; 50 FR 663, Jan. 4, 1985; 51 FR 10174, Mar. 24, 1986; 51 FR 40636, Nov. 7, 1986; 62 FR 26018, May 12, 1997]

§ 261.2 Definition of solid waste.

(a)(1) A *solid waste* is any discarded material that is not excluded by § 261.4(a) or that is not excluded by

variance granted under §§ 260.30 and 260.31.

(2) A *discarded material* is any material which is:

(i) *Abandoned*, as explained in paragraph (b) of this section; or

(ii) *Recycled*, as explained in paragraph (c) of this section; or

(iii) Considered *inherently waste-like*, as explained in paragraph (d) of this section; or

(iv) *A military munition* identified as a solid waste in 40 CFR 266.202.

(b) Materials are solid waste if they are *abandoned* by being:

(1) Disposed of; or

(2) Burned or incinerated; or

(3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated.

(c) Materials are solid wastes if they are *recycled*—or accumulated, stored, or treated before recycling—as specified in paragraphs (c)(1) through (4) of this section.

(1) *Used in a manner constituting disposal.* (i) Materials noted with a "*" in Column 1 of Table I are solid wastes when they are:

(A) Applied to or placed on the land in a manner that constitutes disposal; or

(B) Used to produce products that are applied to or placed on the land or are otherwise contained in products that are applied to or placed on the land (in which cases the product itself remains a solid waste).

(ii) However, commercial chemical products listed in § 261.33 are not solid wastes if they are applied to the land and that is their ordinary manner of use.

(2) *Burning for energy recovery.* (i) Materials noted with a "*" in column 2 of Table 1 are solid wastes when they are:

(A) Burned to recover energy;

(B) Used to produce a fuel or are otherwise contained in fuels (in which cases the fuel itself remains a solid waste).

(ii) However, commercial chemical products listed in § 261.33 are not solid wastes if they are themselves fuels.

(3) *Reclaimed.* Materials noted with a "*" in column 3 of Table 1 are solid wastes when reclaimed (except as provided under 40 CFR 261.4(a)(17)). Materials noted with a "—" in column 3 of Table 1 are not solid wastes when reclaimed (except as provided under 40 CFR 261.4(a)(17)).

(4) *Accumulated speculatively.* Materials noted with a "*" in column 4 of Table 1 are solid wastes when accumulated speculatively.

TABLE 1

	Use constituting disposal (§ 261.2(c)(1))	Energy recovery/ fuel (§ 261.2(c)(2))	Reclamation (§ 261.2(c)(3)) (except as provided in 261.4(a)(17) for mineral processing secondary materials)	Speculative accumulation (§ 261.2(c)(4))
	1	2	3	4
Spent Materials	(*)	(*)	(*)	(*)
Sludges (listed in 40 CFR Part 261.31 or 261.32	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	—	(*)
By-products (listed in 40 CFR 261.31 or 261.32)	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	—	(*)
Commercial chemical products listed in 40 CFR 261.33	(*)	(*)	—	—
Scrap metal other than excluded scrap metal (see 261.1(c)(9))	(*)	(*)	(*)	(*)

Note: The terms "spent materials," "sludges," "by-products," and "scrap metal" and "processed scrap metal" are defined in § 261.1.

(d) *Inherently waste-like materials.* The following materials are solid wastes when they are recycled in any manner:

(1) Hazardous Waste Nos. F020, F021 (unless used as an ingredient to make a product at the site of generation), F022, F023, F026, and F028.

(2) Secondary materials fed to a halogen acid furnace that exhibit a characteristic of a hazardous waste or are listed as a hazardous waste as defined in subparts C or D of this part, except for brominated material that meets the following criteria:

(i) The material must contain a bromine concentration of at least 45%; and

(ii) The material must contain less than a total of 1% of toxic organic compounds listed in appendix VIII; and

(iii) The material is processed continually on-site in the halogen acid furnace via direct conveyance (hard piping).

(3) The Administrator will use the following criteria to add wastes to that list:

(i)(A) The materials are ordinarily disposed of, burned, or incinerated; or

(B) The materials contain toxic constituents listed in appendix VIII of part 261 and these constituents are not ordinarily found in raw materials or products for which the materials substitute (or are found in raw materials or products in smaller concentrations) and are not used or reused during the recycling process; and

(ii) The material may pose a substantial hazard to human health and the environment when recycled.

(e) *Materials that are not solid waste when recycled.* (1) Materials are not solid wastes when they can be shown to be recycled by being:

(i) Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed; or

(ii) Used or reused as effective substitutes for commercial products; or

(iii) Returned to the original process from which they are generated, without first being reclaimed or land disposed. The material must be returned as a substitute for feedstock materials. In cases where the original process to which the material is returned is a secondary process, the materials must be managed such that there is no placement on the land. In cases where the materials are generated and reclaimed within the primary mineral processing industry, the conditions of the exclusion found at § 261.4(a)(17) apply rather than this paragraph.

(2) The following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process (described in paragraphs (e)(1)(i) through (iii) of this section):

(i) Materials used in a manner constituting disposal, or used to produce products that are applied to the land; or

(ii) Materials burned for energy recovery, used to produce a fuel, or contained in fuels; or

(iii) Materials accumulated speculatively; or

(iv) Materials listed in paragraphs (d)(1) and (d)(2) of this section.

(f) *Documentation of claims that materials are not solid wastes or are conditionally exempt from regulation.* Respondents in actions to enforce regulations implementing subtitle C of RCRA who raise a claim that a certain material is not a solid waste, or is conditionally exempt from regulation, must demonstrate that there is a known market or disposition for the material, and that they meet the terms of the exclusion or exemption. In doing so, they must provide appropriate documentation (such as contracts showing that a second person uses the material as an ingredient in a production process) to demonstrate that the material is not a waste, or is exempt from regulation. In addition, owners or operators of facilities claiming that they actually are recycling materials must show that they have the necessary equipment to do so.

[50 FR 664, Jan. 4, 1985, as amended at 50 FR 33542, Aug. 20, 1985; 56 FR 7206, Feb. 21, 1991; 56 FR 32688, July 17, 1991; 56 FR 42512, Aug. 27, 1991; 57 FR 38564, Aug. 25, 1992; 59 FR 48042, Sept. 19, 1994; 62 FR 6651, Feb. 12, 1997; 62 FR 26019, May 12, 1997; 63 FR 28636, May 26, 1998; 64 FR 24513, May 11, 1999]

§ 261.3 Definition of hazardous waste.

(a) A solid waste, as defined in § 261.2, is a hazardous waste if:

(1) It is not excluded from regulation as a hazardous waste under § 261.4(b); and

(2) It meets any of the following criteria:

(i) It exhibits any of the characteristics of hazardous waste identified in subpart C of this part. However, any mixture of a waste from the extraction, beneficiation, and processing of ores

and minerals excluded under § 261.4(b)(7) and any other solid waste exhibiting a characteristic of hazardous waste under subpart C is a hazardous waste only if it exhibits a characteristic that would not have been exhibited by the excluded waste alone if such mixture had not occurred, or if it continues to exhibit any of the characteristics exhibited by the non-excluded wastes prior to mixture. Further, for the purposes of applying the Toxicity Characteristic to such mixtures, the mixture is also a hazardous waste if it exceeds the maximum concentration for any contaminant listed in table I to § 261.24 that would not have been exceeded by the excluded waste alone if the mixture had not occurred or if it continues to exceed the maximum concentration for any contaminant exceeded by the nonexempt waste prior to mixture.

(ii) It is listed in subpart D of this part and has not been excluded from the lists in subpart D of this part under §§ 260.20 and 260.22 of this chapter.

(iii) It is a mixture of a solid waste and a hazardous waste that is listed in subpart D of this part solely because it exhibits one or more of the characteristics of hazardous waste identified in subpart C of this part, unless the resultant mixture no longer exhibits any characteristic of hazardous waste identified in subpart C of this part, or unless the solid waste is excluded from regulation under § 261.4(b)(7) and the resultant mixture no longer exhibits any characteristic of hazardous waste identified in subpart C of this part for which the hazardous waste listed in subpart D of this part was listed. (However, nonwastewater mixtures are still subject to the requirements of part 268 of this chapter, even if they no longer exhibit a characteristic at the point of land disposal).

(iv) It is a mixture of solid waste and one or more hazardous wastes listed in subpart D of this part and has not been excluded from paragraph (a)(2) of this section under §§ 260.20 and 260.22 of this chapter; however, the following mixtures of solid wastes and hazardous wastes listed in subpart D of this part are not hazardous wastes (except by application of paragraph (a)(2) (i) or (ii) of this section) if the generator can demonstrate that the mixture consists of wastewater the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act (including wastewater at facilities which have eliminated the discharge of wastewater) and:

(A) One or more of the following solvents listed in § 261.31—carbon tetrachloride, tetrachloroethylene, trichloroethylene—*Provided*, That the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 1 part per million; or

(B) One or more of the following spent solvents listed in § 261.31—methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, spent chlorofluorocarbon solvents—provided that the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 25 parts per million; or

(C) One of the following wastes listed in § 261.32, provided that the wastes are discharged to the refinery oil recovery sewer before primary oil/water/solids separation—heat exchanger bundle cleaning sludge from the petroleum refining industry (EPA Hazardous Waste No. K050), crude oil storage tank sediment from petroleum refining operations (EPA Hazardous Waste No K169), clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations (EPA Hazardous Waste No K170), spent hydrotreating catalyst (EPA Hazardous Waste No. K171), and spent hydrorefining catalyst (EPA Hazardous Waste No. K172); or

(D) A discarded commercial chemical product, or chemical intermediate listed in § 261.33, arising from *de minimis*

sses of these materials from manu-
acturing operations in which these
aterials are used as raw materials or
e produced in the manufacturing
ocess. For purposes of this paragraph
)(2)(iv)(D), "*de minimis*" losses include
ose from normal material handling
erations (e.g., spills from the unload-
g or transfer of materials from bins
other containers, leaks from pipes,
lves or other devices used to transfer
aterials); minor leaks of process
uipment, storage tanks or con-
iners; leaks from well maintained
mp packings and seals; sample
rgings; relief device discharges; dis-
arges from safety showers and rins-
g and cleaning of personal safety
uipment; and rinstate from empty
ntainers or from containers that are
ndered empty by that rinsing; or

(E) Wastewater resulting from lab-
atory operations containing toxic (T)
astes listed in subpart D of this part,
ovided, That the annualized average
w of laboratory wastewater does not
ceed one percent of total wastewater
w into the headworks of the facili-
's wastewater treatment or pre-
eatment system or provided the
astes, combined annualized average
ncentration does not exceed one part
r million in the headworks of the fa-
lity's wastewater treatment or pre-
eatment facility. Toxic (T) wastes
ed in laboratories that are dem-
strated not to be discharged to
astewater are not to be included in
is calculation; or

F) One or more of the following
astes listed in § 261.32—wastewaters
m the production of carbamates and
rbamoyl oximes (EPA Hazardous
aste No. K157)—Provided that the
aximum weekly usage of formalde-
de, methyl chloride, methylene chlo-
le, and triethylamine (including all
ounts that can not be demonstrated
be reacted in the process, destroyed
rough treatment, or is recovered,
., what is discharged or volatilized)
ided by the average weekly flow of
ocess wastewater prior to any dilu-
ns into the headworks of the facili-
's wastewater treatment system does
t exceed a total of 5 parts per million
weight; or

G) Wastewaters derived from the
atment of one or more of the following wastes listed in § 261.32—organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156).—Provided, that the maximum concentration of formaldehyde, methyl chloride, methylene chloride, and triethylamine prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of 5 milligrams per liter.

(v) *Rebuttable presumption for used oil.* Used oil containing more than 1000 ppm total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in subpart D of part 261 of this chapter. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, by using an analytical method from SW-846, Third Edition, to show that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix VIII of part 261 of this chapter). EPA Publication SW-846, Third Edition, is available for the cost of $110.00 from the Government Printing Office, Superintendent of Documents, PO Box 371954, Pittsburgh, PA 15250-7954. 202-512-1800 (document number 955-001-00000-1).

(A) The rebuttable presumption does not apply to metalworking oils/fluids containing chlorinated paraffins, if they are processed, through a tolling agreement, to reclaim metalworking oils/fluids. The presumption does apply to metalworking oils/fluids if such oils/fluids are recycled in any other manner, or disposed.

(B) The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons (CFCs) removed from refrigeration units where the CFCs are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with CFCs that have been mixed with used oil from sources other than refrigeration units.

(b) A solid waste which is not excluded from regulation under paragraph (a)(1) of this section becomes a hazardous waste when any of the following events occur:

(1) In the case of a waste listed in subpart D of this part, when the waste first meets the listing description set forth in subpart D of this part.

(2) In the case of a mixture of solid waste and one or more listed hazardous wastes, when a hazardous waste listed in subpart D is first added to the solid waste.

(3) In the case of any other waste (including a waste mixture), when the waste exhibits any of the characteristics identified in subpart C of this part.

(c) Unless and until it meets the criteria of paragraph (d) of this section:

(1) A hazardous waste will remain a hazardous waste.

(2)(i) Except as otherwise provided in paragraph (c)(2)(ii) of this section, any solid waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash, emission control dust, or leachate (but not including precipitation run-off) is a hazardous waste. (However, materials that are reclaimed from solid wastes and that are used beneficially are not solid wastes and hence are not hazardous wastes under this provision unless the reclaimed material is burned for energy recovery or used in a manner constituting disposal.)

(ii) The following solid wastes are not hazardous even though they are generated from the treatment, storage, or disposal of a hazardous waste, unless they exhibit one or more of the characteristics of hazardous waste:

(A) Waste pickle liquor sludge generated by lime stabilization of spent pickle liquor from the iron and steel industry (SIC Codes 331 and 332).

(B) Waste from burning any of the materials exempted from regulation by § 261.6(a)(3)(iii) and (iv).

(C)(*1*) Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062 or F006 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations or industrial furnaces (as defined in paragraphs (6), (7), and (13) of the definition for "Industrial furnace" in 40 CFR 260.10), that are disposed in subtitle D units, provided that these residues meet the generic exclusion levels identified in the tables in this paragraph for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements must be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan; at a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or operation generating the waste changes. Persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements.

Constituent	Maximum for any single composite sample—TCLP (mg/l)
Generic exclusion levels for K061 and K062 nonwastewater HTMR residues	
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70
Generic exclusion levels for F006 nonwastewater HTMR residues	
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Cyanide (total) (mg/kg)	1.8
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70

(*2*) A one-time notification and certification must be placed in the facility's files and sent to the EPA region or authorized state for K061, K062 or F006 HTMR residues that meet the generic exclusion levels for all constituents and do not exhibit any characteristics that are sent to subtitle D units. The notification and certification that is placed in the generators or treaters

es must be updated if the process or eration generating the waste anges and/or if the subtitle D unit re-iving the waste changes. However, .e generator or treater need only no-fy the EPA region or an authorized ate on an annual basis if such anges occur. Such notification and ertification should be sent to the EPA egion or authorized state by the end of he calendar year, but no later than)ecember 31. The notification must in-:lude the following information: The name and address of the subtitle D unit receiving the waste shipments; the EPA Hazardous Waste Number(s) and treatability group(s) at the initial point of generation; and, the treatment standards applicable to the waste at the initial point of generation. The certification must be signed by an authorized representative and must state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

(D) Biological treatment sludge from the treatment of one of the following wastes listed in § 261.32—organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156), and wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K157).

(E) Catalyst inert support media separated from one of the following wastes listed in § 261.32—Spent hydrotreating catalyst (EPA Hazardous Waste No. K171), and Spent hydrorefining catalyst (EPA Hazardous Waste No. K172).

(d) Any solid waste described in paragraph (c) of this section is not a hazardous waste if it meets the following criteria:

(1) In the case of any solid waste, it does not exhibit any of the characteristics of hazardous waste identified in subpart C of this part. (However, wastes that exhibit a characteristic at the point of generation may still be subject to the requirements of part 268, even if they no longer exhibit a characteristic at the point of land disposal.)

(2) In the case of a waste which is a listed waste under subpart D of this part, contains a waste listed under subpart D of this part or is derived from a waste listed in subpart D of this part, it also has been excluded from paragraph (c) of this section under §§ 260.20 and 260.22 of this chapter.

(e) [Reserved]

(f) Notwithstanding paragraphs (a) through (d) of this section and provided the debris as defined in part 268 of this chapter does not exhibit a characteristic identified at subpart C of this part, the following materials are not subject to regulation under 40 CFR parts 260, 261 to 266, 268, or 270:

(1) Hazardous debris as defined in part 268 of this chapter that has been treated using one of the required extraction or destruction technologies specified in Table 1 of § 268.45 of this chapter; persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements; or

(2) Debris as defined in part 268 of this chapter that the Regional Administrator, considering the extent of contamination, has determined is no longer contaminated with hazardous waste.

[57 FR 7632, Mar. 3, 1992; 57 FR 23063, June 1, 1992, as amended at 57 FR 37263, Aug. 18, 1992; 57 FR 41611, Sept. 10, 1992; 57 FR 49279, Oct. 30, 1992; 59 FR 38545, July 28, 1994; 60 FR 7848, Feb. 9, 1995; 63 FR 28637, May 26, 1998; 63 FR 42184, Aug. 6, 1998]

§ 261.4 Exclusions.

(a) *Materials which are not solid wastes.* The following materials are not solid wastes for the purpose of this part:

(1)(i) Domestic sewage; and

(ii) Any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly-owned treatment works for treatment. "Domestic sewage" means untreated sanitary wastes that pass through a sewer system.

(2) Industrial wastewater discharges that are point source discharges subject to regulation under section 402 of the Clean Water Act, as amended.

[*Comment:* This exclusion applies only to the actual point source discharge. It does not exclude industrial wastewaters while they are being collected, stored or treated before discharge, nor does it exclude sludges that are generated by industrial wastewater treatment.]

(3) Irrigation return flows.

(4) Source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 *et seq.*

(5) Materials subjected to in-situ mining techniques which are not removed from the ground as part of the extraction process.

(6) Pulping liquors (*i.e.*, black liquor) that are reclaimed in a pulping liquor recovery furnace and then reused in the pulping process, unless it is accumulated speculatively as defined in § 261.1(c) of this chapter.

(7) Spent sulfuric acid used to produce virgin sulfuric acid, unless it is accumulated speculatively as defined in § 261.1(c) of this chapter.

(8) Secondary materials that are reclaimed and returned to the original process or processes in which they were generated where they are reused in the production process provided:

(i) Only tank storage is involved, and the entire process through completion of reclamation is closed by being entirely connected with pipes or other comparable enclosed means of conveyance;

(ii) Reclamation does not involve controlled flame combustion (such as occurs in boilers, industrial furnaces, or incinerators);

(iii) The secondary materials are never accumulated in such tanks for over twelve months without being reclaimed; and

(iv) The reclaimed material is not used to produce a fuel, or used to produce products that are used in a manner constituting disposal.

(9)(i) Spent wood preserving solutions that have been reclaimed and are reused for their original intended purpose; and

(ii) Wastewaters from the wood preserving process that have been reclaimed and are reused to treat wood.

(iii) Prior to reuse, the wood preserving wastewaters and spent wood preserving solutions described in paragraphs (a)(9)(i) and (a)(9)(ii) of this section, so long as they meet all of the following conditions:

(A) The wood preserving wastewaters and spent wood preserving solutions are reused on-site at water borne plants in the production process for their original intended purpose;

(B) Prior to reuse, the wastewaters and spent wood preserving solutions are managed to prevent release to either land or groundwater or both;

(C) Any unit used to manage wastewaters and/or spent wood preserving solutions prior to reuse can be visually or otherwise determined to prevent such releases;

(D) Any drip pad used to manage the wastewaters and/or spent wood preserving solutions prior to reuse complies with the standards in part 265, subpart W of this chapter, regardless of whether the plant generates a total of less than 100 kg/month of hazardous waste; and

(E) Prior to operating pursuant to this exclusion, the plant owner or operator submits to the appropriate Regional Administrator or State Director a one-time notification stating that the plant intends to claim the exclusion, giving the date on which the plant intends to begin operating under the exclusion, and containing the following language: "I have read the applicable regulation establishing an exclusion for wood preserving wastewaters and spent wood preserving solutions and understand it requires me to comply at all times with the conditions set out in the regulation." The plant must maintain a copy of that document in its on-site records for a period of no less than 3 years from the date specified in the notice. The exclusion applies only so long as the plant meets all of the conditions. If the plant goes out of compliance with any condition, it may apply to the appropriate Regional Administrator or State Director for reinstatement. The Regional Administrator or State Director may reinstate the exclusion upon finding that the plant has returned to compliance with all conditions and that violations are not likely to recur.

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agement, resource recovery, and resource conservation systems which preserve and enhance the quality of air, water, and land resources; and.

(11) establishing a cooperative effort among the Federal, State, and local governments and private enterprise in order to recover valuable materials and energy from solid waste.

(b) National policy

The Congress hereby declares it to be the national policy of the United States that, wherever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible. Waste that is nevertheless generated should be treated, stored, or disposed of so as to minimize the present and future threat to human health and the environment.

(Pub. L. 89-272, title II, § 1003, as added Pub. L. 94-580, § 2, Oct. 21, 1976, 90 Stat. 2798; amended Pub. L. 98-616, title I, § 101(b), Nov. 8, 1984, 98 Stat. 3224.)

PRIOR PROVISIONS

Provisions similar to those in this section were contained in section 3251 of this title, prior to the general amendment of the Solid Waste Disposal Act by Pub. L. 94-580.

AMENDMENTS

1984—Subsec. (a). Pub. L. 98-616, § 101(b)(1), designated existing provisions as subsec. (a).

Subsec. (a)(4) to (11). Pub. L. 98-616, § 101(b)(2), struck out par. (4) which provided for regulating the treatment, storage, transportation, and disposal of hazardous wastes which have adverse effects on health and the environment, added pars. (4) to (7), and redesignated former pars. (5) to (8) as (8) to (11), respectively.

Subsec. (b). Pub. L. 98-616, § 101(b)(1), added subsec. (b).

SECTION REFERRED TO IN OTHER SECTIONS

This section is referred to in section 6982 of this title.

§ 6903. Definitions

As used in this chapter:

(1) The term "Administrator" means the Administrator of the Environmental Protection Agency.

(2) The term "construction," with respect to any project of construction under this chapter, means (A) the erection or building of new structures and acquisition of lands or interests therein, or the acquisition, replacement, expansion, remodeling, alteration, modernization, or extension of existing structures, and (B) the acquisition and installation of initial equipment of, or required in connection with, new or newly acquired structures or the expanded, remodeled, altered, modernized or extended part of existing structures (including trucks and other motor vehicles, and tractors, cranes, and other machinery) necessary for the proper utilization and operation of the facility after completion of the project; and includes preliminary planning to determine the economic and engineering feasibility and the public health and safety aspects of the project, the engineering, architectural, legal, fiscal, and economic investigations and studies, and any surveys, designs, plans, working drawings, specifications, and other action necessary for the carrying out of the project, and (C) the inspection and supervision of the process of carrying out the project to completion.

(2A) The term "demonstration" means the initial exhibition of a new technology process or practice or a significantly new combination or use of technologies, processes or practices, subsequent to the development stage, for the purpose of proving technological feasibility and cost effectiveness.

(3) The term "disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

(4) The term "Federal agency" means any department, agency, or other instrumentality of the Federal Government, any independent agency or establishment of the Federal Government including any Government corporation, and the Government Printing Office.

(5) The term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may—

(A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

(B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

(6) The term "hazardous waste generation" means the act or process of producing hazardous waste.

(7) The term "hazardous waste management" means the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous wastes.

(8) For purposes of Federal financial assistance (other than rural communities assistance), the term "implementation" does not include the acquisition, leasing, construction, or modification of facilities or equipment or the acquisition, leasing, or improvement of land.

(9) The term "intermunicipal agency" means an agency established by two or more municipalities with responsibility for planning or administration of solid waste.

(10) The term "interstate agency" means an agency of two or more municipalities in different States, or an agency established by two or more States, with authority to provide for the management of solid wastes and serving two or more municipalities located in different States.

(11) The term "long-term contract" means, when used in relation to solid waste supply, a contract of sufficient duration to assure the viability of a resource recovery facility (to the extent that such viability depends upon solid waste supply).

(12) The term "manifest" means the form used for identifying the quantity, composition, and the origin, routing, and destination of hazardous waste during its transportation from the point of generation to the point of disposal, treatment, or storage.

(13) The term "municipality" (A) means a city, town, borough, county, parish, district, or other public body created by or pursuant to State law, with responsibility for the planning or administration of solid waste management, or an Indian tribe or authorized tribal organization or Alaska Native village or organization, and (B) includes any rural community or unincorporated town or village or any other public entity for which an application for assistance is made by a State or political subdivision thereof.

(14) The term "open dump" means any facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 6944 of this title and which is not a facility for disposal of hazardous waste.

(15) The term "person" means an individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body and shall include each department, agency, and instrumentality of the United States.

(16) The term "procurement item" means any device, good, substance, material, product, or other item whether real or personal property which is the subject of any purchase, barter, or other exchange made to procure such item.

(17) The term "procuring agency" means any Federal agency, or any State agency or agency of a political subdivision of a State which is using appropriated Federal funds for such procurement, or any person contracting with any such agency with respect to work performed under such contract.

(18) The term "recoverable" refers to the capability and likelihood of being recovered from solid waste for a commercial or industrial use.

(19) The term "recovered material" means waste material and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

(20) The term "recovered resources" means material or energy recovered from solid waste.

(21) The term "resource conservation" means reduction of the amounts of solid waste that are generated, reduction of overall resource consumption, and utilization of recovered resources.

(22) The term "resource recovery" means the recovery of material or energy from solid waste.

(23) The term "resource recovery system" means a solid waste management system which provides for collection, separation, recycling, and recovery of solid wastes, including disposal of nonrecoverable waste residues.

(24) The term "resource recovery facility" means any facility at which solid waste is processed for the purpose of extracting, converting to energy, or otherwise separating and preparing solid waste for reuse.

(25) The term "regional authority" means the authority established or designated under section 6946 of this title.

(26) The term "sanitary landfill" means a facility for the disposal of solid waste which meets the criteria published under section 6944 of this title.

(26A) The term "sludge" means any solid, semisolid or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effects.

(27) The term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 1342 of title 33, or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923) [42 U.S.C. 2011 et seq.].

(28) The term "solid waste management" means the systematic administration of activities which provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid waste.

(29) The term "solid waste management facility" includes—

(A) any resource recovery system or component thereof,

(B) any system, program, or facility for resource conservation, and

(C) any facility for the collection, source separation, storage, transportation, transfer, processing, treatment or disposal of solid wastes, including hazardous wastes, whether such facility is associated with facilities generating such wastes or otherwise.

(30) The terms "solid waste planning", "solid waste management", and "comprehensive planning" include planning or management respecting resource recovery and resource conservation.

(31) The term "State" means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

(32) The term "State authority" means the agency established or designated under section 6947 of this title.

(33) The term "storage", when used in connection with hazardous waste, means the containment of hazardous waste, either on a temporary basis or for a period of years, in such a manner as not to constitute disposal of such hazardous waste.

(34) The term "treatment", when used in connection with hazardous waste, means any method, technique, or process, including neu-

tralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste or so as to render such waste nonhazardous, safer for transport, amenable for recovery, amenable for storage, or reduced in volume. Such term includes any activity or processing designed to change the physical form or chemical composition of hazardous waste so as to render it nonhazardous.

(35) The term "virgin material" means a raw material, including previously unused copper, aluminum, lead, zinc, iron, or other metal or metal ore, any undeveloped resource that is, or with new technology will become, a source of raw materials.

(36) The term "used oil" means any oil which has been—

(A) refined from crude oil,

(B) used, and

(C) as a result of such use, contaminated by physical or chemical impurities.

(37) The term "recycled oil" means any used oil which is reused, following its original use, for any purpose (including the purpose for which the oil was originally used). Such term includes oil which is re-refined, reclaimed, burned, or reprocessed.

(38) The term "lubricating oil" means the fraction of crude oil which is sold for purposes of reducing friction in any industrial or mechanical device. Such term includes re-refined oil.

(39) The term "re-refined oil" means used oil from which the physical and chemical contaminants acquired through previous use have been removed through a refining process.

(40) Except as otherwise provided in this paragraph, the term "medical waste" means any solid waste which is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals. Such term does not include any hazardous waste identified or listed under subchapter III of this chapter or any household waste as defined in regulations under subchapter III of this chapter.

(41) The term "mixed waste" means waste that contains both hazardous waste and source, special nuclear, or by-product material subject to the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.).

(Pub. L. 89-272, title II, § 1004, as added Pub. L. 94-580, § 2, Oct. 21, 1976, 90 Stat. 2798; amended Pub. L. 95-609, § 7(b), Nov. 8, 1978, 92 Stat. 3081; Pub. L. 96-463, § 3, Oct. 15, 1980, 94 Stat. 2055; Pub. L. 96-482, § 2, Oct. 21, 1980, 94 Stat. 2334; Pub. L. 100-582, § 3, Nov. 1, 1988, 102 Stat. 2958; Pub. L. 102-386, title I, §§ 103, 105(b), Oct. 6, 1992, 106 Stat. 1507, 1512.)

References in Text

The Atomic Energy Act of 1954, referred to in pars. (27) and (41), is act Aug. 30, 1954, ch. 1073, 68 Stat. 921, as amended, which is classified generally to chapter 23 (§ 2011 et seq.) of this title. For complete classification of this Act to the Code, see Short Title note set out under section 2011 of this title and Tables.

Prior Provisions

Provisions similar to those in this section were contained in section 3252 of this title, prior to the general amendment of the Solid Waste Disposal Act by Pub. L. 94-580.

Amendments

1992—Par. (15). Pub. L. 102-386, § 103, inserted before period at end "and shall include each department, agency, and instrumentality of the United States".

Par. (41). Pub. L. 102-386, § 105(b), added par. (41).

1988—Par. (40). Pub. L. 100-582 added par. (40).

1980—Par. (14). Pub. L. 96-482, § 2(a), defined "open dump" to include a facility, substituted requirement that disposal facility or site not be a sanitary landfill meeting section 6944 of this title criteria for prior requirement that disposal site not be a sanitary landfill within meaning of section 6944 of this title, and required that the disposal facility or site not be a facility for disposal of hazardous waste.

Par. (19). Pub. L. 96-482, § 2(b), defined "recovered material" to cover byproducts, substituted provision for recovery or diversion of waste material and byproducts from solid waste for prior provision for collection or recovery of material from solid waste, and excluded materials and byproducts generated from and commonly reused within an original manufacturing process.

Pars. (36) to (39). Pub. L. 96-463, § 3, added pars. (36) to (39).

1978—Par. (8). Pub. L. 95-609, § 7(b)(1), struck out provision stating that employees' salaries due pursuant to subchapter IV of this chapter would not be included after Dec. 31, 1979.

Par. (10). Pub. L. 95-609, § 7(b)(2), substituted "management" for "disposal".

Par. (29)(C). Pub. L. 95-609, § 7(b)(3), substituted "the collection, source separation, storage, transportation, transfer, processing, treatment or disposal" for "the treatment".

Transfer of Functions

Enforcement functions of Administrator or other official of Environmental Protection Agency related to compliance with resource conservation and recovery permits used under this chapter with respect to preconstruction, construction, and initial operation of transportation system for Canadian and Alaskan natural gas transferred to Federal Inspector, Office of Federal Inspector for the Alaska Natural Gas Transportation System, until first anniversary of date of initial operation of Alaska Natural Gas Transportation System, see Reorg. Plan No. 1 of 1979, eff. July 1, 1979, §§ 102(a), 203(a), 44 F.R. 33663, 33666, 93 Stat. 1373, 1376, set out in the Appendix to Title 5, Government Organization and Employees. Office of Federal Inspector for the Alaska Natural Gas Transportation System abolished and functions and authority vested in Inspector transferred to Secretary of Energy by section 3012(b) of Pub. L. 102-486, set out as an Abolition of Office of Federal Inspector note under section 719e of Title 15, Commerce and Trade.

Section Referred to in Other Sections

This section is referred to in sections 5919, 6921, 6939e, 6991, 9601, 9614 of this title; title 10 section 2708; title 25 section 3902; title 26 section 4662; title 33 section 2601; title 46 App. section 883; title 49 section 5702.

§ 6904. Governmental cooperation

(a) Interstate cooperation

The provisions of this chapter to be carried out by States may be carried out by interstate agencies and provisions applicable to States

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weapon, a weapon prototype, or a weapon test device.

(e) The term "byproduct material" means (1) any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material, and (2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.

(f) The term "Commission" means the Atomic Energy Commission.

(g) The term "common defense and security" means the common defense and security of the United States.

(h) The term "defense information" means any information in any category determined by any Government agency authorized to classify information, as being information respecting, relating to, or affecting the national defense.

(i) The term "design" means (1) specifications, plans, drawings, blueprints, and other items of like nature; (2) the information contained therein; or (3) the research and development data pertinent to the information contained therein.

(j) The term "extraordinary nuclear occurrence" means any event causing a discharge or dispersal of source, special nuclear, or byproduct material from its intended place of confinement in amounts offsite, or causing radiation levels offsite, which the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, determines to be substantial, and which the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, determines has resulted or will probably result in substantial damages to persons offsite or property offsite. Any determination by the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, that such an event has, or has not, occurred shall be final and conclusive, and no other official or any court shall have power or jurisdiction to review any such determination. The Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, shall establish criteria in writing setting forth the basis upon which such determination shall be made. As used in this subsection, "offsite" means away from "the location" or "the contract location" as defined in the applicable Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, indemnity agreement, entered into pursuant to section 2210 of this title.

(k) The term "financial protection" means the ability to respond in damages for public liability and to meet the costs of investigating and defending claims and settling suits for such damages.

(l) The term "Government agency" means any executive department, commission, independent establishment, corporation, wholly or partly owned by the United States of America which is an instrumentality of the United States, or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the Government.

(m) The term "indemnitor" means (1) any insurer with respect to his obligations under a policy of insurance furnished as proof of financial protection; (2) any licensee, contractor or other person who is obligated under any other form of financial protection, with respect to such obligations; and (3) the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, with respect to any obligation undertaken by it in indemnity agreement entered into pursuant to section 2210 of this title.

(n) The term "international arrangement" means any international agreement hereafter approved by the Congress or any treaty during the time such agreement or treaty is in full force and effect, but does not include any agreement for cooperation.

(o) The term "Energy Committees" means the Committee on Energy and Natural Resources of the Senate and the Committee on Energy and Commerce of the House of Representatives.

(p) The term "licensed activity" means an activity licensed pursuant to this chapter and covered by the provisions of section 2210(a) of this title.

(q) The term "nuclear incident" means any occurrence, including an extraordinary nuclear occurrence, within the United States causing, within or outside the United States, bodily injury, sickness, disease, or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of source, special nuclear, or byproduct material: *Provided, however,* That as the term is used in section 2210(*l*) of this title, it shall include any such occurrence outside the United States: *And provided further,* That as the term is used in section 2210(d) of this title, it shall include any such occurrence outside the United States if such occurrence involves source, special nuclear, or byproduct material owned by, and used by or under contract with, the United States: *And provided further,* That as the term is used in section 2210(c) of this title, it shall include any such occurrence outside both the United States and any other nation if such occurrence arises out of or results from the radioactive, toxic, explosive, or other hazardous properties of source, special nuclear, or byproduct material licensed pursuant to subchapters V, VI, VII, and IX of this division, which is used in connection with the operation of a licensed stationary production or utilization facility or which moves outside the territorial limits of the United States in transit from one person licensed by the Nuclear Regulatory Commission to another person licensed by the Nuclear Regulatory Commission.

(r) The term "operator" means any individual who manipulates the controls of a utilization or production facility.

(s) The term "person" means (1) any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, Government agency other than the Commission, any State or any political subdivision of, or any political entity within a State, any foreign government or nation or any political subdivision of any such government or nation, or other entity; and (2) any legal succes-

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1964—Subsec. (b). Pub. L. 88-489, § 1, struck out subsec. (b) which found that use of United States property by others must be regulated in national interest and in order to provide for common defense and security and to protect health and safety of public.

Subsec. (h). Pub. L. 88-489, § 2, struck out subsec. (h) which found it essential to common defense and security that title to all special nuclear material be in United States while such special nuclear material is within United States.

1957—Subsec. (i). Pub. L. 85-256 added subsec. (i).

TRANSFER OF FUNCTIONS

Atomic Energy Commission abolished and functions transferred by sections 5814 and 5841 of this title. See also Transfer of Functions notes set out under those sections.

CONTROL AND REGULATION POWERS OF UNITED STATES AND OF ATOMIC ENERGY COMMISSION UNAFFECTED BY PRIVATE OWNERSHIP OF SPECIAL NUCLEAR MATERIALS

Section 20 of Pub. L. 88-489 provided that: "Nothing in this Act [amending this section and sections 2013, 2072 to 2078, 2135, 2153, 2201, 2233 and 2234 of this title, repealing section 2072 of this title, and enacting provisions set out as notes under this section and section 2072 of this title] shall be deemed to diminish existing authority of the United States, or of the Atomic Energy Commission under the Atomic Energy Act of 1954, as amended [this chapter], to regulate source, byproduct, and special nuclear material and production and utilization facilities, or to control such materials and facilities exported from the United States by imposition of governmental guarantees and security safeguards with respect thereto, in order to assure the common defense and security and to protect the health and safety of the public, or to reduce the responsibility of the Atomic Energy Commission to achieve such objectives."

SECTION REFERRED TO IN OTHER SECTIONS

This section is referred to in section 2210 of this title.

§ 2013. Purpose of chapter

It is the purpose of this chapter to effectuate the policies set forth above by providing for—

(a) a program of conducting, assisting, and fostering research and development in order to encourage maximum scientific and industrial progress;

(b) a program for the dissemination of unclassified scientific and technical information and for the control, dissemination, and declassification of Restricted Data, subject to appropriate safeguards, so as to encourage scientific and industrial progress;

(c) a program for Government control of the possession, use, and production of atomic energy and special nuclear material, whether owned by the Government or others, so directed as to make the maximum contribution to the common defense and security and the national welfare, and to provide continued assurance of the Government's ability to enter into and enforce agreements with nations or groups of nations for the control of special nuclear materials and atomic weapons;

(d) a program to encourage widespread participation in the development and utilization of atomic energy for peaceful purposes to the maximum extent consistent with the common defense and security and with the health and safety of the public;

(e) a program of international cooperation to promote the common defense and security and to make available to cooperating nations the benefits of peaceful applications of atomic energy as widely as expanding technology and considerations of the common defense and security will permit; and

(f) a program of administration which will be consistent with the foregoing policies and programs, with international arrangements, and with agreements for cooperation, which will enable the Congress to be currently informed so as to take further legislative action as may be appropriate.

(Aug. 1, 1946, ch. 724, title I, § 3, as added Aug. 30, 1954, ch. 1073, § 1, 68 Stat. 922; amended Aug. 28, 1964, Pub. L. 88-489, § 3, 78 Stat. 602; renumbered title I, Oct. 24, 1992, Pub. L. 102-486, title IX, § 902(a)(8), 106 Stat. 2944.)

PRIOR PROVISIONS

Provisions similar to those comprising this section were contained in section 1 of act Aug. 1, 1946, ch. 724, 60 Stat. 755, which was classified to section 1801 of this title, prior to the general amendment and renumbering of act Aug. 1, 1946, by act Aug. 30, 1954.

AMENDMENTS

1964—Subsec. (c). Pub. L. 88-489 inserted "whether owned by the Government or others" and "and to provide continued assurance of the Government's ability to enter into and enforce agreements with nations or groups of nations for the control of special nuclear materials and atomic weapons".

TRANSFER OF FUNCTIONS

Atomic Energy Commission abolished and functions transferred by sections 5814 and 5841 of this title. See also Transfer of Functions notes set out under those sections.

§ 2014. Definitions

The intent of Congress in the definitions as given in this section should be construed from the words or phrases used in the definitions. As used in this chapter:

(a) The term "agency of the United States" means the executive branch of the United States, or any Government agency, or the legislative branch of the United States, or any agency, committee, commission, office, or other establishment in the legislative branch, or the judicial branch of the United States, or any office, agency, committee, commission, or other establishment in the judicial branch.

(b) The term "agreement for cooperation" means any agreement with another nation or regional defense organization authorized or permitted by sections 2074, 2077, 2094, 2112, 2121(c), 2133, 2134, or 2164 of this title, and made pursuant to section 2153 of this title.

(c) The term "atomic energy" means all forms of energy released in the course of nuclear fission or nuclear transformation.

(d) The term "atomic weapon" means any device utilizing atomic energy, exclusive of the means for transporting or propelling the device (where such means is a separable and divisible part of the device), the principal purpose of which is for use as, or for development of, a

may prescribe to protect the public health and safety.

(ff) The term "nuclear waste activities", as used in section 2210 of this title, means activities subject to an agreement of indemnification under subsection (d) of such section, that the Secretary of Energy is authorized to undertake, under this chapter or any other law, involving the storage, handling, transportation, treatment, or disposal of, or research and development on, spent nuclear fuel, high-level radioactive waste, or transuranic waste, including (but not limited to) activities authorized to be carried out under the Waste Isolation Pilot Project under section 213 of Public Law 96-164 (93 Stat. 1265).

(gg) The term "precautionary evacuation" means an evacuation of the public within a specified area near a nuclear facility, or the transportation route in the case of an accident involving transportation of source material, special nuclear material, byproduct material, high-level radioactive waste, spent nuclear fuel, or transuranic waste to or from a production or utilization facility, if the evacuation is—

(1) the result of any event that is not classified as a nuclear incident but that poses imminent danger of bodily injury or property damage from the radiological properties of source material, special nuclear material, byproduct material, high-level radioactive waste, spent nuclear fuel, or transuranic waste, and causes an evacuation; and

(2) initiated by an official of a State or a political subdivision of a State, who is authorized by State law to initiate such an evacuation and who reasonably determined that such an evacuation was necessary to protect the public health and safety.

(hh) The term "public liability action", as used in section 2210 of this title, means any suit asserting public liability. A public liability action shall be deemed to be an action arising under section 2210 of this title, and the substantive rules for decision in such action shall be derived from the law of the State in which the nuclear incident involved occurs, unless such law is inconsistent with the provisions of such section.

(jj) [1] LEGAL COSTS.—As used in section 2210 of this title, the term "legal costs" means the costs incurred by a plaintiff or a defendant in initiating, prosecuting, investigating, settling, or defending claims or suits for damage arising under such section.

(Aug. 1, 1946, ch. 724, title I, § 11, as added Aug. 30, 1954, ch. 1073, § 1, 68 Stat. 922; amended Aug. 6, 1956, ch. 1015, § 1, 70 Stat. 1069; Sept. 2, 1957, Pub. L. 85-256, § 3, 71 Stat. 576; Aug. 8, 1958, Pub. L. 85-602, § 1, 72 Stat. 525; Sept. 6, 1961, Pub. L. 87-206, §§ 2, 3, 75 Stat. 476; Aug. 29, 1962, Pub. L. 87-615, §§ 4, 5, 76 Stat. 410; Oct. 13, 1966, Pub. L. 89-645, § 1(a), 80 Stat. 891; Dec. 31, 1975, Pub. L. 94-197, § 1, 89 Stat. 1111; Nov. 8, 1978, Pub. L. 95-604, title II, § 201, 92 Stat. 3033; Aug. 20, 1988, Pub. L. 100-408, §§ 4(b)-5(b), 11(b), (d)(2), 16(a)(1), (b)(1), (2), (d)(1)-(3), 102 Stat. 1069, 1070, 1076, 1078-1080; Nov. 15, 1990, Pub. L. 101-575, § 5(a), 104 Stat. 2835; renumbered title I and amended Oct. 24, 1992, Pub. L. 102-486, title IX, § 902(a)(8), title XI, § 1102, 106 Stat. 2944, 2955; Nov. 2, 1994, Pub. L. 103-437, § 15(f)(1), 108 Stat. 4592.)

[1] So in original. No subsec. (ii) has been enacted.

REFERENCES IN TEXT

For definition of Canal Zone, referred to in subsec. (bb), see section 3602(b) of Title 22, Foreign Relations and Intercourse.

Section 213 of Public Law 96-164, referred to in subsec. (ff), is Pub. L. 96-164, title II, § 213, Dec. 29, 1979, 93 Stat. 1265, which is not classified to the Code.

PRIOR PROVISIONS

Provisions similar to those comprising this section were contained in section 18 of act Aug. 1, 1946, ch. 724, 60 Stat. 774, which was classified to section 1818 of this title, prior to the general amendment and renumbering of act Aug. 1, 1946, by act Aug. 30, 1954.

AMENDMENTS

1994—Subsec. (o). Pub. L. 103-437 substituted "'Energy Committees' means the Committee on Energy and Natural Resources of the Senate and the Committee on Energy and Commerce of the House of Representatives" for "'Joint Committee' means the Joint Committee on Atomic Energy".

1992—Subsec. (v). Pub. L. 102-486 amended last sentence generally. Prior to amendment, last sentence read as follows: "Except with respect to the export of a uranium enrichment production facility, such term as used in subchapters IX and XV of this division shall not include any equipment or device (or important component part especially designed for such equipment or device) capable of separating the isotopes of uranium or enriching uranium in the isotope 235."

1990—Subsec. (v). Pub. L. 101-575 inserted at end "Except with respect to the export of a uranium enrichment production facility, such term as used in subchapters IX and XV of this chapter shall not include any equipment or device (or important component part especially designed for such equipment or device) capable of separating the isotopes of uranium or enriching uranium in the isotope 235."

1988—Subsecs. (j), (m). Pub. L. 100-408, § 16(b)(1), substituted "Nuclear Regulatory Commission or the Secretary of Energy, as appropriate," for "Commission" wherever appearing.

Subsec. (q). Pub. L. 100-408, § 16(d)(1), substituted "section" for "subsection" in three places, which for purposes of codification was translated as "section", thus requiring no change in text.

Pub. L. 100-408, § 16(a)(1), substituted "Nuclear Regulatory Commission" for "Commission" wherever appearing.

Subsec. (t). Pub. L. 100-408, § 16(d)(2), substituted "section" for "subsection" in two places, which for purposes of codification was translated as "section", thus requiring no change in text.

Pub. L. 100-408, § 16(b)(2), substituted "Secretary of Energy" for "Commission" in cl. (2).

Subsec. (w). Pub. L. 100-408, § 16(d)(3), substituted "subsections (a), (c), and (k) of section 2210 of this title" for "section 2210(a), (c), and (k) of this title".

Pub. L. 100-408, § 5(a), inserted "or precautionary evacuation (including all reasonable additional costs incurred by a State, or a political subdivision of a State, in the course of responding to a nuclear incident or a precautionary evacuation)" after first reference to "nuclear incident".

Subsecs. (dd) to (ff). Pub. L. 100-408, § 4(b), added subsecs. (dd) to (ff).

Subsec. (gg). Pub. L. 100-408, § 5(b), added subsec. (gg).

Subsec. (hh). Pub. L. 100-408, § 11(b), added subsec. (hh).

sor, representative, agent, or agency of the foregoing.

(t) The term "person indemnified" means (1) with respect to a nuclear incident occurring within the United States or outside the United States as the term is used in section 2210(c) of this title, and with respect to any nuclear incident in connection with the design, development, construction, operation, repair, maintenance, or use of the nuclear ship Savannah, the person with whom an indemnity agreement is executed or who is required to maintain financial protection, and any other person who may be liable for public liability or (2) with respect to any other nuclear incident occurring outside the United States, the person with whom an indemnity agreement is executed and any other person who may be liable for public liability by reason of his activities under any contract with the Secretary of Energy or any project to which indemnification under the provisions of section 2210(d) of this title has been extended or under any subcontract, purchase order, or other agreement, of any tier, under any such contract or project.

(u) The term "produce", when used in relation to special nuclear material, means (1) to manufacture, make, produce, or refine special nuclear material; (2) to separate special nuclear material from other substances in which such material may be contained; or (3) to make or to produce new special nuclear material.

(v) The term "production facility" means (1) any equipment or device determined by rule of the Commission to be capable of the production of special nuclear material in such quantity as to be of significance to the common defense and security, or in such manner as to affect the health and safety of the public; or (2) any important component part especially designed for such equipment or device as determined by the Commission. Except with respect to the export of a uranium enrichment production facility or the construction and operation of a uranium enrichment production facility using Atomic Vapor Laser Isotope Separation technology, such term as used in subchapters IX and XV of this division shall not include any equipment or device (or important component part especially designed for such equipment or device) capable of separating the isotopes of uranium or enriching uranium in the isotope 235.

(w) The term "public liability" means any legal liability arising out of or resulting from a nuclear incident or precautionary evacuation (including all reasonable additional costs incurred by a State, or a political subdivision of a State, in the course of responding to a nuclear incident or a precautionary evacuation), except: (i) claims under State or Federal workmen's compensation acts of employees of persons indemnified who are employed at the site of and in connection with the activity where the nuclear incident occurs; (ii) claims arising out of an act of war; and (iii) whenever used in subsections (a), (c), and (k) of section 2210 of this title, claims for loss of, or damage to, or loss of use of property which is located at the site of and used in connection with the licensed activity where the nuclear incident occurs. "Public liability" also includes damage to property of persons indemnified: *Provided*, That such property is covered under the terms of the financial protection required, except property which is located at the site of and used in connection with the activity where the nuclear incident occurs.

(x) The term "research and development" means (1) theoretical analysis, exploration, or experimentation; or (2) the extension of investigative findings and theories of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, devices, equipment, materials, and processes.

(y) The term "Restricted Data" means all data concerning (1) design, manufacture, or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to section 2162 of this title.

(z) The term "source material" means (1) uranium, thorium, or any other material which is determined by the Commission pursuant to the provisions of section 2091 of this title to be source material; or (2) ores containing one or more of the foregoing materials, in such concentration as the Commission may by regulation determine from time to time.

(aa) The term "special nuclear material" means (1) plutonium, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 2071 of this title, determines to be special nuclear material, but does not include source material; or (2) any material artificially enriched by any of the foregoing, but does not include source material.

(bb) The term "United States" when used in a geographical sense includes all territories and possessions of the United States, the Canal Zone and Puerto Rico.

(cc) The term "utilization facility" means (1) any equipment or device, except an atomic weapon, determined by rule of the Commission to be capable of making use of special nuclear material in such quantity as to be of significance to the common defense and security, or in such manner as to affect the health and safety of the public, or peculiarly adapted for making use of atomic energy in such quantity as to be of significance to the common defense and security, or in such manner as to affect the health and safety of the public; or (2) any important component part especially designed for such equipment or device as determined by the Commission.

(dd) The terms "high-level radioactive waste" and "spent nuclear fuel" have the meanings given such terms in section 10101 of this title.

(ee) The term "transuranic waste" means material contaminated with elements that have an atomic number greater than 92, including neptunium, plutonium, americium, and curium, and that are in concentrations greater than 10 nanocuries per gram, or in such other concentrations as the Nuclear Regulatory Commission

Attachment J

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED 2/10/00

SERVED 2/10/00

COMMISSIONERS:

Richard A. Meserve, Chairman
Greta Joy Dicus
Nils J. Diaz
Edward McGaffigan, Jr.
Jeffrey S. Merrifield

In the Matter of INTERNATIONAL URANIUM (USA) CORPORATION (Request for Materials License Amendment)	Docket No. 40-8681-MLA-4

CLI-00-**01**

MEMORANDUM AND ORDER

I. Introduction

In this decision we review a Presiding Officer's Initial Decision, LBP-99-5, 49 NRC 107 (1999), which upheld a license amendment issued to the International Uranium (USA) Corporation ("IUSA"). The license amendment authorized IUSA to receive, process, and dispose of particular alternate feed material from Tonawanda, New York. The state of Utah challenges the license amendment and now on appeal seeks reversal of the Presiding Officer's decision. Envirocare of Utah, Inc., has filed an amicus curiae brief supporting Utah's challenge of the Presiding Officer's decision. The NRC staff and IUSA support the Presiding Officer's decision. We affirm the decision for the reasons we give below.

II. Background

IUSA owns and operates a uranium mill located at White Mesa, near Blanding, Utah. On May 8, 1998, IUSA submitted a request for a license amendment to allow it to receive and process approximately 25,000 dry tons of uranium-bearing material from the Ashland 2 Formerly Utilized Sites Remedial Action Program (FUSRAP) site, currently managed by the Army Corps of Engineers and located near Tonawanda, New York.[1] The NRC granted the IUSA license amendment on June 23, 1998. Utah timely petitioned for leave to intervene in the license amendment proceeding. On September 1, 1998, the Presiding Officer admitted Utah as a party to the proceeding. See International Uranium (USA) Corporation (Receipt of Material from Tonawanda, New York), LBP-98-21, 48 NRC 137 (1998).

At issue in this proceeding is the Atomic Energy Act's definition of 11e.(2) material, defined by the statute as "the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content." 42 U.S.C. § 2014e (emphasis added). Utah interprets this to mean that the primary purpose for acquiring the ore must be an interest in processing the material to recover the uranium. Emphasizing that IUSA is being paid over four million dollars to receive the Ashland 2 material from the FUSRAP site, Utah argues that IUSA's interest in obtaining the material is "primarily for payment of a disposal fee" and not for recovering any uranium the material might contain. Utah's Appeal Brief (May 24, 1999) at 11.

Utah explains that the fee IUSA will receive for this transaction far exceeds the monetary value of the uranium which might be extracted from the material. Utah accordingly suggests that the "primary" reason IUSA is processing the material is so that it can be reclassified as 11e.(2) material and then disposed of at the IUSA mill site. See id. at 10.

In short, Utah argues that the NRC staff improperly granted this license amendment because IUSA is not processing the Ashland 2 material "primarily" to recover its relatively minimal uranium content, but rather to obtain the generous handling and disposal fee. Utah emphasizes that IUSA's license amendment application failed to adequately substantiate that the material was to be "processed primarily" for its uranium content. Utah insists upon "some objective documentation" to show that recovery of the uranium, not payment for disposal, was IUSA's primary interest behind the license amendment. See Utah's Reply to NRC Staff's and IUSA's Briefs (June 28, 1999)("Utah's Reply Brief") at 10. Given the "wide disparity" between the fee IUSA will receive for taking and processing the material and the probable market value of the uranium that can be recovered, Utah claims that the "only reasonable conclusion" to be drawn is that the "primary purpose of applying for the license amendment was to receive a four million dollar disposal fee." Id. at 9-11.

In interpreting what is meant by § 11e.(2)'s requirement that ore be "processed primarily for its source material content," Utah relies heavily upon language in the NRC's "Final Revised Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores," 60 Fed. Reg. 49,296 (Sept. 22, 1995)("Alternate Feed Guidance"). The Alternate Feed Guidance asks licensees to "certify" that the feed material will be "processed primarily for the recovery of uranium and for no other purpose." Id. at 49,297. The Guidance goes on to enumerate three possible ways a licensee can "justify" this certification that feed material is to be processed for source material. The three possible factors a licensee can cite are "financial considerations, high uranium feed content of the feed material, or other grounds." Id. Throughout this proceeding, the parties sharply have disputed the meaning of these and other statements in the Alternate Feed Guidance.

Utah, for instance, argues that the Guidance included a "Certification and Justification" test expressly to prohibit licensees from "using a uranium mill to process material for the primary purpose of ... [reclassifying] the material to allow it to be disposed of in the mill tailings impoundment." See Utah's Appeal Brief at 10,12. Utah claims that processing material merely for the sake of reclassifying it as 11e.(2) material is "sham processing," and that the wastes or mill tailings generated from such "sham processing" do not meet the definition of 11e.(2) byproduct material. See id. at 10-11. Utah concludes that IUSA "failed to justify and document under the Alternate Feed Guidance any satisfactory or plausible grounds to show that [IUSA] was not engaged in sham processing." Id. at 11.

In LBP-99-5, the Presiding Officer rejected Utah's arguments. "[O]re is processed primarily for its source material content," stated the Presiding Officer, "when the extraction of source material is the principal reason for *processing* the ore," regardless of any other reason behind the licensee's interest in acquiring the material or seeking the overall transaction. See 49 NRC at 109.

On the other hand, the Presiding Officer went on to explain, "[i]f ... the material were processed primarily to remove some other substances (vanadium, titanium, coal, etc.) and the extraction of uranium was incidental, then the processing would not fall within the statutory test and it would not

be byproduct material within the meaning of the Atomic Energy Act. That is, the adverb 'primarily,' applies to what is removed from the material by the process and not to the motivation for undertaking the process." Id. (emphasis added). In the Presiding Officer's view, "the only 'sham' that stops material from being byproduct material is if it is not actually milled. If it is milled, then it is not a sham." Id. at 111 n.6.

The Presiding Officer found this interpretation of § 11e.(2) consistent with the language and legislative history of the Uranium Mill Tailings Radiation Control Act of 1978, as amended (UMTRCA). He went on to conclude that the staff appropriately granted the license amendment because IUSA "is milling ore" to extract uranium and therefore is "not involved in a sham." See id. at 113. The Presiding Officer also found that Utah had misunderstood the NRC Alternate Feed Guidance. He rejected Utah's claim that the Guidance was intended to prevent material from being categorized as 11e.(2) byproduct material if the licensee's primary economic motive was to receive a fee for waste disposal instead of to recover the uranium. Id. at 112. "The Alternate Feed Guidance," the Presiding Officer stated, "is not supportive of the position, taken by the State of Utah, that material is to be considered byproduct only if the primary economic motivation is to remove uranium rather than to dispose of waste." Id. Under LBP-99-5, then, the licensee's underlying motive or purpose for acquiring the material in the first place is irrelevant. What matters is that the material actually is processed through the mill to recover source material.

Both the NRC staff and IUSA endorse the Presiding Officer's conclusions. The staff explains that "the Presiding Officer properly applied the [alternate feed] guidance by focusing on whether the processing was primarily to extract uranium," regardless of any economic motivations involved. See NRC Staff Opposition to Utah Appeal of LBP-99-5 ("Staff Brief")(June 14, 1999) at 13 (emphasis added). The staff also stresses that "[n]either a high uranium content nor economic profitability is 'required' under the guidance," which provides three separate and alternative reasons a licensee can describe to support a proposed license amendment, including any number of reasons which might fall within the category of "other grounds." See id. Indeed, the staff argues, the definition of § 11e.(2) byproduct material should be broad enough to encompass those fuel cycle activities involving the processing of even low grade -- with relatively low concentration of uranium -- feedstock. Id. at 15. "Utah's attempt to require an economic motive test and to require detailed financial review should be rejected," the staff urges. Id.

Focusing upon UMTRCA's legislative history, IUSA similarly concludes that at issue is simply whether the tailings and wastes were "produced as part of the nuclear fuel cycle." See IUSA's Reply to Utah's Appeal Brief and Envirocare's Amicus Curiae Brief ("IUSA Brief")(June 14, 1999) at 9-10. According to IUSA, those tailings and waste from feeds processed to recover uranium outside of the nuclear fuel cycle, as in a secondary or side-stream process at a phosphate recovery operation, would not be 11e.(2) material because the actual processing was not [intended] primarily for the source material content. Id. But where there is a licensed uranium mill involved, "the *only* question to be answered," argues IUSA, "is whether it is reasonable to expect that the ore will, *in fact*, be processed for the extraction of uranium." Id. at 15.

While not adopting the Presiding Officer's reasoning in its entirety, the Commission affirms LBP-99-5, for the reasons given below.

III. Analysis

To clear away a threshold matter, we must briefly consider the NRC staff's claim that the Ashland 2 material already was § 11e.(2) byproduct material, even before it was sent to IUSA and even before it was processed. See Staff Brief at 8 n.11; 14 n.18; 15 n.19. The staff's theory derives from the Department of Energy's certification that the Ashland 2 material was the residue of a Manhattan Project uranium extraction project, and therefore constituted "tailings or waste produced by the extraction ... of uranium ... from ... ore processed primarily for its source material content" within the meaning of section 11e.(2). We find it unnecessary to reach the staff argument. Historically, the NRC

has maintained that it lacks regulatory authority over uranium-bearing material, like the Ashland 2 material, generated at facilities not licensed on or after 1978 (when UMTRCA was passed). See United States Army Corps of Engineers, DD-99-7, 49 NRC 299, 307-08 (1999). Nothing in this opinion addresses the pre-1978 question or should be understood to do so. Instead, our opinion rests solely on section 11e.(2)'s "processed primarily for its source material content" clause.

On appeal, Utah finds the Presiding Officer's "first error" to have been that of having "resort[ed] to interpretation of the AEA and the legislative history of UMTRCA in searching for the meaning of 'primarily processed for.'" See Utah Appeal Brief at 11-12. Instead, Utah argues, the Presiding Officer should have focused only upon the NRC's Alternate Feed Guidance to discern how the § 11e.(2) definition is to be applied and met. Id. at 12. The Commission, however, agrees with the Presiding Officer that the § 11e.(2) definition, with its requirement that material be "primarily processed for its source material content," can only be properly understood within the context of UMTRCA and its legislative history.

Based on an in-depth review of UMTRCA and its legislative history, and of the Alternate Feed Guidance and its background documents, the Commission reaches several conclusions. To begin with, the Guidance does appear to contemplate an NRC staff inquiry into a licensee's motives for a license amendment, just as Utah suggests. The Guidance, for instance, expresses a "concern that wastes that would have to be disposed of as radioactive or mixed waste would be proposed for processing at a uranium mill primarily to be able to dispose of it in the tailings pile as 11e.(2) byproduct material." 60 Fed. Reg. 49,296, 49,297 (Sept. 22, 1995). The Guidance thus outlines possible "justifications" that a licensee may describe in support of the license application, and these are intended to assist the staff "[i]n determining whether the proposed processing is primarily for the source material content or for the disposal of waste." Id. Indeed, the requirement of a licensee "justification" apparently stemmed from a 1993 Presiding Officer decision which questioned, in another proceeding, whether a simple licensee "certification, without more, would adequately protect against ulterior motives to dispose of waste." See UMETCO Minerals Corp., LBP-93-7, 37 NRC 267, 283 (1993)(emphasis added).

Such statements do not support the NRC staff's current view that under the Guidance all that matters is that processing for uranium was intended, regardless of underlying motive. On the contrary, the statements in both the proposed and final Guidance take as a given that processing for uranium content will take place, but also indicate that such processing should not be employed simply as a device to reclassify material to enable it to be disposed of -- as 11e.(2) byproduct material -- at a uranium mill site.[2] As Utah has maintained, therefore, the Alternate Feed Guidance certainly can be understood -- and is perhaps best understood -- as reflecting an intent to prevent material from being categorized as 11e.(2) byproduct material when the licensee's overriding economic motive is to receive a fee for waste disposal.

Yet, although the drafters of the Guidance apparently intended to distinguish between those license amendment requests where the licensee's overriding interest is obtaining uranium and those where payment for disposal is driving the transaction, the NRC staff apparently has not consistently utilized the Guidance in this way. While the language of the Guidance may suggest that a licensee's motivations are to be scrutinized, parsed, and weighed, the NRC staff typically has not relied upon such probing reviews of licensee motives. It has not been the staff's practice, for example, to require licensees essentially to "prove" quantitatively or otherwise that the value of the uranium to be recovered from a particular licensing action will outweigh other economic reasons for the transaction. See, e.g., UMETCO, 37 NRC at 274, 281-82; Staff Brief at 15-16. Since the Guidance was first issued, it seems, there has been little connection between what the Guidance seemingly proposes and what the staff in reality has required.

This fact has prompted the Commission on this appeal to take an in-depth look at the Guidance and its policy ramifications. We find that the apparent intent in the Guidance to have the staff scrutinize the motives behind the license amendment transaction is neither compelled by the statutory language

or history of UMTRCA nor reflects sound policy. Our review of UMTRCA and its legislative history confirms the Presiding Officer's conclusion that the requirement that material be "processed primarily for its source material content" most logically refers to the actual act of processing for uranium or thorium within the course of the nuclear fuel cycle, and does not bear upon any other underlying or "hidden" issues that might be driving the overall transaction.

As we describe in further detail below, the purposes behind the wording of § 11e.(2)'s definition served: (1) to expand the types of materials that properly could be classified as byproduct material; (2) to make clear that even feedstock containing less than 0.05% source material could qualify as byproduct material; and (3) to assure that the NRC's jurisdiction did not cross over into activities unrelated to the nuclear fuel cycle. The IUSA license amendment is consistent with these statutory intentions, regardless of whether IUSA's bigger interest was payment for taking the material or payment for the recovered uranium. Indeed, even accepting Utah's claim that the four million dollar payment IUSA contracted to receive for processing and disposing of the Ashland 2 FUSRAP site material was the primary motivator for this transaction, the tailings generated from the processing can still properly be classified as § 11e.(2) byproduct material.

UMTRCA's Purposes and History

It may be helpful to outline a little of UMTRCA's legislative history and, in particular, how the § 11e.(2) definition came about. UMTRCA had two general goals: (1) providing a remedial- action program to stabilize and control mill tailings at various identified inactive mill sites, and (2) assuring the adequate regulation of mill tailings at active mill sites, both during processing and after operations ceased. As then Chairman Hendrie of the NRC explained to Congress, the agency at the time did not have direct regulatory control over uranium mill tailings. The tailings themselves were not source material and did not fall into any other category of NRC licensable material. The NRC exercised some control over tailings, but only indirectly as part of the Commission's licensing of ongoing milling operations. Once operations ceased, however, the NRC had no further jurisdiction over tailings. This resulted in dozens of abandoned or "orphaned" mill tailings piles.

To prevent future abandoned and unregulated tailings piles, Congress enacted the 11e.(2) definition, which expressly declared mill tailings to be a form of byproduct material. As Chairman Hendrie explained, tailings are "fairly regarded as waste materials from the milling operation," but the proposed definition would classify them as byproduct material and thus make them licensable under the AEA. Under the new § 11e.(2) definition, Chairman Hendrie emphasized, tailings generated during uranium milling operations would "formally be byproducts rather than waste." Uranium Mill Tailings Radiation Control Act of 1978, Hearings on H.R. 11698, H.R. 12229, H.R. 12938, H.R. 12535, H.R. 13049, and H.R. 13650, (hereinafter "UMTRCA Hearings I") Subcomm. On Energy & Power, House Comm. On Interstate & Foreign Commerce, 95th Cong. 2nd Sess. at 400 (1978) (statement of Joseph M. Hendrie, Chairman, NRC).

At the time Congress drafted UMTRCA, the Environmental Protection Agency had some authority over uranium mill tailings under the Resource Conservation and Recovery Act of 1976 (RCRA), but EPA had no authority over the milling process which generated the tailings. By defining mill tailings as a byproduct material, the new 11e.(2) definition removed mill tailings from RCRA's coverage since RCRA excludes all source, byproduct, and special nuclear material. This exclusion from RCRA was intended to minimize any "dual regulation" of tailings by both EPA and the NRC. Chairman Hendrie suggested that since the NRC already regulated the site-specific details of uranium milling, it seemed logical for the NRC to regulate the treatment and disposal of tailings "which we permitted to be generated in the first place." Id. at 342-43.

From the legislative history, we can glean a few conclusions about the actual wording of the 11e.(2) definition. As originally proposed, the definition of 11e.(2) byproduct material was directly linked to the Commission's definition of source material. The original definition referred to "the naturally occurring daughters of uranium and thorium found in the tailings or wastes produced by the

extraction or concentration of uranium or thorium from source material as defined in [then] Section 11z.(2)." But Chairman Hendrie was concerned that a definition of byproduct material that was linked to that of source material would exclude ores containing 0.05% or less of uranium or thorium.[3] He proposed that the language be revised to "from any ore processed primarily for its source material content." His discussion with Congressman Dingell went as follows:

> **Mr. Hendrie**: The Commission is informed that there are a few mills currently using feedstock of less than 0.05 percent uranium. As high grade ores become scarcer, there may be a greater incentive in the future to turn to such low grade materials.
>
> Since such operations should be covered by any regulatory regime over mill tailings, the Commission would suggest that the definition of byproduct material in H.R. 13382 be revised to include tailings produced by extraction of uranium or thorium from any ore processed primarily for its source material content.
>
> **Mr. Dingell**: I am curious why you include in that the word "processed" primarily for source material content. There are other ores that are being processed that do contain thorium and uranium in amounts and I assume equal in value to those you are discussing here. Is there any reason why we ought not to give you the same authority with regard to those ores?
>
> **Mr. Hendrie**: The intent of the language is to keep NRC's regulatory authority primarily in the field of the nuclear fuel cycle. Not to extend this out into such things as phosphate mining and perhaps even limestone mining which are operations that do disturb the radium-bearing crust of the Earth and produce some exposures but those other activities are not connected with the nuclear fuel cycle.

UMTRCA Hearings I at 343-44.

There were, therefore, two principal intentions behind Chairman Hendrie's proposed language, which Congress accepted. First, the 11e.(2) definition was intended to reach even "low grade" feedstock with less than a 0.05% concentration of uranium. Second, the definition was intended to make sure that the NRC's jurisdiction did not expand into areas not traditionally part of the NRC's control over the "nuclear fuel cycle." The definition therefore "focuses upon uranium milling wastes" and not, for example, upon the wastes from phosphate ore processing which are also contaminated with small quantities of radioactive elements. Id. at 354 ("Section by Section Analysis of H.R. 13382 As Revised by NRC Recommended Language Changes"). Similarly, 11e.(2) material was not to encompass uranium mining wastes because, as Chairman Hendrie explained, "[w]e don't regulate mines. The mining is regulated by the Department of Labor under other regulations so our definition was drawn to maintain that and to keep us out of the mine-regulating business." Id. at 401.

We find, then, that the § 11e.(2) definition focused upon whether the process generating the wastes was uranium milling within the course of the nuclear fuel cycle. As Chairman Hendrie made clear, the concentration of the uranium or thorium in the feedstock was not a determinative factor in whether the resulting tailings should be considered 11e.(2) material. The focus was not on the value of the extracted uranium but on the activity involved.

In short, the § 11e.(2) definition focuses upon the process that generated the radioactive wastes -- the removal of uranium or thorium as part of the nuclear fuel cycle. See Kerr-McGee Chemical Corp. v. NRC, 903 F.2d 1, 7 (D.C. Cir. 1990). But UMTRCA does not require that the market value of the uranium recovered be the licensee's predominant interest, and thus UMTRCA does not require the NRC to assure that no other incentives lie behind the licensee's interest in processing material for uranium. There simply is no reason under UMTRCA why licensees cannot have several motives for a transaction.[4] That IUSA's primary goal here may have been the four million dollar payment for

disposal, instead of potential profit from any recoverable uranium, does not in and of itself prevent the tailings generated from the milling process from falling within the § 11e.(2) definition. Moreover, as we touch upon further below, making such purely economic considerations a determinative part of the staff's review would unnecessarily divert agency resources to issues unrelated to public health and safety.

The Need for Revising the Guidance

In this litigation, Utah and the other parties focused not upon UMTRCA and its legislative history, but upon the NRC's Alternative Feed Guidance. The Commission, however, is not bound by the Guidance. Like NRC NUREGS and Regulatory Guides, NRC Guidance documents are routine agency policy pronouncements that do not carry the binding effect of regulations. See, e.g., Curators of the University of Missouri, CLI-95-1, 41 NRC 71, 149 (1995); International Uranium (USA) Corp. (White Mesa Uranium Mill), LBP-97-12, 46 NRC 1, 2 (1997)(referring specifically to final Alternate Feed Guidance as "non-binding Staff guidance"). Such guidance documents merely constitute NRC staff advice on one or more possible methods licensees may use to meet particular regulatory requirements. See, e.g., The Curators of the University of Missouri, CLI-95-1, 41 NRC 71, 150 & n.121 (1995); Petition for Emergency and Remedial Action, CLI-78-6, 7 NRC 400, 406-07 (1978); Consumers Power Co. (Big Rock Point Nuclear Plant), ALAB-725, 17 NRC 562, 568 n.10 (1983); Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), CLI-74-40, 8 AEC 809, 811 (1974). These guides, however, do not themselves have the force of regulations for they do not impose any additional legal requirements upon licensees. Licensees remain free to use other means to accomplish the same regulatory objectives. See id. "[A]gency interpretations and policies are not 'carved in stone' but rather must be subject to re-evaluations of their wisdom on a continuing basis." Kansas Gas & Elec. Co. (Wolf Creek Generating Station, Unit 1), 49 NRC 441, 460 (1999) (referencing Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 863-64).

Accordingly, it has long been an established principle of administrative law that an agency is free to choose among permissible interpretations of its governing statute, and that at times new interpretations may represent a sharp shift from prior agency views or pronouncements. Chevron, 467 U.S. at 842-43, 862 (1984). This is permissible so long as the agency gives "adequate reasons for changing course." Envirocare of Utah v. NRC, F.3d , No. 98-1426 (D.C. Cir., Oct. 22, 1999), slip op. at 6. Given that: (1) the disputed portions of the Alternate Feed Guidance are not derived directly from UMTRCA or its history; (2) the Guidance apparently has not been consistently applied in the manner proposed by the State of Utah; (3) the precise terms of the Guidance are not entirely clear (c.f., e.g., "other grounds"); and (4) the Commission believes that literal adherence to the apparent intent of the Guidance would lead to unsound policy results, the Commission declines to follow it here and will require the NRC staff to revise it as soon as practicable.[5]

Several policy reasons support departing from the Guidance. First, the NRC's statutory mission is public health and safety. Our regulations establish comprehensive criteria for the possession and disposal of 11e.(2) byproduct material under NRC or Agreement State jurisdiction. See 10 C.F.R. Part 40, Appendix A. The criteria were designed to assure the safe disposal of bulk material whose primary radiological contamination is uranium, thorium, and radium in low concentrations. But whether the concentration of uranium in the feedstock material is .058% or .008% -- the initial high and low estimates, respectively, of the Ashland 2 material based upon samples taken -- has no impact upon the general applicability and adequacy of the agency's health and safety standards for disposal of § 11e.(2) material. Yet, in Utah's view, whether the actual uranium concentration proved to be .058% or .008% could well dictate whether the resulting tailings appropriately could be classified as § 11e.(2) material and regulated by the NRC.

Utah's interpretation thus divides byproduct material into two different regulatory camps based solely upon market-oriented factors, i.e., the expected profit from selling recovered uranium versus any other economically advantageous aspects of the license amendment. Utah emphasizes, for example,

that it "has not objected to several [IUSA] alternate feed license amendment requests where the waste material contained [greater amounts] of uranium." See Utah's Petition for Review of LBP-99-5 (Feb. 26, 1999) at 9 n.10. From a health and safety perspective, though, there is no reason to prohibit IUSA from disposing of tailings material in its disposal cells solely on account of the feedstock having a lower uranium concentration or lower market value. Cf. Kerr-McGee, 903 F.2 at 7-8.

Second, the Guidance, if applied as originally intended, would cast the NRC staff into an inappropriate role, conducting potentially multi-faceted inquiries into the financial attractiveness of transactions. The staff essentially would need to look behind and verify every assertion about the economic factors motivating a proposed processing of material -- an unnecessary and wasteful use of limited agency resources, at a time when the Commission increasingly has moved away from performing economics-oriented reviews that have no direct bearing on safety and are not specifically required by Congress.[6]

In addition, the NRC seeks to regulate efficiently, imposing the least amount of burdens necessary to carry out our public health and safety mission. Yet, as this proceeding itself demonstrates, the Alternate Feed Guidance's unwieldy "Certification and Justification" test lends itself easily to protracted disputes among the NRC staff, intervenors, and the licensee over such issues as how much the licensee will "really" profit from selling recovered uranium, what the licensee's "bigger" motives may be, etc. All this effort and attention imposes burdens on the parties while detracting from our central mission -- radiological safety, i.e., assuring that there are no constituents in the alternate feed material that would prevent the mill from complying with all applicable NRC health and safety regulations.

Nor is it inconceivable that eventual potential changes in the marketplace could impact whether particular material might fall within the § 11e.(2) definition one year but not the next, merely on account of some new market factor. Purely economic factors, in short, should not determine how radioactive material is defined. Whether IUSA was paid a "substantial sum," as Utah emphasizes, a nominal sum, or had to pay a sum to acquire the Ashland 2 material has no bearing on health and safety issues. Therefore, this is not appropriately the Commission's concern and also should have no bearing on whether the resulting tailings meet the statutory definition of byproduct material under § 11e.(2).

While it may be true, as Utah states, that when Congress enacted UMTRCA there was no "thought of using offsite active uranium mills to process and dispose of industrial cleanup waste from FUSRAP sites," Utah's Reply Brief at 5, several Congressmen did express an interest in having private corporations take and reprocess materials as a means to offset the federal government's ultimate disposal costs for cleaning up UMTRCA's designated Title I sites. See, e.g., UMTRCA Hearings on H.R. 13382, H.R. 12938, H.R. 12535, and H.R. 13049 ("UMTRCA Hearings II") Subcomm. On Energy & the Environment, House Comm. On Interior & Insular Affairs (1978) at 82 (statement of Rep. Weaver)(some "companies might be interested in sharing the cost of stabilization of tailings in return for access to minerals remaining in the piles").[7] Then Chairman Hendrie voiced no objection, stating that "[i]f they want to reprocess the piling to make a complete recovery of the resource there, I think that is fine from a conservation standpoint. It also puts them back in the active business of milling." See UMTRCA Hearings II at 82.

Here, the Ashland 2 material has been approved for processing and disposal, and the resulting byproduct material will be disposed of pursuant to the same health and safety standards that apply to any other 11e.(2) material in an NRC-licensed mill: 10 C.F.R. Part 40, Appendix A. Though Utah may be dissatisfied with those standards, an adjudicatory proceeding is not the appropriate forum to contest generic NRC requirements or regulations. See, e.g., Duke Energy Corporation (Oconee Nuclear Station, Units 1, 3, and 3), CLI-99-11, 49 NRC 328, 334 (1999).

We note, additionally, that early in the proceeding Utah expressed concern that the Ashland 2 material, contrary to the NRC staff's findings, possibly contained listed hazardous waste. But while

the accuracy of the license application can appropriately be the subject of an adjudication, notwithstanding staff findings, here subsequent events have rendered Utah's hazardous waste concern moot. Following negotiations with IUSA and, after analyzing investigations and data from the Ashland 2 site, Utah formally withdrew its allegation that the Ashland 2 material may contain listed hazardous waste. See Utah's Appeal Brief at 3 n.2. Instead, although Utah is upset that the staff's allegedly "scanty" review took only "about six weeks," its own review failed to uncover any errors in the staff's conclusion that the material contains no listed hazardous waste. Utah's remaining generalized complaint about how the staff reached its conclusion is not a litigable issue, given that Utah now concurs with the staff's conclusion and no longer alleges the presence of any listed hazardous waste.

Nevertheless, such disputes about the presence of hazardous waste are likely to recur, and the issue is a significant one, implicating three concerns: (1) possible health and safety issues, (2) the potential for an undesirable, complex NRC-EPA "dual regulation" of the same tailings impoundment, and (3) the potential for jeopardizing the ultimate transfer of the tailings pile to the U.S. government, for perpetual custody and maintenance. See generally UMTRCA, Title II, § 202 (Section 83 of the AEA). In view of our decision that the Alternate Feed Guidance requires revision to reflect our decision on the 11e.(2) definition, we will direct the staff to consider whether the Guidance also should be revised to include more definitive and objective requirements or tests to assure that listed hazardous or toxic waste is not present in the proposed feed material. We note, for example, that in a recent license amendment proceeding, the Presiding Officer declared it simply "impossible" for him to "ascertain the basis for the Staff determination that this material is not hazardous." International Uranium (USA) Corp. (White Mesa Uranium Mill), LBP-97-12, 46 NRC 1, 5 (1997). Similarly, in another earlier proceeding, the Presiding Officer found that the "Staff's new guidance for determining whether feed material is a mixed [or hazardous] waste appears confusing," and accordingly suggested there be more "specific protocols ... to determine if alternate feed materials contain hazardous components." UMETCO, 37 NRC at 280-81. The Commission concludes that this issue warrants further staff refinement and standardization.

In conclusion, applying the Commission's statutory interpretation of § 11e.(2) byproduct material, the Commission finds that the IUSA license amendment properly was issued and that the mill tailings at issue do constitute § 11e.(2) byproduct material. From the information in the record, we believe that it was reasonable for the NRC staff to have concluded that: (1) processing would take place, and (2) uranium would be recovered from the ore. Utah itself has acknowledged that "[i]n three different estimates, taken from DOE documents, the average uranium content of the material ranged from a high of 0.058% to a low of 0.008%." See Utah's Appeal Brief at 4; see also Utah's Brief in Opposition to IUSA's License Amendment (Dec. 7, 1998)("Utah's Brief in Opposition") at 8, and Attachment at 7-8. Utah's own expert estimated that up to $617,000 worth of uranium might be recovered from the Ashland 2 material. See Utah's Brief in Opposition at 8, and Attachment at 9. Utah's primary argument all along has been that the monetary value of the recovered uranium would be much lower than the 4 million dollar payment IUSA would receive, not that no source material would be recovered through processing. See, e.g., id., Attachment at 9 (where Utah's expert stressed that the value of the uranium-238 that could be extracted from the Ashland 2 material "represents a fraction (1.6 to 15 percent) of the $4,050,000 that [IUSA] will receive from Material Handling & Disposal Services fees"); Utah's Reply Brief at 11 (the "disposal fee received by [IUSA] ... is almost 60 times the value of the uranium recovery").

Not only was it reasonable to conclude that uranium could be recovered from the Ashland 2 material, but it was also reasonable to conclude that the processing would indeed take place. IUSA had a contractual commitment to do so; its contract with the Army Corps of Engineers required IUSA to process the material prior to disposal. See IUSA Brief at 18, 25. In addition, as the Presiding Officer noted, "IUSA has a history of successfully extracting uranium from alternate feed material and has developed credibility with the NRC ... for fulfilling its proposals to recover uranium from alternate feeds." 49 NRC at 112. This was not an instance, then, where there was no reasonable expectation that the mill operator would in fact process material through the mill to extract recoverable uranium. Moreover, it is also the Commission's understanding that the Ashland 2 material has in fact been

processed in the IUSA mill and that approximately 8,000 pounds of uranium were extracted. While that quantity of uranium was on the low end of IUSA's estimates, it nevertheless represents more than a minute or negligible recovery of uranium.[8]

The Commission concludes, therefore, that the Presiding Officer's interpretation of the § 11e.(2) definition reflects a sensible reading of the UMTRCA statute and legislative history -- one we hereby embrace -- and that the record overall supports the issuance of the license amendment.

III. Conclusion

For the foregoing reasons, LBP-99-5 is affirmed.

IT IS SO ORDERED.

For the Commission

[original signed by]

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 10th day of February, 2000.

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1. IUSA made a similar request to receive, process, and dispose of uranium-bearing material from the nearby Ashland 1 and Seaway Area D FUSRAP sites. That license amendment is the subject of a separate NRC adjudicatory proceeding (Docket No. 40-8681-MLA-5) currently held in abeyance pending the outcome of this appeal.

2. In fact, when the Guidance was first proposed, there was a description of how owners of low-level or mixed waste, facing the high costs of disposal, might find it "very attractive" to "pay a mill operator substantially less to process [the material] for its uranium content and dispose of the resulting 11e.(2) material," rather than to pay for disposal at a low-level or mixed waste facility. See "Uranium Mill Facilities, Request for Public Comments on Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores," 57 Fed. Reg. 20,525, 20,533 (May 13, 1992)("Proposed Guidance"). The Proposed Guidance labeled such transactions "sham disposals," and implied they "would not meet the definition of 11e.(2) byproduct material." Id. at 20,533.

3. "Source material" has been defined by the Commission to exclude ores containing less than 0.05% of uranium or thorium. 10 C.F.R. § 40.4.

4. See also, e.g. Kerr-McGee, 903 F.2d at 7 (where the court suggested that the word "primarily" in the § 11e.(2) definition could be read to mean "substantially," and thus the tailings from the coproduction of source material and rare earths could still be deemed 11e.(2) byproduct material so long as one of the reasons for processing the ore was for extracting source material). The court's reasoning in Kerr-McGee is consistent with the UMTRCA history, which reflects that it has long been the case, for instance, that both vanadium and uranium might be extracted during a processing of material, and indeed that the amount of recoverable vanadium may very likely be much greater than that of the recoverable uranium. See, e.g., UMTRCA Hearings I at 155 (where private company

reprocessing material was extracting 2 ½ pounds of vanadium for every ½ pound of uranium extracted); see also UMTRCA Hearings III at 136 ("We recover ... about 1,000 pounds a day of uranium, about 4,000 pounds of vanadium"). There was never any suggestion in the legislative history that if the amount or value of the vanadium proved higher than that of the uranium, the tailings could not be categorized as 11e.(2) byproduct material.

5. The Commission has promulgated no regulation implementing the Guidance. Thus, the Commission's rejection of the Guidance does not present a situation where the Commission has altered "suddenly and sub silentio settled interpretations of its own regulations." Natural Resources Defense Council, Inc. v. NRC, 695 F.2d 623, 625 (D.C. Cir. 1982). See generally Syncor Int'l Corp. v. Shalala, 127 F.3d 90 (D.C. Cir. 1997); Paralyzed Veterans of America v. D.C. Arena L.P., 117 F.3d 579 (1997), cert. denied, 523 U.S. 1003 (1998); United Technologies Corp. v. EPA, 821 F.2d 714 (D.C. Cir. 1987).

6. See, e.g., Final Rule, Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 61 Fed. Reg. 28,467, 28,484 (June 5, 1996); Kansas Gas & Elec. Co. (Wolf Creek Generating Station, Unit 1), CLI-99-19, 49 NRC 441 (1999).

7. See also, e.g., UMTRCA Hearings 1 at 89-90 (written statement of Rep. Johnson); Hearings On S.3008, S.3078, and S.3253 ("UMTRCA Hearings III") Subcomm. On Energy Prod. & Supply, Senate Comm. On Energy & Natural Resources (1978) at 59 (statement of Sen. Haskell)(if private companies reprocessed some of the tailings, that would be regulated under the NRC's regulations).

8. Moreover, even if we had adhered to and sought to apply the Guidance's tests for licensee "motives," the record does not show that IUSA processed the Ashland 2 material as a means to change non-11e.(2) material into § 11e.(2) material. IUSA was aware that the NRC staff had accepted a DOE certification declaring that the Ashland 2 FUSRAP material met the 11e.(2) byproduct material definition. Based upon the DOE certification, the staff had concluded that "the material could be disposed of directly in the White Mesa tailings impoundments," without any need of processing at the mill. See Technical Evaluation Report at 6, attached to Amendment 6 to Source Material License Sua-1358 (June 23, 1998). The staff thus claims that "sham disposal" was not a concern "since it did not appear that the material was being processed to change its legal definition, and as such was truly being processed for its uranium content." See Staff Aff. of Joseph Holonich at 7. Whether the Ashland 2 material actually already was § 11e.(2) byproduct material under UMTRCA remains unclear. See supra at 6-7. Nevertheless, IUSA was aware that DOE, the Army Corps of Engineers, and the NRC staff all had categorized the material as such, and that the staff indeed had stated that this was material that could have been disposed of without any further processing. This suggests that IUSA had a genuine interest in processing the material for the uranium and not simply an interest in "reclassifying" the material by processing it. The subtle and complex nature of this inquiry, however, reinforces our view that discerning a licensee's motives for a license amendment transaction is a difficult, virtually impossible and, in any event, unnecessary exercise. Accordingly, our approach in this decision rejects ultimate business motivations as irrelevant to the § 11e.(2) definition.

Attachment K

§ 40.2a Coverage of inactive tailings sites.

(a) Prior to the completion of the remedial action, the Commission will not require a license pursuant to 10 CFR chapter I for possession of residual radioactive materials as defined in this part that are located at a site where milling operations are no longer active, if the site is covered by the remedial action program of title I of the Uranium Mill Tailings Radiation Control Act of 1978, as amended. The Commission will exert its regulatory role in remedial actions primarily through concurrence and consultation in the execution of the remedial action pursuant to title I of the Uranium Mill Tailings Radiation Control Act of 1978, as amended. After remedial actions are completed, the Commission will license the long-term care of sites, where residual radioactive materials are disposed, under the requirements set out in § 40.27.

(b) The Commission will regulate byproduct material as defined in this part that is located at a site where milling operations are no longer active, if such site is not covered by the remedial action program of title I of the Uranium Mill Tailings Radiation Control Act of 1978. The criteria in appendix A of this part will be applied to such sites.

[45 FR 65531, Oct. 3, 1980, as amended at 55 FR 45598, Oct. 30, 1990]

§ 40.3 License requirements.

A person subject to the regulations in this part may not receive title to, own, receive, possess, use, transfer, provide for long-term care, deliver or dispose of byproduct material or residual radioactive material as defined in this part or any source material after removal from its place of deposit in nature, unless authorized in a specific or general license issued by the Commission under the regulations in this part.

[55 FR 45598, Oct. 30, 1990]

§ 40.4 Definitions.

Act means the Atomic Energy Act of 1954 (68 Stat. 919), including any amendments thereto;

Agreement State means any State with which the Atomic Energy Commission or the Nuclear Regulatory Commission has entered into an effective agreement under subsection 274b. of the Atomic Energy Act of 1954, as amended.

Alert means events may occur, are in progress, or have occurred that could lead to a release of radioactive material but that the release is not expected to require a response by offsite response organizations to protect persons offsite.

Byproduct Material means the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by such solution extraction operations do not constitute "byproduct material" within this definition.

With the exception of "byproduct material" as defined in section 11e. of the Act, other terms defined in section 11 of the Act shall have the same meaning when used in the regulations in this part.

Commencement of construction means any clearing of land, excavation, or other substantial action that would adversely affect the natural environment of a site but does not include changes desirable for the temporary use of the land for public recreational uses, necessary borings to determine site characteristics or other preconstruction monitoring to establish background information related to the suitability of a site or to the protection of environmental values.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives.

Corporation means the United States Enrichment Corporation (USEC), or its successor, a Corporation that is authorized by statute to lease the gaseous diffusion enrichment plants in Paducah, Kentucky, and Piketon, Ohio, from the Department of Energy, or any person authorized to operate one or both of the gaseous diffusion plants, or other facilities, pursuant to a plan for the privatization of USEC that is approved by the President.

Decommission means to remove a facility or site safely from service and

reduce residual radioactivity to a level that permits—

(1) Release of the property for unrestricted use and termination of the license; or

(2) Release of the property under restricted conditions and termination of the license.

Department and *Department of Energy* means the Department of Energy established by the Department of Energy Organization Act (Pub. L. 95-91, 91 Stat. 565, 42 U.S.C. 7101 *et seq.*) to the extent that the Department, or its duly authorized representatives, exercises functions formerly vested in the U.S. Atomic Energy Commission, its Chairman, members, officers and components and transferred to the U.S. Energy Research and Development Administration and to the Administrator thereof pursuant to sections 104 (b), (c) and (d) of the Energy Reorganization Act of 1974 (Pub. L. 93-438, 88 Stat. 1233 at 1237, 42 U.S.C. 5814) and retransferred to the Secretary of Energy pursuant to section 301(a) of the Department of Energy Organization Act (Pub. L. 95-91, 91 Stat. 565 at 577-578, 42 U.S.C. 7151).

Depleted uranium means the source material uranium in which the isotope uranium-235 is less than 0.711 weight percent of the total uranium present. Depleted uranium does not include special nuclear material.

Effective kilogram means (1) for the source material uranium in which the uranium isotope uranium-235 is greater than 0.005 (0.5 weight percent) of the total uranium present: 10,000 kilograms, and (2) for any other source material: 20,000 kilograms.

Government agency means any executive department, commission, independent establishment, corporation, wholly or partly owned by the United States of America which is an instrumentality of the United States, or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the Government.

License, except where otherwise specified, means a license issued pursuant to the regulations in this part.

Persons means: (1) Any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, Government agency other than the Commission or the Department of Energy except that the Department of Energy shall be considered a person within the meaning of the regulations in this part to the extent that its facilities and activities are subject to the licensing and related regulatory authority of the Commission pursuant to section 202 of the Energy Reorganization Act of 1974 (88 Stat. 1244) and the Uranium Mill Tailings Radiation Control Act of 1978 (92 Stat. 3021), any State or any political subdivision of, or any political entity within a State, any foreign government or nation or any subdivision of any such government or nation, or other entity; and (2) any legal successor, representative, agent or agency of the foregoing.

Pharmacist means an individual registered by a state or territory of the United States, the District of Columbia or the Commonwealth of Puerto Rico to compound and dispense drugs, prescriptions and poisons.

Physician means a medical doctor or doctor of osteopathy licensed by a State or Territory of the United States, the District of Columbia, or the Commonwealth of Puerto Rico to prescribe drugs in the practice of medicine.

Principal activities, as used in this part, means activities authorized by the license which are essential to achieving the purpose(s) for which the license was issued or amended. Storage during which no licensed material is accessed for use or disposal and activities incidental to decontamination or decommissioning are not principal activities.

Residual radioactive material means: (1) Waste (which the Secretary of Energy determines to be radioactive) in the form of tailings resulting from the processing of ores for the extraction of uranium and other valuable constituents of the ores; and (2) other waste (which the Secretary of Energy determines to be radioactive) at a processing site which relates to such processing, including any residual stock of unprocessed ores or low-grade materials. This term is used only with respect to materials at sites subject to remediation under title I of the Uranium Mill Tailings Radiation Control Act of 1978, as amended.

Site area emergency means events may occur, are in progress, or have occurred that could lead to a significant release of radioactive material and that could require a response by offsite response organizations to protect persons offsite.

Source Material means: (1) Uranium or thorium, or any combination thereof, in any physical or chemical form or (2) ores which contain by weight one-twentieth of one percent (0.05%) or more of: (i) Uranium, (ii) thorium or (iii) any combination thereof. Source material does not include special nuclear material.

Special nuclear material means: (1) Plutonium, uranium 233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 51 of the Act, determines to be special nuclear material; or (2) any material artificially enriched by any of the foregoing.

Transient shipment means a shipment of nuclear material, originating and terminating in foreign countries, on a vessel or aircraft that stops at a United States port.

United States, when used in a geographical sense, includes Puerto Rico and all territories and possessions of the United States.

Unrefined and unprocessed ore means ore in its natural form prior to any processing, such as grinding, roasting or beneficiating, or refining.

Uranium enrichment facility means:

(1) Any facility used for separating the isotopes of uranium or enriching uranium in the isotope 235, except laboratory scale facilities designed or used for experimental or analytical purposes only; or

(2) Any equipment or device, or important component part especially designed for such equipment or device, capable of separating the isotopes of uranium or enriching uranium in the isotope 235.

Uranium Milling means any activity that results in the production of by-product material as defined in this part.

[25 FR 284, Jan. 14, 1961]

EDITORIAL NOTE: For additional FEDERAL REGISTER citations affecting §40.4, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 40.5 Communications.

(a) Unless otherwise specified or covered under the regional licensing program as provided in paragraph (b) of this section, any communication or report concerning the regulations in this part and any application filed under these regulations may be submitted to the Commission as follows:

(1) By mail addressed to: Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

(2) By delivery in person to the Commission's offices to the Director, Office of Nuclear Material Safety and Safeguards at:

(i) 2120 L Street, NW., Washington, DC; or

(ii) 11545 Rockville Pike, Two White Flint North, Rockville, Maryland.

(b) The Commission has delegated to the five Regional Administrators licensing authority for selected parts of its decentralized licensing program for nuclear materials as described in paragraph (b)(1) of this section. Any communication, report, or application covered under this licensing program must be submitted as specified in paragraph (b)(2) of this section.

(1) The delegated licensing program includes authority to issue, renew, amend, cancel, modify, suspend, or revoke licenses for nuclear materials issued pursuant to 10 CFR parts 30 through 36, 39, 40, and 70 to all persons for academic, medical, and industrial uses, with the following exceptions:

(i) Activities in the fuel cycle and special nuclear material in quantities sufficient to constitute a critical mass in any room or area. This exception does not apply to license modifications relating to termination of special nuclear material licenses that authorize possession of larger quantities when the case is referred for action from NRC's Headquarters to the Regional Administrators.

(ii) Health and safety design review of sealed sources and devices and approval, for licensing purposes, of sealed sources and devices.

Attachment 2

EPA United States Environmental Protection Agency

Radiation Protection Program
Mixed Waste Team

Guidance on the Definition and Identification of Commercial Mixed Low-Level Radioactive and Hazardous Waste

The following guidance was developed by NRC-EPA for Low-Level Mixed Waste Identification. The following memo was published with this guidance.

Definition

Mixed Low-Level Radioactive and Hazardous Waste (Mixed LLW) is defined as waste that satisfies the definition of low-level radioactive waste (LLW) in the Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPAA) and contains hazardous waste that either (1) is listed as a hazardous waste in Subpart D of 40 CFR Part 261 or (2) cause the LLW to exhibit any of the hazardous waste characteristics identified in Subpart C of 40 CFR Part 261.

Identification

The policy provided in this guidance was developed jointly by the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Environmental Protection Agency (EPA). LLW that contains hazardous wastes defined under the Resource Conservation and Recovery Act (RCRA) is Mixed LLW. Under current Federal law, such waste is subject to regulation by NRC under the Atomic Energy Act (AEA), as amended, and by EPA under RCRA, as amended. In the absence of legislation to the contrary, management and disposal of this waste must be conducted in compliance with NRC and EPA or equivalent state regulations.

This guidance presents a methodology (Figure 1) that may be used by generators of commercial LLW to ldentify Mixed LLW. Implementation of the methodology should identify Mixed LLW and aid generators in assessing whether they are currently generating Mixed LLW. Generators are cautioned, however, that application of the methodology does not affect the need to comply with applicable NRC and EPA regulations. Because EPA's regulations for hazardous waste are currently changing, generators should use applicable regulations that are ln effect at the time of implementation of the methodology. This guidance has been prepared based on NRC and EPA regulations in effect on December 31, 1988.

Application of this methodology to identify Mixed LLW will reveal the complexities of the definition of Mixed LLW. If generators have specific

questions about whether LLW is Mixed LLW, they should promptly contact the agencies by writing to the persons listed below.

Methodology

Step 1. Identify LLW

Step 1 in the methodology requires that the generator determine whether the waste is LLW as defined in the LLRWPAA. This Act defines LLW as radioactive material that (A) is not high-level radioactive waste, spent nuclear fuel, or byproduct material as defined in section lle(2) of the AEA (i.e., uranium or thorium mill tailings) and (B) the NRC classifies as LLW consistent with existing law and in accordance with (A). If the generator determines that the waste is LLW, the generator should proceed to step 2. If the determination is negative, then the waste cannot be Mixed LLW because it is not LLW. However, the waste may be another radioactive or hazardous waste regulated under AEA, RCRA, or both statutes.

Step 2. Identify Listed Hazardous Waste

In step 2, the generator determines whether the LLW contains any hazardous wastes listed in Subpart D of 40 CFR Part 261. LLW is Mixed LLW if it contains any hazardous wastes specifically listed in Subpart D of 40 CFR Part 261. Listed hazardous wastes include hazardous waste streams from specific and non-specific sources listed in 40 CFR Parts 261.31 and 261.32 and discarded commercial chemical products listed in 40 CFR Part 261.33. The generator is responsible for determining whether LLW contains listed hazardous wastes. The determination should be based on knowledge of the process that generates the waste. For example, if a process produces LLW that contains spent solvents that are specifically listed in the tables of Subpart D of Part 261, the generator should suspect that the waste is Mixed LLW.

Step 3. Identify Hazardous Characteristics

If the LLW does not contain a listed hazardous waste, Step 3 of the methodology requires the generator to determine whether the LLW contains hazardous wastes that cause the LLW to exhibit any of the hazardous waste characteristics identified in Subpart C of 40 CFR Part 261. This determination can be based on either (1) an assessment of whether the LLW exhibits one or more of the hazardous waste characteristics because it contains non-AEA materials (i.e., materials other than source, special nuclear, and byproduct materials) based on the generator's knowledge of the materials or processes used in generating the LLW or (2) testing of the LLW in accordance with the methods identified in Subpart C of Part 261. Except for certain ores containing source material, which are defined as source material in 10 CFR 40.4(h), and uranium and thorium mill tailings or wastes, NRC and EPA interpret the definitions of source, special nuclear, and byproduct materials to include only the radioactive elements themselves. Generators should identify non-AEA materials contained in the LLW by examining the process that generates the waste. For example, if the process mixes byproduct material (an AEA material) with a volatile organic solvent (a

non-AEA material), the generator would determine either through his knowledge or testing of representative samples of the LLW that contain the solvent waste whether the waste exhibits any of the hazardous waste characteristics because it contains the solvent.

If the wastes are tested, the generator should collect and test representative samples of the LLW to determine if the waste exhibits any of the characteristics identified in Subpart C because it contains the non-AEA materials. These characteristics include ignitability (Section 261.21), corrosivity (Section 261.22), reactivity (Section 261.23), and Extraction Procedure (EP) toxicity (Section 261.24). Waste testing should be conducted in a manner that is consistent with the worker protection requirements in 10 CFR Part 20. The purpose of the characteristics tests is to identify hazardous wastes that are not specifically listed in Subpart D of 40 CFR Part 261. Test methods to collect representative samples of wastes are described in Appendix I of 40 CFR Part 261. The samples should then be tested using the referenced testing protocols (e.g., ASTM Standard D-93-79 or D-93-80 for the Pensky-Martens Closed Cup Ignitability Test). EPA's testing requirements are reproduced in Appendix II of this guidance. It should be noted that on June 13, 1986, EPA proposed a modification to the EP Toxicity testing requirements to include organic constituents.

If LLW contains a listed hazardous waste or non-AEA materials that cause the LLW to exhibit any of the hazardous waste characteristics, the waste is Mixed LLW and must, therefore, be managed and disposed of in compliance with EPA's Subtitle C hazardous waste regulations in 40 CFR Parts 124, and 260 through 270, and NRC's regulations in 10 CFR Parts 20, 30, 40, 61, and 70.

Management and disposal of Mixed LLW must be conducted in compliance with state requirements in states with EPA-authorized regulatory programs for the hazardous components of such waste and NRC agreement state radiation control programs for LLW.

Questions and Answers

As a supplement to the "Guidance on the Definition and Identification of Commercial Mixed Low-Level Radioactive and Hazardous Waste (Mixed LLW)," answers to anticipated questions are included to clarify obscure points and to respond to public comments.

1. Are my low-level radioactive wastes exempt from RCRA because they are source, special nuclear, or byproduct materials as defined under the AEA?

Except for certain ores containing source material, which are defined as source material in 10 CFR 40.4(h), and uranium and thorium mill tailings or wastes, NRC and EPA consider that only the radionuclides themselves are exempt from RCRA. Section 1004(27) of RCRA excludes source, special nuclear, and byproduct material from the definition of "solid waste." RCRA defines solid

waste as:

"any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, or from community activities, but does not include solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Waster Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or bvproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923)."

Since "hazardous waste" is a subset of "solid waste," RCRA also excludes source, special nuclear, and byproduct materials from the definition of hazardous waste and, therefore, from regulation under EPA's RCRA Subtitle C program. Section 11 of the Atomic Energy Act, as amended, defines these radioactive materials as follows:

Source material means (1) uranium, thorium, or any other material which is determined by the Atomic Energy Commission (AEC) pursuant to the provisions of section 61 of the AEA to be source material, or (2) ores containing one or more of the foregoing materials, in such concentration as the AEC may by requlation determine from time to time.

Special nuclear material means (1) plutonium, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the AEC, pursuant to the provisions of Section 51 of the AEA, determines to be special nuclear material; or (2) any material artificially enriched by any of the foregoing, but does not include source material. Byproduct material means (1) any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to radiation incident to the process of producing or utilizing special nuclear material, and (2) the tailings or wastes produced by the extraction or concentratlon of uranium or thorium from any ore processed primarily for its source material content.

Source, special nuclear, and byproduct materials, however, may be mixed with other radioactive or non-radioactive materials that are not source, special nuclear, or byproduct materials. For example, tritium may be contained in toluene, a nonhalogenated aromatic solvent. Consistent with the definition of byproduct material, the tritium may be considered a byproduct material, while the toluene that contalns the tritium would not be byproduct material. Mixtures of toluene and tritium could satisfy the definition of Mixed LLW because they contain listed hazardous waste (spent toluene) and tritium that may qualify as LLW if it has been produced by activities regulated by NRC under the AEA.

2. What are some examples of Mixed LLW?

A preliminary survey performed for the NRC identified two potential types of Mixed LLW:

- LLW containing organic liquids, such as scintillation liquids and vlals; organic lab liquids; sludges; and cleaning, degreasing, and miscellaneous solvents.

- LLW containing heavy metals, such as discarded lead shielding, discarded lined containers, and lead oxide dross containing uranium oxide; light water reactor (LWR) process wastes containing chromate and LWR decontamination resins containing chromium; and mercury amalgam in trash.

The preliminary survey concluded that potential Mixed LLW comprises a small percentage of all LLW. For example, LLW containing organic liquids accounted for approximately 2.3% by volume of LLW reported in the preliminary survey (Bowerman, et al., 1985). An earlier survey identified a more diverse universe of potential Mixed LLW includlng wastes that contained aldehydes, aliphatic halogenated hydrocarbons, alkanas, alkenes, amino acids, aromatic hydrocarbons, chelating agents, esters, ethers, ketones, nltrosamines, nucleotides, pesticides, phenolic compounds, purines, resins, steroids, and vitamlns (General Research Corporation, 1980). NRC also anticipates that additional LLW may be identified as Mixed LLW in the future, as generators implement the definition of Mixed LLW and as EPA revises the definition of hazardous waste.


(Editorial Note: The following discussion on BRC is moot as NRC's BRC policy has been rescinded)

3. Could some "below regulatory concern" wastes be considered Mixed LLW?

A determination that radioactive wastes are below regulatory concern (BRC) for radioactivity may affect how the wastes are managed or discarded, but it does not affect the legal status of the wastes. Specifically, their status with respect to the definition of Mixed LLW does not change. BRC waste is still LLW because it satisfies the definition of LLW in the LLRWPAA and is within the NRC's jurisdictional authority under the AEA.

When radioactive waste contains sufficiently low concentrations or quantities of radionuclides, NRC may find that they do not need to be managed or disposed of as radioactive wastes. For NRC to make such a finding, management and disposal of the waste must not pose an undue radiological risk to the publ-c and the environment. However, NRC's determination that the radioactive content of the wastes is below NRC regulatory concern does not relieve licensees from compliance with applicable rules of other agencies governing non-radiological hazards (e.g., regulations of EPA or the Department of Transportation).

Therefore, some BRC wastes may still be considered Mixed LLW if they contain hazardous wastes that have been listed in Subpart D of 40 CFR Part 261 or that cause the LLW to exhibit any of the hazardous characteristics described in Subpart C of 40 CFR Part 261. BRC Mixed LLW may be managed without regard to its radioactivity (but it must still be managed as a hazardous waste in compliance wlth EPA's regulations for hazardous waste generation, storage,

transportation, treatment, and disposal (cf. 40 CFR Parts 262 through 266)).

4. If I use chemicals in my process that are identified by EPA as hazardous constituents, should I assume that my LLW is Mixed LLW?

No. Low-level radioactive waste that contains hazardous constituents may not necessarily be Mixed LLW. As defined above, Mixed LLW is LLW that contains a known hazardous waste (i.e., a listed hazardous waste) or that exhibits one or more of the hazardous characteristics because it contains non-AEA materials. For wastes that are not listed in Subpart D of 40 CFR Part 261, testing is not necessarily required to "determine" whether the LLW exhibits any of the hazardous characteristics. A generator may be able to determine whether the LLW is Mixed LLW based on knowledge of the waste characteristics or the process that generates the LLW.

Furthermore, if the generator normally segregates LLW from hazardous and other types of wastes, there is no need to assume that hazardous wastes may have been inadvertently mixed with LLW or to inspect each container or receptacle to ensure that inadvertent mixing has not occurred. Although the generator is subject to RCRA inspections and must follow the manifest, pre-transport, and other requirements of 40 CFR Part 262, the generator is not required to demonstrate that every LLW container does not contain hazardous waste.

5. How can I obtain representative samples of heterogeneous trash included in LLW to perform the hazardous characteristics tests?

Before discussing the collection of representative samples of waste, generators are reminded that they are not required to test LLW to determine if the waste contains hazardous wastes. Generators and handlers of mixed waste and hazardous waste can declare their wastes hazardous or nonhazardous based on knowledge of the process/production of the waste, in lieu of testing for a characteristic.

Representative samples of waste should be collected for testing in accordance with EPA's regulations in 40 CFR 261.20(c), which state that waste samples collected using applicable methods specified in Appendix I of Part 261 will be considered as representative samples for hazardous characteristics testing. This appendix has been included in its entirety in Appendix II of this guidance. The sampling techniques described in Appendix I of Part 261 apply to extremely viscous liquids, fly ash-like material, containerized liquid wastes, and liquid wastes in pits, ponds lagoons, and similar reservoirs. In the absence of guidance about sampling heterogeneous wastes, generators should use appropriate portions of the sampling methods described in Appendix, I of Part 261 and EPA's manual entitled "Test Methods for Evaluating Solid Waste, Third Edition (i.e., SW-846) in combination with other methods to collect, to the maximum extent practicable, representative samples of the waste to be tested.

6. Are lead containers whose primary use is for shielding in disposal operations, hazardous waste under RCRA?

No. While lead containers and lead container liners may exhibit the hazardous characteristic for lead, those containers whose primary use is for shielding in low-level waste disposal operatlons are not considered wastes and thus, are not subject to the hazardous waste rules. These same containers and liners if disposed of or discarded would be considered wastes and if they exhibit the hazardous characteristic, would be subject to the hazardous waste rules.

It should be noted that EPA recognizes that all lead containers and liners may be equally hazardous to human health and the environment when placed ln the ground independent of its legal classification as a waste or container. Therefore, EPA recommends that all lead containers and lead liners be managed in an environmentally safe manner (e.g., managed in a permitted hazardous waste facility or treated such that it no longer exhibits its characteristic).Encapsulation may be a viable mechanism to mitigate lead migration from these containers and liners. The EPA has not evaluated specific containers or encapsulation methodologies usinq the EP Toxicity test.

7. If a waste contains any of the constituents listed on Appendix VIII of Part 261, is it a hazardous under RCRA?

No. Under RCRA, a waste is hazardous if it is a "listed" waste or it exhibits a hazardous characteristic. Wastes are listed by EPA if they contain significant amounts of toxic constituents identified in Appendix VIII, and the Agency has determined that these toxic constltuents are persistent and mobile to some degree such that they pose a potential and substantial threat to human health and the environment. (Factors outlined in 40 CFR 261.11(a)(3)(i)-(xi), which include nature of the toxicity present and potential degradation products, may be considered when determining whether or not a waste should be listed). However, until the Agency lists the wastes in Subpart D of Part 261, they would not be considered hazardous by EPA (even if the waste contains one or more of the hazardous constituents listed on Appendix VIII) unless the waste would exhibit one or more of the hazardous waste characteristics.

References

Bowerman, B. S., Kempf, C. R., MacKenzie, D. R., Siskind, B. and P. L. Piciulo, 1985, "An Analysis of Low-Level Wastes: Review of Hazardous Waste Regulations and Identification of Radioactive Mixed Wastes," NUREG/CR-4406, U.S. Nuclear Regulatory Commission.

General Research Corpora'ion, 1980, "Study of Chemical Toxicity of Low-Level Wastes," NUREG/CR-1793, U.S. Nuclear Regulatory Commission.

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URL: http://www.epa.gov/radiation/mixed-waste/mw_pg25.htm

Last Reviewed: November 30, 2000.

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Attachment M

contention must be one which, if proven, would entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

Since the Commission has made a final determination that the amendment involves no significant hazards consideration, if a hearing is requested, it will not stay the effectiveness of the amendment. Any hearing held would take place while the amendment is in effect.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Services Branch, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC 20555, by the above date. Where petitions are filed during the last ten (10) days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at 1-(800) 325-6000 (in Missouri 1-(800) 3426700). The Western Union operator should be given Datagram Identification Number 3737 and the following message addressed to (Project Director): petitioner's name and telephone number, date petition was mailed, plant name, and publication date and page number of this Federal Register notice. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to the attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

Duquesne Light Company, et. al., Docket No. 50-412, Beaver Valley Power Station, Unit 2, Shippingport, Pennsylvania

Date of amendment request: January 13, 1992

Description of amendment request: The amendment revises Table 3.2-1 of Technical Specification 3.2.5, "DNB Parameters." Specifically, it lowers the value for the minimum required reactor coolant system (RCS) total flow rate from 274,800 gpm to 270,850 gpm and lowers the flow measurement uncertainty value, specified in the footnote, from 3.5% to 2.0%.

Date of issuance: April 23, 1992

Effective date: April 23, 1992

Amendment No.: 45

Facility Operating License No. NPF-73. Amendment revised the Technical Specifications. Public comments requested as to proposed no significant hazards consideration: No. The Commission's related evaluation of the amendment, finding of emergency circumstances, and final determination of no significant hazards consideration are contained in a Safety Evaluation dated April 23, 1992.

Local Public Document Room location: B. F. Jones Memorial Library, 663 Franklin Avenue, Aliquippa, Pennsylvania 15001.

Attorney for licensee: Gerald Charnoff, Esquire, Jay E. Silberg, Esquire, Shaw, Pittman, Potts & Trowbridge, 2300 N Street, NW., Washington, DC 20037.

NRC Project Director: John F. Stolz

Dated at Rockville, Maryland, this 5th day of May 1992.

For the Nuclear Regulatory Commission

Steven A. Varga,

Director, Division of Reactor Projects - I/II, Office of Nuclear Reactor Regulation

[Doc. 92-11099 Filed 5-12-92; 8:45 am]

BILLING CODE 7590-01-F

Uranium Mill Facilities, Request for Public Comments on Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments and Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores

AGENCY: Nuclear Regulatory Commission.

ACTION: Request for public comment.

SUMMARY: The Nuclear Regulatory Commission (NRC) is soliciting public comment on two guidance documents: "Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, section 11e.(2) Byproduct Material in Tailings Impoundments" and "Position ad Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores;" along with the associated staff analyses.

DATES: The comment period expires June 12, 1992.

ADDRESSES: Send written comments to Chief, Rules and Directives Review Branch, U.S. Nuclear Regulatory Commission, Washington, DC 20555, or hand deliver to 7920 Norfolk Avenue, Bethesda, MD, between 7:45 a.m. and 4:15 p.m. on Federal workdays.

FOR FURTHER INFORMATION CONTACT: Myron Fliegel, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555; telephone (301) 504-2555.

SUPPLEMENTARY INFORMATION:

Discussion

NRC staff has prepared a revision to its licensing guidance, issued July 27, 1988, on the disposal of material other than that defined in section 11e.(2) of the Atomic Energy Act of 1954 (AEA), as amended, in uranium mill tailings impoundments (Part A of the Supplementary Information). The staff has also prepared new licensing guidance on the processing of feed materials other than natural ores in uranium mills (Part B of the Supplementary Information). In developing the guidance, staff analyzed the policy and legal issues involved for each guidance document. In order to solicit input all interested parties on the issues associated with these guidance documents, the NRC is soliciting comments from the public, the Environmental Protection Agency, NRC Agreement States, and regional low-level waste compacts. Comments received will be considered in deciding whether the guidance documents should be revised.

In the guidance documents and associated staff analyses, the term "non-11e.(2) byproduct material" is used to refer to radioactive waste that is similar in physical and radiological characteristics (for example, low specific activity) to byproduct material, as defined in Section 11e.(2) of the AEA but does not meet the definition in that section because it is not derived from ore processed primarily for its source material content.

The staff analyses in Parts A and B contain additional definitions and extensive background information necessary to understand the summary guidance documents. The reader should consult the analyses for the terms and issues presented in context.

Part A—Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments

1. In reviewing licensee requests for the disposal of source material wastes that have radiological characteristics comparable to those of Atomic Energy Act (AEA) of 1954, section 11e.(2) byproduct material (hereafter designed as "11e(2) byproduct material") in tailings impoundments, staff will follow the guidance set forth below. Licensing of the receipt and disposal of such non-AEA, section 11e.(2) byproduct material [hereafter designated as "non-11e.(2) byproduct material"] should be done under 10 CFR Part 40.

2. Naturally occurring and accelerator produced material waste shall not be authorized for disposal in an 11e.(2) byproduct material impoundment.

3. Special nuclear material and Section 11e.(1) product material waste should not be considered as candidates for disposal in a tailings impoundment, without compelling reasons to the contrary. If staff believes that such material should be disposed of in a tailings impoundment in a specific instance, a request for approval by the Commission should be prepared.

4. The 11e.(2) licensee must demonstrate that the material is not subject to applicable Resource Conservation and Recovery Act regulations or other U.S. Environmental Protection Agency standards for hazardous or toxic wastes prior to disposal.

5. The 11e(2) licensee must demonstrate that there are no Comprehensive Environmental Response, Compensation and Liability Act issues related to the disposal of the non-11e(2) byproduct material.

6. The 11e.(2) licensee must demonstrate that there will be no significant envtronmental impact from disposing of this material.

7. The 11e.(2) license must demonstrate that the proposed disposal will not compromise the reclamation of the tailings impoundment by demonstrating compliance with the reclamation and closure criteria of appendix A of 10 CFR part 40.

8. The 11e.(2) licensee must provide documentation showing approval by the Regional Low-Level Waste Compact in whose jurisdiction the waste originates as well as approval by the Compact in whose jurisdiction the disposal site is located.

9. The Department of Energy should be informed of the Nuclear Regulatory Commission findings and proposed action, with an opportunity to provide comments within 30 days, before granting the license amendment to the 11e.(2) licensee.

10. The mechanism to authorize the disposal of non-11e.(2) byproduct material in a tailings impoundment is an amendment to the mill license under 10 CFR Part 40, authorizing the receipt of the material and its disposal. Additionally, an exemption to the requirements of 10 CFR Part 61, under the authority of § 61.6, must be granted. The license amendment and the § 61.6 exemption should be supported with a staff analysis paper addressing the issues discussed in this guidance.

NRC Staff Analysis of Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments

1. Introduction

Recently, the Nuclear Regulatory Commission (NRC) received several requests to allow activities other than the normal processing of native uranium ore at licensed uranium milling facilities. We have, in the past, received, and, in some cases, approved, similar requests. These requests have fallen into two categories. The first category of requests is to allow the processing of feedstock material that is not usually thought of as ore, for the extraction of uranium, and then dispose of the resulting wastes and tailings in the facility's tailings pile. The second category of requests is to allow the direct disposal of non-Atomic Energy Act (AEA) of 1954, section 11e.(2) byproduct material [1] [hereafter designated as "non-11e.(2) byproduct material"], that was not generated onsite, into tailings piles.

In assessing these requests, the staff has raised two policy concerns related to tailings piles. The first concern is that the requested activity might result in complicated, dual, or even multiple regulation of the tailings pile, and the second concern is that the requested activity might jeopardize the ultimate transfer to the United States Government, for perpetual custody and maintenance, of the reclaimed tailings pile.

This analysis addresses the second category of requests, that is, requests to dispose of non-11e.(2) byproduct material in tailings piles. Issues relating to such proposals requesting regulatory consideration of commingling of tailings with other radioactive wastes are discussed. This analysis is limited to options involving commingling with existing tailings impoundments.

2. Background

The Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 amended the AEA to specifically include uranium and thorium mill tailings and other wastes from the process as radioactive material to be licensed by NRC. Specifically, the definition of byproduct material was revised in Section 11e.(2) of the AEA, to include ". . . the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content."

The definition of byproduct material [2] in Section 11e.(2) of the AEA includes all the wastes resulting from the milling process, not just the radioactive components. In addition, Title II of UMTRCA amended the AEA to explicitly exclude the requirement for the Environmental Protection Agency (EPA) to permit 11e.(2) byproduct material under the Resource Conservation and Recovery Act (RCRA). The designation of 11e.(2) byproduct material contrasts significantly with the situation for source material [3] and other radioactive materials controlled under the authority of the AEA. This possibility for dual regulation by both NRC and EPA can become an issue when dealing with mixed hazardous wastes. As a result of UMTRCA, NRC amended 10 CFR Part 40 to regulate the uranium and thorium tailings and wastes from the milling process. Thus, under normal operation, all the tailings and wastes in an NRC or Agreement State licensed mill producing uranium or thorium are classified as "11e.(2) byproduct material," and are disposed of in tailings piles regulated under Part 40. They are not subject to EPA regulation, under RCRA. However, the EPA Clean Air Act regulations still result in direct EPA permit authority over the mill tailings, whether or not they are commingled with non-11e.(2) byproduct material waste.

The UMTRCA also required and provided for long-term custody and surveillance of the byproduct material and the land use for its disposal. The Department of Energy (DOE) is the Federal agency currently designated as

[1] For the purposes of this analysis, the term "non-11e.(2) byproduct material" will be used to refer to radioactive waste that is similar to byproduct material, as defined in the AEA in section 11e.(2), but is not legally considered to be 11e.(2) byproduct material.

[2] Henceforth, byproduct material as defined in Section 11e.(2) of the AEA will be referred to as "11e.(2) byproduct material."

[3] Except in the case of source material ore, source material consists only of the radioactive components of the waste, that is: uranium, thorium, or any combination of the two [10 CFR 40.4(h)].

the "custodial agency" by the AEA. However, the UMTRCA specifically referred only to 11e.(2) byproduct material. UMTRCA contains no provision allowing for the transfer of custody or title, and hence for eventual long-term custody and surveillance of other material, even if the material were no more radioactive or toxic than the uranium or thorium tailings themselves.

3. The Category of Requests for Commingled Disposal To Be Addressed

Some licensees have proposed to directly dispose of radioactive wastes in existing uranium mill tailings sites. The materials vary from tailings from extraction processes for metals and rare-earth metals (such as copper, tantalum, columbium, zirconium) to spent resins from water-treatment processes. However, because these materials did not result from the extraction or concentration of uranium or thorium from ore, they are not 11e.(2) byproduct material. Many of these "orphaned" wastes have elevated concentrations of source material, and unless otherwise exempted, require licensed control, if the materials exceed the 0.05-percent licensable (content of source material by weight) criterion in 10 CFR Part 40. Some of the wastes proposed for commingling contain radioactive material, not regulated by NRC, that classify as naturally-occurring and accelerator-produced radioactive material (NARM) and as such cannot be easily disposed of. In most of the proposals the staff has seen, disposal of these materials in tailings impoundments would not significantly increase the effect on the public health, safety, and environment. Because of the relatively large volumes of these wastes, low-level waste disposal options are limited. These wastes are similar to tailings in volume, radioactivity, and toxicity. Therefore, some waste producers see the mill tailings disposal sites as providing an economical option for such disposal.

4. Types of Wastes Being Proposed for Disposal Into Tailings Piles

The NRC and the Agreement States continue to receive requests for the direct disposal of non-11e.(2) byproduct material into uranium mill tailings piles. The following general categories of non-11e.(2) byproduct material illustrate the requests submitted to NRC and the Agreement States for disposal into uranium mill tailings piles licensed under authority established by title II of UMTRCA:

4.1 Mine Wastes

To mine uranium or other source material ore from underground or open-pit mines, operators frequently need to dewater the mine cavities. This results in quantities of mine water with suspended or dissolved constituents, some of which are source material. After processing the mine water to satisfy National Pollution Discharge Elimination System or other release requirements, the resultant clean mine water is then discharged offsite. In some cases, the resulting water-treatment filter-cake or sludge residues exceed the 0.05-percent licensable limit for source material. These residues do not satisfy the definition of 11e.(2) byproduct material, because they do not result from the extraction or concentration of uranium or thorium from ore.

NRC and the Agreement States have been contacted by licensees and waste generators that desire to dispose of such filter-cake or sludge residue directly into the tailings piles at licensed uranium mill tailings sites. NRC has indicated that such material does not constitute 11e.(2) byproduct material.

4.2 Secondary Process Wastes

Frequently, natural ores that are processed for rare-earth or other metals have significant concentrations of radioactive elements. Examples include copper, zirconium, and vanadium ores. Sometimes the uranium is captured in a side-stream recovery operation, in which uranium is precipitated out of the pregnant solution, before or after the rare earth or other metal. Although this side-stream recovery operation is licensed by NRC, the tailings (which consist of the crushed depleted ore and the depleted solution after recovery of metals and rare earths) are not 11e.(2) byproduct material. This is because the ore was not processed primarily for its source material content, but for the rare earth or other metal. If the tails contain greater than 0.05 percent uranium and thorium, they would be source material and would thus be licensable and have to be disposed of in compliance with NRC regulations. NRC has received requests from NRC and Agreement State licensees to dispose of such tailings (resulting from processes to extract other metals) into licensed uranium mill tailings piles.

4.3 Formerly Utilized Sites Remedial Action Program (FUSRAP)

These sites primarily processed material, such as monazite sands, to extract thorium for commercial applications. Government contracts were issued for thorium source material used in the Manhattan Engineering District and early Atomic Energy Commission programs. Wastes resulting from that processing and disposed of at these sites would qualify as 11e.(2) byproduct material. However, it is not clear that all the contaminated material at these sites result from processing of ore for thorium. At some sites there was also processing for rare earths and other metals. The DOE, which accepts responsibility for the FUSRAP materials, is investigating options for disposal and control of these materials. DOE estimates that a total of 1.7 million cubic yards of material is located at sites in 13 States. Recent proposals have considered the transportation of FUSRAP materials from New Jersey to tailing piles at uranium mills in other States, such as Utah, Washington, and Wyoming.

4.4 NARM

These wastes result from a wide range of operations, but are not generally regulated by the AEA. Past requests for disposal in uranium mill tailing ponds have included contaminated resins from ion-exchange well-water purifying operations. NRC has also received inquiries regarding the disposal of construction scrap and radium-contaminated soil from old commercial operations. The individual States usually administer the regulatory responsibility over NARM, but many other Federal agencies have jurisdictional responsibilities related to NARM. These include EPA, the Consumer Product Safety Commission, the Department of Health and Human Services, and the Department of Labor. There is a State-licensed NARM disposal facility in Clive, Utah, licensed to Envirocare of Utah, Inc.

Two common elements run through most of the requests we have received for direct disposal of non-11e.(2) byproduct material in tailings piles: the material is of low specific-activity, and the material is physically similar to 11e.(2) byproduct material. Most of the requests are for bulk material like soil, crushed rock, or sludges, contaminated with source material in relatively low concentrations.

5. Previous Staff Guidance

In response to a request from Region IV, the Director of the Office of Nuclear Material Safety and Safeguards (NMSS) provided guidance for addressing requests to allow the disposal of non-11e.(2) byproduct material in licensed mill tailings impoundments. The staff considered that the types of material proposed for such disposal could be

separated into two categories: (1) NARM wastes; and (2) wastes generated by operations regulated under the AEA.

In the guidance, the staff concluded that it would not approve a policy of allowing disposal of NARM wastes in tailings impoundments. A major concern was that NRC did not have authority to regulate NARM. If States or EPA became involved in regulation of NARM, a situation with duplicative jurisdiction with respect to the commingled radioactive materials could be created. Furthermore, the Commission's authority, under section 84c of the AEA, to approve alternatives to requirements, if the NARM wastes were to violate standards, would be impaired.

The staff viewed the other category, wastes generated by operations regulated under the AEA, as potentially acceptable in a mill tailings impoundment. Each such proposal should be considered on a case-specific basis. The guidance identified four findings that would have to be made before NRC would authorize such disposal.

As a result of this guidance, present policy is that NRC will approve of proposed disposals of source material on their individual merits, and only if the licensee can demonstrate the following:

a. The disposal will have no significant additional effects on public safety and health, and the environment.

b. The disposal will not compromise the reclamation of the tailings impoundment. In effect, disposal must comply with the reclamation and closure criteria in part 40, appendix A.

c. The disposal will not result in the tailing becoming subject to RCRA or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

d. DOE or the State agrees, in advance, to take title to the site, upon completion of the reclamation.

The first two conditions are self-evident and will not be discussed further. The other two conditions can be sufficient obstacles to any routine decisions to allow such commingling of byproduct and non-11e.(2) byproduct materials under UMTRCA, and are discussed, along with other issues, below.

6. Major Issues

Although the technical, economic and societal advantages in some proposals have appeared to encourage such disposal of low specific-activity radioactive material into tailing piles, significant statutory and regulatory issues may complicate such disposal:

6.1 RCRA Authority and Mixed Waste

The NRC and Agreement State licensed uranium and thorium milling facilities do not fall under the jurisdiction of RCRA. The AEA explicitly excludes 11e.(2) byproduct material from RCRA permitting. However, radioactive wastes that are not 11e.(2) byproduct material and contain hazardous wastes are mixed wastes and are not exempted from RCRA. Commingling RCRA-regulated wastes with tailings could result in the application of the EPA RCRA regulations and separate EPA-permitting authority. The licensee would have to comply with both EPA- and AEA-related regulations.

NRC has revised the regulations in 10 CFR part 40 (including appendix A) to conform to the appropriate portions of EPA's RCRA regulations. The UMTRCA, as amended, stipulates that regulations for byproduct material be consistent with the Solid Waste Disposal Act (SWDA). On November 13, 1987, NRC conformed the regulations of part 40 to the EPA standards containing the RCRA provisions of the SWDA. However, if a licensee disposes of source material compounds or mixtures other than uranium or thorium ores, in the tailings piles, only the source material component of that compound or mixture would be excluded from the provisions of RCRA, if the compound or mixture qualifies as "hazardous." The bulk of such material would come under the purview of EPA RCRA regulations, resulting in dual regulation of the tailings impoundment. To preclude this dual regulatory authority and the complications resulting from it, including potential conflicts in requirements, the staff will not approve co-disposal of non-11e.(2) byproduct material containing hazardous constituents, regulated under RCRA.

6.2 Custody and Title Transfer

UMTRCA, title II, section 202 (Section 83 of the AEA) stipulates that such title to the 11e.(2) byproduct material and to the land used for the disposal of 11e.(2) byproduct material shall be transferred to either the United States Government or to the State in which the land is located. UMTRCA identifies DOE, or any other agency so designated by the President, to be the custodial agency for the U.S. Government. However, at its option, the State may elect to become the custodial licensee of the site after closure.

The NRC staff has two concerns relating to this transfer:

a. The licensee for any site where the materials would be commingled would need strong assurances or permission from either the State or DOE that the commingling would not compromise the eventual transfer of title and custody.

b. The license cannot be legally terminated, unless the custody and title have been transferred as stipulated in Section 83 b(1)(A) of the AEA. Commingling of wastes could complicate this transfer and, hence, the termination of the license.

Because of these concerns, NRC staff wrote to DOE regarding its position on such transfers. DOE's response of June 10, 1988, indicated its uncertainty regarding authority to accept custodial transfer of tailings sites, where radioactive material not constituting 11e.(2) byproduct material has been commingled. In further correspondence, of October 5, 1988, and March 16, 1990, the NRC staff requested more specificity from DOE.

DOE's initial responses addressed the general issue of DOE acceptance of a Title II site containing non-11e.(2) byproduct material. DOE would have no objection to such a transfer provided it would not incur any additional costs related to the non-11e.(2) byproduct material. To ensure that there would be no additional costs due to the non-11e.(2) byproduct material, DOE suggested that NRC make the following findings before transfer:

—That there is no adverse environmental impact resulting from the dispoal of these wastes (e.g., that the reclamation of the impoundment will not be impacted or that there are no groundwater restoration issues).

—There are no outstanding environmental compliance issues under any applicable environmental law (e.g., under RCRA or CERCLA).

These conditions will be met if the first three conditions (a-c) discussed in section 5, above, are demonstrated.

By letter dated January 23, 1991, DOE responded to five specific questions NRC staff had raised. The questions focused on the quantities and concentrations of several categories of non-11e.(2) byproduct material that DOE would find acceptable to dispose of in tailings impoundments without jeopardizing title transfer. DOE's response stated that criteria for determining acceptability should consider three issues:

a. Concentrations of hazardous constituents in the non-11e.(2) byproduct materials.

Tables showing concentrations typically found in tailings were presented and the statement made that acceptable concentrations could be

selected from those tables. DOE also recommended that if concentrations in the non-11e.(2) byproduct material exceed those "* * * adopted from the tables (or other sources) * * *," a risk assessment be performed.

Thus, DOE described a process, with an ultimate resort to risk assessment, that could be used to determine acceptable concentrations of constituents in non-11e.(2) byproduct materials. The first demonstration, discussed in Section 5, above (that the disposal have no significant additional effects on public safety and health and the environment), encompasses this DOE consideration. Thus, this consideration will be met if the 1988 staff guidance is adhered to.

b. Impact of the additional material quantity (volume) of non-11e.(2) byproduct materials that the Title II site would have to accommodate.

DOE stated that this determination would have to be made on a site-specific basis, considering cost, schedule, design capacity of the impoundment, and the impact of errors and uncertainties in these projections and estimates. This consideration will be satisfied by the first two demonstrations discussed in section 5 above.

c. Possibility that Radon-222 releases from the disposal site would exceed the limits specified in 40 CFR 192.32, as a result of including non-11e.(2) byproduct materials in the title II site.

The Radon-222 release limits in 40 CFR 192.32 are incorporated in Criterion 6 of 10 CFR part 40, appendix A. Thus, this consideration will be satisfied by the second demonstration discussed in section 5 above.

Therefore, demonstration of the first three findings discussed in section 5 above (health and safety, compliance with appendix A, and no RCRA problems), should result in the fourth finding (DOE acceptance of title) being met. However, there is one remaining concern related to DOE's acceptance of title to tailings impoundments containing non-11e.(2) byproduct material. None of DOE's response to NRC on this question contains an unequivocal statement that, if NRC determines that the above discussed concerns and criteria are satisfied, DOE will accept title to such a site. For example, in the letter of November 6, 1990, DOE states "At this time, we would interpose no objection if NRC transferred * * *." At a meeting on December 11, 1990, NRC staff discussed this issue with DOE and a possible DOE concurrence on individual NRC decisions to allow non-11e.(2) byproduct material disposals. DOE responded by letter dated December 24, 1990, that its concurrence would not be appropriate or necessary. However, in order to reduce the potential for future problems with transfer to DOE, NRC staff will notify DOE (with an opportunity to provide comments) of each impending decision to allow non-11e.(2) byproduct material disposal in a tailings impoundment.

6.3 Acceptable Wastes

As discussed in section 4 above, most of the requests for commingling non-11e.(2) byproduct material in tailings impoundments pertain to material similar to uranium mill tailings and wastes. These are usually bulk materials like soil, crushed rock, or sludges contaminated with low concentrations of source material or NARM.

For the reasons discussed in section 5 above, the staff will not approve commingling of NARM in tailings impoundments. However, current staff policy is to consider on a case-specific basis, wastes generated by operations regulated under the AEA. This would allow consideration of byproduct, as defined in section 11e.(1) of the AEA, and special nuclear materials (SNM) wastes, in addition to source material waste, for disposal in tailings impoundments. Recently, there have been inquiries to the staff about disposal of SNM-contaminated soils in tailings impoundments. For the reasons discussed below, NRC staff will not normally approve disposal of 11e.(1) byproduct material (hereafter referred to as "byproduct material") or of SNM in tailings impoundments.

Appendix A of 10 CFR part 40 presents criteria for the disposal of 11e.(2) byproduct material. These criteria, to properly dispose of this material, were developed based on the physical, chemical, and radiological characteristics of the material. The basis for most of the requests to commingle non-11e.(2) byproduct material in tailings impoundments is that the proposed material is similar in characteristics to 11e.(2) byproduct material, but does not meet the definition, which is based on process and history, rather than characteristics. Because of this similarity to 11e.(2) byproduct material, the criteria in appendix A are appropriate to use, to ensure safe disposal of this material.

This premise is only valid for the types of materials discussed in section 4, that is, bulk material whose primary radiological contamination is uranium, thorium, and radium in low concentrations. Wastes contaminated with byproduct material are sufficiently different that this premise may not be valid.

Soils contaminated with SNM may be similar to 11e.(2) byproduct material in physical, chemical, and radiological characteristics. There are, however, issues related to the disposal of byproduct material or SNM-contaminated soils in tailings impoundments that preclude routine approval, using the criteria in appendix A of 10 CFR part 40. Possession of byproduct material or SNM would have to be licensed under 10 CFR part 30 or 70, respectively, and not part 40. For SNM, the issues of criticality, material control and accountability, and site security might also have to be addressed.

For these reasons, the staff will not approve the disposal of byproduct material or SNM through the process discussed in this guidance and analysis. If there is a compelling reason, such as an immediate health and safety concern, to consider a specific proposed disposal of byproduct material or SNM in a tailings impoundment, approval of the Commission will be required.

6.4 Regulatory Issues

There are two regulatory issues that require consideration in developing this guidance:

a. Inasmuch as the kind of material under consideration is within the purview of the States under the Low Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPAA), the explicit approval of both the originating and the receiving Compact should be obtained if the waste is going anywhere but a designated Regional facility. Although this is not specifically a health and safety issue, it is an issue that could cause problems for the licensee and perhaps interfere with ultimate reclamation of the tailings. As a result, the policy should include a requirement that the licensee's submittal provide evidence of the Compacts' approval of the proposed disposal.

b. The material being proposed for disposal in tailings impoundments is material subject to the Commission's authority under the Atomic Energy Act. It is mostly, if not all, soil contaminated with uranium, thorium, and associated radium (which is a decay product of uranium and thorium) with radiological characteristics similar to those of tailings (11e.(2) byproduct material). The disposal of such material is regulated by 10 CFR 20.301 (10 CFR 20.2001 in the new part 20). That section states that no licensee shall dispose of licensed material except by (a) transfer to an authorized recipient as provided in 10 CFR part 30, 40, 60, 61, 70, or 72; or (b) disposal authorized pursuant to § 20.302

contention must be one which, if proven, would entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

Since the Commission has made a final determination that the amendment involves no significant hazards consideration, if a hearing is requested, it will not stay the effectiveness of the amendment. Any hearing held would take place while the amendment is in effect.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Services Branch, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC 20555, by the above date. Where petitions are filed during the last ten (10) days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at 1-(800) 325-6000 (in Missouri 1-(800) 3428700). The Western Union operator should be given Datagram Identification Number 3737 and the following message addressed to (Project Director): petitioner's name and telephone number, date petition was mailed, plant name, and publication date and page number of this Federal Register notice. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to the attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

Duquesne Light Company, et. al., Docket No. 50-412, Beaver Valley Power Station, Unit 2, Shippingport, Pennsylvania

Date of amendment request: January 13, 1992

Description of amendment request: The amendment revises Table 3.2-1 of Technical Specification 3.2.5, "DNB Parameters." Specifically, it lowers the value for the minimum required reactor coolant system (RCS) total flow rate from 274,800 gpm to 270,850 gpm and lowers the flow measurement uncertainty value, specified in the footnote, from 3.5% to 2.0%.

Date of issuance: April 23, 1992

Effective date: April 23, 1992

Amendment No.: 45

Facility Operating License No. NPF-73. Amendment revised the Technical Specifications. Public comments requested as to proposed no significant hazards consideration: No. The Commission's related evaluation of the amendment, finding of emergency circumstances, and final determination of no significant hazards consideration are contained in a Safety Evaluation dated April 23, 1992.

Local Public Document Room location: B. F. Jones Memorial Library, 663 Franklin Avenue, Aliquippa, Pennsylvania 15001.

Attorney for licensee: Gerald Charnoff, Esquire, Jay E. Silberg, Esquire, Shaw, Pittman, Potts & Trowbridge, 2300 N Street, NW., Washington, DC 20037.

NRC Project Director: John F. Stolz

Dated at Rockville, Maryland, this 5th day of May 1992.

For the Nuclear Regulatory Commission

Steven A. Varga,

Director, Division of Reactor Projects - I/II, Office of Nuclear Reactor Regulation

[Doc. 92-11099 Filed 5-12-92; 8:45 am]

BILLING CODE 7590-01-F

Uranium Mill Facilities, Request for Public Comments on Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments and Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores

AGENCY: Nuclear Regulatory Commission.

ACTION: Request for public comment.

SUMMARY: The Nuclear Regulatory Commission (NRC) is soliciting public comment on two guidance documents: "Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, section 11e.(2) Byproduct Material in Tailings Impoundments" and "Position ad Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores," along with the associated staff analyses.

DATES: The comment period expires June 12, 1992.

ADDRESSES: Send written comments to Chief, Rules and Directives Review Branch, U.S. Nuclear Regulatory Commission, Washington, DC 20555, or hand deliver to 7920 Norfolk Avenue, Bethesda, MD, between 7:45 a.m. and 4:15 p.m. on Federal workdays.

FOR FURTHER INFORMATION CONTACT: Myron Fliegel, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555; telephone (301) 504-2555.

SUPPLEMENTARY INFORMATION:

Discussion

NRC staff has prepared a revision to its licensing guidance, issued July 27, 1988, on the disposal of material other than that defined in section 11e.(2) of the Atomic Energy Act of 1954 (AEA), as amended, in uranium mill tailings impoundments (Part A of the Supplementary Information). The staff has also prepared new licensing guidance on the processing of feed materials other than natural ores in uranium mills (Part B of the Supplementary Information). In developing the guidance, staff analyzed the policy and legal issues involved for each guidance document. In order to solicit input all interested parties on the issues associated with these guidance documents, the NRC is soliciting comments from the public, the Environmental Protection Agency, NRC Agreement States, and regional low-level waste compacts. Comments received will be considered in deciding whether the guidance documents should be revised.

In the guidance documents and associated staff analyses, the term "non-11e.(2) byproduct material" is used to refer to radioactive waste that is similar in physical and radiological characteristics (for example, low specific activity) to byproduct material, as defined in Section 11e.(2) of the AEA but does not meet the definition in that section because it is not derived from ore processed primarily for its source material content.

The staff analyses in Parts A and B contain additional definitions and extensive background information necessary to understand the summary guidance documents. The reader should consult the analyses for the terms and issues presented in context.

Part A—Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments

1. In reviewing licensee requests for the disposal of source material wastes that have radiological characteristics comparable to those of Atomic Energy Act (AEA) of 1954, section 11e.(2) byproduct material (hereafter designed as "11e(2) byproduct material") in tailings impoundments, staff will follow the guidance set forth below. Licensing of the receipt and disposal of such non-AEA, section 11e.(2) byproduct material [hereafter designated as "non-11e.(2) byproduct material"] should be done under 10 CFR Part 40.

2. Naturally occurring and accelerator produced material waste shall not be authorized for disposal in an 11e.(2) byproduct material impoundment.

3. Special nuclear material and Section 11e.(1) product material waste should not be considered as candidates for disposal in a tailings impoundment, without compelling reasons to the contrary. If staff believes that such material should be disposed of in a tailings impoundment in a specific instance, a request for approval by the Commission should be prepared.

4. The 11e.(2) licensee must demonstrate that the material is not subject to applicable Resource Conservation and Recovery Act regulations or other U.S. Environmental Protection Agency standards for hazardous or toxic wastes prior to disposal.

5. The 11e(2) licensee must demonstrate that there are no Comprehensive Environmental Response, Compensation and Liability Act issues related to the disposal of the non-11e(2) byproduct material.

6. The 11e.(2) licensee must demonstrate that there will be no significant environmental impact from disposing of this material.

7. The 11e.(2) license must demonstrate that the proposed disposal will not compromise the reclamation of the tailings impoundment by demonstrating compliance with the reclamation and closure criteria of appendix A of 10 CFR part 40.

8. The 11e.(2) licensee must provide documentation showing approval by the Regional Low-Level Waste Compact in whose jurisdiction the waste originates as well as approval by the Compact in whose jurisdiction the disposal site is located.

9. The Department of Energy should be informed of the Nuclear Regulatory Commission findings and proposed action, with an opportunity to provide comments within 30 days, before granting the license amendment to the 11e.(2) licensee.

10. The mechanism to authorize the disposal of non-11e.(2) byproduct material in a tailings impoundment is an amendment to the mill license under 10 CFR Part 40, authorizing the receipt of the material and its disposal. Additionally, an exemption to the requirements of 10 CFR Part 61, under the authority of § 61.6, must be granted. The license amendment and the § 61.6 exemption should be supported with a staff analysis paper addressing the issues discussed in this guidance.

NRC Staff Analysis of Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments

1. Introduction

Recently, the Nuclear Regulatory Commission (NRC) received several requests to allow activities other than the normal processing of native uranium ore at licensed uranium milling facilities. We have, in the past, received, and, in some cases, approved, similar requests. These requests have fallen into two categories. The first category of requests is to allow the processing of feedstock material that is not usually thought of as ore, for the extraction of uranium, and then dispose of the resulting wastes and tailings in the facility's tailings pile. The second category of requests is to allow the direct disposal of non-Atomic Energy Act (AEA) of 1954, section 11e.(2) byproduct material [1] [hereafter designated as "non-11e.(2) byproduct material"], that was not generated onsite, into tailings piles.

In assessing these requests, the staff has raised two policy concerns related to tailings piles. The first concern is that the requested activity might result in complicated, dual, or even multiple regulation of the tailings pile, and the second concern is that the requested activity might jeopardize the ultimate transfer to the United States Government, for perpetual custody and maintenance, of the reclaimed tailings pile.

This analysis addresses the second category of requests, that is, requests to dispose of non-11e.(2) byproduct material in tailings piles. Issues relating to such proposals requesting regulatory consideration of commingling of tailings with other radioactive wastes are discussed. This analysis is limited to options involving commingling with existing tailings impoundments.

2. Background

The Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 amended the AEA to specifically include uranium and thorium mill tailings and other wastes from the process as radioactive material to be licensed by NRC. Specifically, the definition of byproduct material was revised in Section 11e.(2) of the AEA, to include ". . . the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content."

The definition of byproduct material [2] in Section 11e.(2) of the AEA includes all the wastes resulting from the milling process, not just the radioactive components. In addition, Title II of UMTRCA amended the AEA to explicitly exclude the requirement for the Environmental Protection Agency (EPA) to permit 11e.(2) byproduct material under the Resource Conservation and Recovery Act (RCRA). The designation of 11e.(2) byproduct material contrasts significantly with the situation for source material [3] and other radioactive materials controlled under the authority of the AEA. This possibility for dual regulation by both NRC and EPA can become an issue when dealing with mixed hazardous wastes. As a result of UMTRCA, NRC amended 10 CFR Part 40 to regulate the uranium and thorium tailings and wastes from the milling process. Thus, under normal operation, all the tailings and wastes in an NRC or Agreement State licensed mill producing uranium or thorium are classified as "11e.(2) byproduct material," and are disposed of in tailings piles regulated under Part 40. They are not subject to EPA regulation, under RCRA. However, the EPA Clean Air Act regulations still result in direct EPA permit authority over the mill tailings, whether or not they are commingled with non-11e.(2) byproduct material waste.

The UMTRCA also required and provided for long-term custody and surveillance of the byproduct material and the land use for its disposal. The Department of Energy (DOE) is the Federal agency currently designated as

[1] For the purposes of this analysis, the term "non-11e.(2) byproduct material" will be used to refer to radioactive waste that is similar to byproduct material, as defined in the AEA in section 11e.(2), but is not legally considered to be 11e.(2) byproduct material.

[2] Henceforth, byproduct material as defined in Section 11e.(2) of the AEA will be referred to as "11e.(2) byproduct material."

[3] Except in the case of source material ore, source material consists only of the radioactive components of the waste, that is: uranium, thorium, or any combination of the two [10 CFR 40.4(h)].

the "custodial agency" by the AEA. However, the UMTRCA specifically referred only to 11e.(2) byproduct material. UMTRCA contains no provision allowing for the transfer of custody or title, and hence for eventual long-term custody and surveillance of other material, even if the material were no more radioactive or toxic than the uranium or thorium tailings themselves.

3. The Category of Requests for Commingled Disposal To Be Addressed

Some licensees have proposed to directly dispose of radioactive wastes in existing uranium mill tailings sites. The materials vary from tailings from extraction processes for metals and rare-earth metals [such as copper, tantalum, columbium, zirconium] to spent resins from water-treatment processes. However, because these materials did not result from the extraction or concentration of uranium or thorium from ore, they are not 11e.(2) byproduct material. Many of these "orphaned" wastes have elevated concentrations of source material, and unless otherwise exempted, require licensed control. If the materials exceed the 0.05-percent licensable (content of source material by weight) criterion in 10 CFR Part 40. Some of the wastes proposed for commingling contain radioactive material, not regulated by NRC, that classify as naturally-occurring and accelerator-produced radioactive material (NARM) and as such cannot be easily disposed of. In most of the proposals the staff has seen, disposal of these materials in tailings impoundments would not significantly increase the effect on the public health, safety, and environment. Because of the relatively large volumes of these wastes, low-level waste disposal options are limited. These wastes are similar to tailings in volume, radioactivity, and toxicity. Therefore, some waste producers see the mill tailings disposal sites as providing an economical option for such disposal.

4. Types of Wastes Being Proposed for Disposal Into Tailings Piles

The NRC and the Agreement States continue to receive requests for the direct disposal of non-11e.(2) byproduct material into uranium mill tailings piles. The following general categories of non-11e.(2) byproduct material illustrate the requests submitted to NRC and the Agreement States for disposal into uranium mill tailings piles licensed under authority established by title II of UMTRCA:

4.1 Mine Wastes

To mine uranium or other source material ore from underground or open-pit mines, operators frequently need to dewater the mine cavities. This results in quantities of mine water with suspended or dissolved constituents, some of which are source material. After processing the mine water to satisfy National Pollution Discharge Elimination System or other release requirements, the resultant clean mine water is then discharged offsite. In some cases, the resulting water-treatment filter-cake or sludge residues exceed the 0.05-percent licensable limit for source material. These residues do not satisfy the definition of 11e.(2) byproduct material, because they do not result from the extraction or concentration of uranium or thorium from ore.

NRC and the Agreement States have been contacted by licensees and waste generators that desire to dispose of such filter-cake or sludge residue directly into the tailings piles at licensed uranium mill tailings sites. NRC has indicated that such material does not constitute 11e.(2) byproduct material.

4.2 Secondary Process Wastes

Frequently, natural ores that are processed for rare-earth or other metals have significant concentrations of radioactive elements. Examples include copper, zirconium, and vanadium ores. Sometimes the uranium is captured in a side-stream recovery operation, in which uranium is precipitated out of the pregnant solution, before or after the rare earth or other metal. Although this side-stream recovery operation is licensed by NRC, the tailings (which consist of the crushed depleted ore and the depleted solution after recovery of metals and rare earths) are not 11e.(2) byproduct material. This is because the ore was not processed primarily for its source material content, but for the rare earth or other metal. If the tails contain greater than 0.05 percent uranium and thorium, they would be source material and would thus be licensable and have to be disposed of in compliance with NRC regulations. NRC has received requests from NRC and Agreement State licensees to dispose of such tailings (resulting from processes to extract other metals) into licensed uranium mill tailings piles.

4.3 Formerly Utilized Sites Remedial Action Program (FUSRAP)

These sites primarily processed material, such as monazite sands, to extract thorium for commercial applications. Government contracts were issued for thorium source material used in the Manhattan Engineering District and early Atomic Energy Commission programs. Wastes resulting from that processing and disposed of at these sites would qualify as 11e.(2) byproduct material. However, it is not clear that all the contaminated material at these sites result from processing of ore for thorium. At some sites there was also processing for rare earths and other metals. The DOE, which accepts responsibility for the FUSRAP materials, is investigating options for disposal and control of these materials. DOE estimates that a total of 1.7 million cubic yards of material is located at sites in 13 States. Recent proposals have considered the transportation of FUSRAP materials from New Jersey to tailing piles at uranium mills in other States, such as Utah, Washington, and Wyoming.

4.4 NARM

These wastes result from a wide range of operations, but are not generally regulated by the AEA. Past requests for disposal in uranium mill tailing ponds have included contaminated resins from ion-exchange well-water purifying operations. NRC has also received inquiries regarding the disposal of construction scrap and radium-contaminated soil from old commercial operations. The individual States usually administer the regulatory responsibility over NARM, but many other Federal agencies have jurisdictional responsibilities related to NARM. These include EPA, the Consumer Product Safety Commission, the Department of Health and Human Services, and the Department of Labor. There is a State-licensed NARM disposal facility in Clive, Utah, licensed to Envirocare of Utah, Inc.

Two common elements run through most of the requests we have received for direct disposal of non-11e.(2) byproduct material in tailings piles: the material is of low specific-activity, and the material is physically similar to 11e.(2) byproduct material. Most of the requests are for bulk material like soil, crushed rock, or sludges, contaminated with source material in relatively low concentrations.

5. Previous Staff Guidance

In response to a request from Region IV, the Director of the Office of Nuclear Material Safety and Safeguards (NMSS) provided guidance for addressing requests to allow the disposal of non-11e.(2) byproduct material in licensed mill tailings impoundments. The staff considered that the types of material proposed for such disposal could be

separated into two categories: (1) NARM wastes; and (2) wastes generated by operations regulated under the AEA.

In the guidance, the staff concluded that it would not approve a policy of allowing disposal of NARM wastes in tailings impoundments. A major concern was that NRC did not have authority to regulate NARM. If States or EPA became involved in regulation of NARM, a situation with duplicative jurisdiction with respect to the commingled radioactive materials could be created. Furthermore, the Commission's authority, under section 84c of the AEA, to approve alternatives to requirements, if the NARM wastes were to violate standards, would be impaired.

The staff viewed the other category, wastes generated by operations regulated under the AEA, as potentially acceptable in a mill tailings impoundment. Each such proposal should be considered on a case-specific basis. The guidance identified four findings that would have to be made before NRC would authorize such disposal.

As a result of this guidance, present policy is that NRC will approve of proposed disposals of source material on their individual merits, and only if the licensee can demonstrate the following:

a. The disposal will have no significant additional effects on public safety and health, and the environment.

b. The disposal will not compromise the reclamation of the tailings impoundment. In effect, disposal must comply with the reclamation and closure criteria in part 40, appendix A.

c. The disposal will not result in the tailing becoming subject to RCRA or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

d. DOE or the State agrees, in advance, to take title to the site, upon completion of the reclamation.

The first two conditions are self-evident and will not be discussed further. The other two conditions can be sufficient obstacles to any routine decisions to allow such commingling of byproduct and non-11e.(2) byproduct materials under UMTRCA, and are discussed, along with other issues, below.

6. Major Issues

Although the technical, economic and societal advantages in some proposals have appeared to encourage such disposal of low specific-activity radioactive material into tailing piles, significant statutory and regulatory issues may complicate such disposal:

6.1 RCRA Authority and Mixed Waste

The NRC and Agreement State licensed uranium and thorium milling facilities do not fall under the jurisdiction of RCRA. The AEA explicitly excludes 11e.(2) byproduct material from RCRA permitting. However, radioactive wastes that are not 11e.(2) byproduct material and contain hazardous wastes are mixed wastes and are not exempted from RCRA. Commingling RCRA-regulated wastes with tailings could result in the application of the EPA RCRA regulations and separate EPA-permitting authority. The licensee would have to comply with both EPA- and AEA-related regulations.

NRC has revised the regulations in 10 CFR part 40 (including appendix A) to conform to the appropriate portions of EPA's RCRA regulations. The UMTRCA, as amended, stipulates that regulations for byproduct material be consistent with the Solid Waste Disposal Act (SWDA). On November 13, 1987, NRC conformed the regulations of part 40 to the EPA standards containing the RCRA provisions of the SWDA. However, if a licensee disposes of source material compounds or mixtures other than uranium or thorium ores, in the tailings piles, only the source material component of that compound or mixture would be excluded from the provisions of RCRA, if the compound or mixture qualifies as "hazardous." The bulk of such material would come under the purview of EPA RCRA regulations, resulting in dual regulation of the tailings impoundment. To preclude this dual regulatory authority and the complications resulting from it, including potential conflicts in requirements, the staff will not approve co-disposal of non-11e.(2) byproduct material containing hazardous constituents, regulated under RCRA.

6.2 Custody and Title Transfer

UMTRCA, title II, section 202 (Section 83 of the AEA) stipulates that such title to the 11e.(2) byproduct material and to the land used for the disposal of 11e.(2) byproduct material shall be transferred to either the United States Government or to the State in which the land is located. UMTRCA identifies DOE, or any other agency so designated by the President, to be the custodial agency for the U.S. Government. However, at its option, the State may elect to become the custodial licensee of the site after closure.

The NRC staff has two concerns relating to this transfer:

a. The licensee for any site where the materials would be commingled would need strong assurances or permission from either the State or DOE that the commingling would not compromise the eventual transfer of title and custody.

b. The license cannot be legally terminated, unless the custody and title have been transferred as stipulated in Section 83 b(1)(A) of the AEA. Commingling of wastes could complicate this transfer and, hence, the termination of the license.

Because of these concerns, NRC staff wrote to DOE regarding its position on such transfers. DOE's response of June 10, 1988, indicated its uncertainty regarding authority to accept custodial transfer of tailings sites, where radioactive material not constituting 11e.(2) byproduct material has been commingled. In further correspondence, of October 5, 1988, and March 16, 1990, the NRC staff requested more specificity from DOE.

DOE's initial responses addressed the general issue of DOE acceptance of a Title II site containing non-11e.(2) byproduct material. DOE would have no objection to such a transfer provided it would not incur any additional costs related to the non-11e.(2) byproduct material. To ensure that there would be no additional costs due to the non-11e.(2) byproduct material, DOE suggested that NRC make the following findings before transfer:

—That there is no adverse environmental impact resulting from the dispoal of these wastes (e.g., that the reclamation of the impoundment will not be impacted or that there are no groundwater restoration issues).

—There are no outstanding environmental compliance issues under any applicable environmental law (e.g., under RCRA or CERCLA).

These conditions will be met if the first three conditions (a-c) discussed in section 5, above, are demonstrated.

By letter dated January 23, 1991, DOE responded to five specific questions NRC staff had raised. The questions focused on the quantities and concentrations of several categories of non-11e.(2) byproduct material that DOE would find acceptable to dispose of in tailings impoundments without jeopardizing title transfer. DOE's response stated that criteria for determining acceptability should consider three issues:

a. Concentrations of hazardous constituents in the non-11e.(2) byproduct materials.

Tables showing concentrations typically found in tailings were presented and the statement made that acceptable concentrations could be

selected from those tables. DOE also recommended that if concentrations in the non-11e.(2) byproduct material exceed those "* * * adopted from the tables (or other sources) * * *," a risk assessment be performed.

Thus, DOE described a process, with an ultimate resort to risk assessment, that could be used to determine acceptable concentrations of constituents in non-11e.(2) byproduct materials. The first demonstration, discussed in Section 5, above (that the disposal have no significant additional effects on public safety and health and the environment), encompasses this DOE consideration. Thus, this consideration will be met if the 1988 staff guidance is adhered to.

b. Impact of the additional material quantity (volume) of non-11e.(2) byproduct materials that the Title II site would have to accommodate.

DOE stated that this determination would have to be made on a site-specific basis, considering cost, schedule, design capacity of the impoundment, and the impact of errors and uncertainties in these projections and estimates. This consideration will be satisfied by the first two demonstrations discussed in section 5 above.

c. Possibility that Radon-222 releases from the disposal site would exceed the limits specified in 40 CFR 192.32, as a result of including non-11e.(2) byproduct materials in the title II site.

The Radon-222 release limits in 40 CFR 192.32 are incorporated in Criterion 6 of 10 CFR part 40, appendix A. Thus, this consideration will be satisfied by the second demonstration discussed in section 5 above.

Therefore, demonstration of the first three findings discussed in section 5 above (health and safety, compliance with appendix A, and no RCRA problems), should result in the fourth finding (DOE acceptance of title) being met. However, there is one remaining concern related to DOE's acceptance of title to tailings impoundments containing non-11e.(2) byproduct material. None of DOE's response to NRC on this question contains an unequivocal statement that, if NRC determines that the above discussed concerns and criteria are satisfied, DOE will accept title to such a site. For example, in the letter of November 6, 1990, DOE states "At this time, we would interpose no objection if NRC transferred * * *." At a meeting on December 11, 1990, NRC staff discussed this issue with DOE and a possible DOE concurrence on individual NRC decisions to allow non-11e.(2) byproduct material disposals. DOE responded by letter dated December 24, 1990, that its concurrence would not be appropriate or necessary. However, in order to reduce the potential for future problems with transfer to DOE, NRC staff will notify DOE (with an opportunity to provide comments) of each impending decision to allow non-11e.(2) byproduct material disposal in a tailings impoundment.

6.3 Acceptable Wastes

As discussed in section 4 above, most of the requests for commingling non-11e.(2) byproduct material in tailings impoundments pertain to material similar to uranium mill tailings and wastes. These are usually bulk materials like soil, crushed rock, or sludges contaminated with low concentrations of source material or NARM.

For the reasons discussed in section 5 above, the staff will not approve commingling of NARM in tailings impoundments. However, current staff policy is to consider on a case-specific basis, wastes generated by operations regulated under the AEA. This would allow consideration of byproduct, as defined in section 11e.(1) of the AEA, and special nuclear materials (SNM) wastes, in addition to source material waste, for disposal in tailings impoundments. Recently, there have been inquiries to the staff about disposal of SNM-contaminated soils in tailings impoundments. For the reasons discussed below, NRC staff will not normally approve disposal of 11e.(1) byproduct material (hereafter referred to as "byproduct material") or of SNM in tailings impoundments.

Appendix A of 10 CFR part 40 presents criteria for the disposal of 11e.(2) byproduct material. These criteria, to properly dispose of this material, were developed based on the physical, chemical, and radiological characteristics of the material. The basis for most of the requests to commingle non-11e.(2) byproduct material in tailings impoundments is that the proposed material is similar in characteristics to 11e.(2) byproduct material, but does not meet the definition, which is based on process and history, rather than characteristics. Because of this similarity to 11e.(2) byproduct material, the criteria in appendix A are appropriate to use, to ensure safe disposal of this material.

This premise is only valid for the types of materials discussed in section 4, that is, bulk material whose primary radiological contamination is uranium, thorium, and radium in low concentrations. Wastes contaminated with byproduct material are sufficiently different that this premise may not be valid.

Soils contaminated with SNM may be similar to 11e.(2) byproduct material in physical, chemical, and radiological characteristics. There are, however, issues related to the disposal of byproduct material or SNM-contaminated soils in tailings impoundments that preclude routine approval, using the criteria in appendix A of 10 CFR part 40. Possession of byproduct material or SNM would have to be licensed under 10 CFR part 30 or 70, respectively, and not part 40. For SNM, the issues of criticality, material control and accountability, and site security might also have to be addressed.

For these reasons, the staff will not approve the disposal of byproduct material or SNM through the process discussed in this guidance and analysis. If there is a compelling reason, such as an immediate health and safety concern, to consider a specific proposed disposal of byproduct material or SNM in a tailings impoundment, approval of the Commission will be required.

6.4 Regulatory Issues

There are two regulatory issues that require consideration in developing this guidance:

a. Inasmuch as the kind of material under consideration is within the purview of the States under the Low Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPAA), the explicit approval of both the originating and the receiving Compact should be obtained if the waste is going anywhere but a designated Regional facility. Although this is not specifically a health and safety issue, it is an issue that could cause problems for the licensee and perhaps interfere with ultimate reclamation of the tailings. As a result, the policy should include a requirement that the licensee's submittal provide evidence of the Compacts' approval of the proposed disposal.

b. The material being proposed for disposal in tailings impoundments is material subject to the Commission's authority under the Atomic Energy Act. It is mostly, if not all, soil contaminated with uranium, thorium, and associated radium (which is a decay product of uranium and thorium) with radiological characteristics similar to those of tailings (11e.(2) byproduct material). The disposal of such material is regulated by 10 CFR 20.301 (10 CFR 20.2001 in the new part 20). That section states that no licensee shall dispose of licensed material except by (a) transfer to an authorized recipient as provided in 10 CFR part 30, 40, 60, 61, 70, or 72; or (b) disposal authorized pursuant to § 20.302

(20.2002) or part 61. Part 61 provides regulations for the disposal of radioactive waste received from others, while § 20.302 (20.2002) allow for disposal by a licensee of licensed material in a manner not otherwise authorized in the regulations.

Since the material proposed for disposal in tailings impoundments will be received from licensees other than the impoundment owner, 10 CFR part 61 is the appropriate regulation for such disposal. Disposal under § 20.302 has been used by licensees to dispose of their own wastes onsite. It does not preclude disposal of radioactive waste received from others. Section 20.2002 (in the new part 20), however, specifically limits disposals under that Part to licensed material generated in the licensee's activities, so it could not be used for the disposals discussed in this paper. The new Part 20 became effective on June 20, 1991, with discretion by licensees to defer implementation until January 1, 1993 (however, the Commission has under consideration a proposal to change the discretionary implementation date to January 1, 1994).

Thus, in order to allow disposal of non-11e.(2) byproduct material at a tailings impoundment, either a part 61 review would have to be performed and a license under 10 CFR part 61 would have to be issued to the mill operator, or an exemption to such a review and license would have to be granted. The part 61 license to allow disposal of the non-11e.(2) byproduct material in the tailings impoundment would be in addition to the amendment to the part 40 license authorizing receipt of the material.

The basic objectives of parts 40 and 61 are the same: protection of public health and safety and the environment by disposal that controls and isolates the wastes for long periods of time. Part 61.6 of title 10 allows for exemptions from the requirements of Part 61 if such an exemption will not endanger life or property. In order to avoid separate part 40 and 61 reviews and licenses for the disposal of non-11e.(2) byproduct material in tailings impoundments, an exemption under Part 61.6 will be granted for each such proposed commingling that meets all of the other requirements discussed in this analysis. The basis for such an exemption is that the proposed disposal will not endanger life and property by virtue of its meeting the criteria discussed in this analysis (which includes demonstrating that the reclamation and closure criteria in appendix A to part 40 will be met).

7. Results of Staff Analysis

NRC staff identified the following course of action with respect to requests for direct disposal of non-11e.(2) byproduct material in tailings impoundments:

1. Each proposal will be treated on its individual merits.

2. The guidance discussed in section 5, will be followed. Specifically, for each such co-disposal request, the staff will:

a. Reject the request if the non-11e.(2) byproduct material is NARM waste.

b. Determine whether the request is for bulk material contaminated with low concentrations of source material. If the request is for byproduct material or SNM, determine if there is a compelling reason, such as an immediate health and safety concern, to grant the request. If so, a specific request for approval by the Commission will be prepared.

c. Determine whether the proposed disposal will cause significant additional effects to public safety, health and the environment.

d. Determine whether the proposed disposal will compromise the reclamation of the tailings impoundment by determining whether compliance with the reclamation and closure criteria stated in 10 CFR part 40, appendix A, will be ensured.

e. Not approve the request if the non-11e.(2) byproduct material contains hazardous constituents regulated under RCRA.

f. Notify DOE (with an opportunity to provide comments) if the staff intends to approve the proposed disposal.

g. The licensee must provide documentation showing approval by the Regional LLW Compact in whose jurisdiction the waste originates as well as approved by the Compact in whose jurisdiction the disposal site is located.

3. Approval of the request will be accomplished through an amendment to the part 40 license of the impoundment owner.

Part B—Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores

Staff reviewing licensee requests to process alternate feed material (material other than natural ore) in uranium mills should follow the guidance presented below. Besides reviewing to determine compliance with appropriate aspects of appendix A of 10 CFR part 40, the staff should also address the following issues:

1. Determination of Whether the Feed Material Is Ore

For the tailings and wastes from the proposed processing to qualify as 11e.(2) byproduct material, the feed material must qualify as "ore." In determining whether the feed material is ore, the following definition of ore must be used:

Ore is a natural or native matter that may be mined and treated for the extraction of any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill.

2. Determination of Whether the Feed Material Is Mixed Waste

Note to Federal Register notice readers: For further explanation of this complex issue, see the discussion section of the Staff Analysis that follows.

If the proposed feed material were hazardous or mixed waste, it would be subject to EPA regulation under RCRA. To avoid the complexities of NRC/EPA dual regulation, such feed material will not be approved for processing at a licensed mill. If the licensee can show that the proposed feed material would not be a hazardous or mixed waste, if not proposed for processing at the mill, this issue is resolved.

Feed material exhibiting only a characteristic of hazardous waste (ignitable, corrosive, reactive, toxic) would not be regulated as hazardous waste and could therefore be approved for recycling and extraction of source material. However, this does not apply to residues from water treatment, so acceptance of such residues as feed material will depend on their not being hazardous or mixed waste. Additionally, if proposed feed material contained a waste listed under Subpart D (261.30–33) of 40 CFR, it would be a hazardous waste and should not be approved.

3. Determination of Whether the Ore Is Being Processed Primarily for Its Source-Material Content

For the tailings and waste from the proposed processing to qualify as 11e.(2) byproduct material, the ore must be processed primarily for its source-material content. There is concern that wastes that would have to be disposed of as radioactive or mixed waste would be proposed for processing at a uranium mill primarily to be able to dispose of it in the tailings pile as 11e.(2) byproduct material. In determining whether the proposed processing was primarily for the source-material content or for the disposal of waste, either of the following tests can be used:

a. *Co-disposal test.* Determine if the feed material would be approved for disposal in the tailings impoundment under the guidance contained in the July 27, 1988, memorandum from Hugh L. Thompson to Robert D. Martin, or subsequent revisions (e.g., as described

in Part A of this notice). If it would, it can be concluded that if a mill operator proposes to process it, the processing is primarily for the source-material content. The material would have to be physically and chemically similar to 11e.(2) byproduct material and not be subject to RCRA or other EPA hazardous-waste regulations, as discussed in Part A.

b. *Licensee certification test.* If the licensee certifies under oath or affirmation that the feed material: (1) is being reclaimed or recycled in accord with RCRA, or does not contain RCRA hazardous waste; and (2) is to be processed primarily for the recovery of uranium and for no other primary purpose, it can be accepted.

If it can be determined, using the aforementioned guidance, that the proposed feed material meets the definition of ore, that it will not introduce a hazardous waste not otherwise exempted, and that the primary purpose of its processing is for its source-material content, the request can be approved.

NRC Staff Analysis of the Use of Uranium Mill Feed Materials Other Than Natural Ores

1. Introduction

The Nuclear Regulatory Commission (NRC) and Agreement States have received, and in some cases approved, requests to allow a uranium mill to process feed material that was not natural (native, raw) uranium ore and dispose of the resulting waste in the facility's tailings impoundment. In those cases, the feed material was generally either processing wastes from other extraction procedures or the residues from mine-water treatment. These requests were handled on a case-by-case basis, and approvals were based on the interpretation that the proposed feed material was refined or processed ore. This designation of the feed material as ore is critical to the determination of disposal methods. This stems from the definition under section 11e.(2) of the AEA, which limits byproduct material origin to "ore processed primarily for its source material content."

If the alternate feed material does not meet the definition of ore, or is not processed primarily for its source material, there are two concerns. The first is that complicated, dual regulation of the tailings pile by both NRC and the Environmental Protection Agency (EPA) under RCRA could result. The second concern is that the requested activity might jeopardize the ultimate transfer of the reclaimed tailings impoundment to the State or Federal Government for perpetual custody and maintenance.

During the past three years, several additional requests for approval of alternate feed materials have been received. Decisions on those requests are pending until development of a generic agency position. The analysis addresses the need for a definition of the term "ore" as used in the definition of byproduct material in the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA), and for criteria to determine if mill-processing wastes from alternate feed material will meet the requirements for byproduct material under a 10 CFR part 40 license.

2. Background

The UMTRCA amended the AEA to include uranium and thorium mill tailings and other wastes from the milling process as material to be licensed by NRC. Specifically, the definition of byproduct material was revised in section 11e of the AEA by adding:

> And (2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.

Such byproduct material includes all the wastes resulting from the milling process, not just the radioactive components. In addition, title II of UMTRCA amended the AEA to explicitly exclude the requirement for EPA to permit 11e.(2) byproduct material under the RCRA. The definition and RCRA exemption of 11e.(2) byproduct material contrasts significantly with the situation for source material and low-level radioactive waste (LLW), where only the radioactive component is regulated under the authority of the AEA. EPA has to address hazardous constituents in those materials separately.

As a result of UMTRCA, the NRC amended 10 CFR Part 40, to regulate the uranium and thorium tailings and wastes from the milling processes. Thus, under normal operation, all tailings and wastes in an NRC or Agreement State licensed mill producing uranium or thorium are classified as "11e.(2) byproduct material," and are disposed of in tailings piles regulated under part 40. They are not subject to EPA regulation, under RCRA. However, if material that did not qualify as 11e.(2) byproduct material was placed in a mill's tailings impoundment, any hazardous constituents it contained could lead to regulation by EPA.

The UMTRCA also required either the United States, or the State in which the byproduct material has been disposed of, to maintain long-term custody of, and surveillance over, the byproduct material and the land used for its disposal. The AEA currently designates the Department of Energy (DOE) as the Federal "custodial agency." However, the UMTRCA specifically referred only to 11e.(2) byproduct material, and contains no provision allowing for the transfer of custody or title of any other material. While the application of section 151(b) of the Nuclear Waste Policy Act could moot this issue in a specific case, it does not provide a legal basis for avoiding the labeling of a tailings disposal impoundment as either a mixed waste facility or a low-level waste disposal facility with the complex regulatory burdens these labels carry. One of the purposes of the guidance is to avoid these consequences.

The term "alternate feed materials" is used to indicate sources of uranium or thorium (throughout this analysis references to uranium mills or ore should be taken to apply to thorium mills or ore, also), for a mill, that are not natural ore (ore is not defined in the AEA nor in UMTRCA). NRC staff has approved requests, in the form of license amendments, to allow processing of alternate feed materials in uranium mills. The requested license amendments generally were to allow the mill to use feed materials that were either processing wastes such as those derived through the extraction of other elements, or the residues from mine-water treatment.

The following are examples of license amendments approved in the past:

1. Processing Wastes From Other Operations

The Rio Algom (Lisbon uranium mill in Utah has had its source-material license amended several times in the period from 1982 to 1987, so the mill could receive alternate feed materials. The mill was authorized to use processing wastes from: a uranium hexafluoride conversion facility, a niobium-tantalum recovery facility, and from an yttrium-lanthanides recovery facility. The materials were radiologically consistent with the existing tailings, but, in the first example, the fluoride was in higher concentration (greater than one percent) than in the existing tailings. In 1987, NRC also authorized the Quivira Mining Company to process raffinate sludge from a uranium hexafluoride conversion plant. The uranium content of these wastes (the yttrium-lanthanides wastes averaged 1.17 percent and the uranium hexafluoride waste streams 0.6 to 8.7 percent) was higher than the average

natural ore processed in the United States.

2. Wastes From Treatment of Mine Water

Some mines have to be dewatered as the shafts or pits fill with ground-water. This water often contains dissolved constituents as a result of flow through and contact with ore bodies. It must therefore be treated before it can be discharged offsite. Treatment is often via ion-exchange columns which concentrate high levels of uranium on resins or the eluate. Several mills (Western Nuclear Inc., Split Rock, Wyoming, and Atlas Minerals Corp., Moab, Utah) have obtained license amendments and processed these residues/wastes through the mill.

The NRC staff approved the processing of these alternate feed materials, considering them to be refined and processed ore.This designation as ore is essential so that the residue from uranium processing can qualify as 11e.(2) byproduct material for the reasons stated earlier. With this interpretation, the resultant milling wastes were legitimately classified as 11e.(2) byproduct material.

However, because there is not a definition of ore in 10 CFR Part 40 and because of the potential policy issues involved in approving the processing of feed material other than natural ore, the staff has put recent requests on hold, pending establishment of an agency position.

3. Discussion

Uranium mills were designed and operated to process natural uranium-bearing rock (i.e., ore), usually mined nearby, in order to produce uranium (in the form of yellowcake). There usually was no question of other feed material or what constituted ore. However, there have been occasions when other material has been proposed for processing at uranium mills.

Mill tailings that meet the definition of 11e.(2) byproduct material must be stabilized in accordance with the criteria in appendix A of 10 CFR part 40, but are not subject to separate regulation as LLW or as hazardous waste under RCRA. The wastes and tailings produced in a uranium mill processing uranium-bearing rock from nearby mines would meet the definition of 11e.(2) byproduct material. However, it is not obvious, from the definition alone, whether wastes produced from processing feed material that is something other than rock mine from the earth meets the definition of 11e.(2) byproduct material.

Neither the AEA nor 10 CFR part 40 contains a definition of "ore" as it appears in the definition of 11e.(2) byproduct material. The term "unrefined and unprocessed ore" is, however, defined separately in part 40, in relation to the exemption in 10 CFR 40.13(b) for source material in ore, as:

> Ore in its natural form prior to any processing, such as grinding, roasting or beneficiating, or refining.

The fact that the term "any ore", rather than "unrefined and unprocessed ore," is used in the definition of 11e.(2) byproduct material implies that a broader range of feed materials could be processed in a mill, with the wastes still being considered as 11e.(2) byproduct material.

Legislative history confirms the validity of a broad interpretation of the term "any ore." The definition of 11e.(2) byproduct material as originally presented in UMTRCA was:

> The tailings or wastes produced by the extraction or concentration of uranium or thorium from any source material.

However, there was a concern that tailings resulting from the processing of ore containing less than 0.05 percent uranium (the minimum concentration that would still meet the definition of source material) would fall outside the definition. To preclude that possibility, it was suggested that the words "any ore processed primarily for its source material content" be substituted for "any source material."

In its decision in a case involving whether certain material in and near the West Chicago, Illinois, facility of Kerr-McGee Chemical Corporation (Kerr-McGee Corporation v. NRC, 903 F2d 1 (D.C. Cir. 1990) was 11e.(2) byproduct material or source material, the United States Court of Appeals arrived at a broad interpretation of the definition of byproduct material in which the concept of ore is not restricted to native rock. It also cited Chairman Hendrie's testimony before Congress that led to the wording that now exists, in the AEA, defining 11e.(2) byproduct material as establishing that a broad reading of the definition was in line with Congressional expectations.

The previous discussion leads to the conclusion that the term "ore" in the definition of 11e.(2) byproduct material can be applied to a broad spectrum of feed materials from which uranium or thorium is extracted. In view of the foregoing, NRC staff has recommended a definition of ore as follows:

> Ore is a natural or native matter that may be mined and treated for the extraction of any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill.

Two major considerations that went into this proposed definition of ore were:

1. It is broad enough to include a wide variety of feed materials.

2. The definition continues to be tied into the nuclear fuel cycle. Because the extraction of uranium in a licensed mill remains the primary purpose of processing the feed material, it excludes secondary uranium side-stream recovery operations at mills processing ore for other metals. Thus, tailings from such side-stream operations at facilities that are not licensed as uranium or thorium mills, would not meet the definition of 11e.(2) byproduct material.

Although the intent of Congress in defining 11e.(2) byproduct material appears to have been to encompass the wastes from all feed material processed primarily for its source-material content, two significant issues result from the proposed definition of ore.

Since some of the feed material could contain hazardous components, in addition to source material, the first significant issue is whether material that would otherwise have to be disposed of as hazardous waste can be processed in a uranium mill and disposed of in the tailings impoundment as 11e.(2) byproduct material. If such feed material were not processed at a uranium mill, it would be classified as mixed waste (radioactivity regulated under AEA, plus hazardous waste regulated by EPA) and would thus have to be disposed of in a mixed waste facility.

To determine if the feed material would be regulated as hazardous waste, one must first determine if it meets the definition of solid waste, since hazardous waste is a subset of solid waste, under RCRA. The EPA regulations that implemented RCRA state (40 CFR 261.1–261.4) that solid waste is any discarded material not excluded in the regulations and includes recycled material. A material is recycled if it is reclaimed. Reclaimed is defined as, "* * * processed to recover a usable product * * *" Since alternate feed material would be reclaimed at the mill, it would be considered solid waste. It also would be classified as byproduct, which EPA defines as, "* * * not one of the primary products of a productive process * * *" However, 40 CFR 261.2c(3) provides that byproducts that exhibit only a characteristic of hazardous waste (ignitable, corrosive, reactive, toxic) and that are being reclaimed are not regulated as hazardous waste. To support the "reclaimed" provision, it must be demonstrated that there is a known

market for the material and documentation provided, such as contracts showing that a second person uses the material as an ingredient in a production process. An exception to this exemption is sludge from a water treatment plant, so residues from mine-water treatment would not qualify.

Since feed material is being used as an ore from which a useable product (uranium) is to be extracted, it is being reclaimed and thus would meet the EPA exemption to regulation as characteristic hazardous waste, except if it were mine-water treatment residues.

The proposed feed material would still be hazardous waste if it contained a waste listed under subpart D (part 261.30–.33) of the EPA regulations. It is unlikely that feed material for uranium mills would contain such substances. Assurances need to be provided that these proposed feed materials do not contain RCRA or TSCA listed hazardous wastes.

Constituents with hazardous characteristics that were in feed materials processed at a uranium mill would eventually end up in the tailings impoundment as 11e.(2) byproduct material. As such, they would be regulated under appendix A of 10 CFR part 40 which provides for monitoring and control of hazardous constituents. Thus, the ultimate fate of hazardous constituents that might be in uranium mill feed material would not escape regulatory oversight.

The second significant issue that must be addressed is the potential of converting material that would have to be disposed of as LLW or mixed waste into ore, for processing and disposal as 11e.(2) byproduct material. The possibility of converting such wastes to 11e.(2) byproduct material can be very attractive to owners of such material. This is because of the high cost of disposing of LLW and especially of mixed waste. An owner of such material could pay a mill operator substantially less to process it for its uranium content and dispose of the resulting 11e.(2) byproduct material than to dispose of the material as waste at an appropriate facility. Utah officials have already expressed concern over "sham disposal" (i.e., converting a mill into a LLW disposal site).

The proposed definition of ore would include any material from which source material is extracted in a licensed mill and would thus seem to allow such sham disposals. However the definition of 11e.(2) byproduct material requires that the ore be processed "* * * primarily for its source material content" and thus would not permit such sham disposals. Material that was processed primarily to convert what would have been LLW or mixed waste into 11e.(2) byproduct material would not meet the definition of 11e.(2) byproduct material.

Therefore, as part of its review of a licensee proposal to process material other than natural ore, the staff would have to determine whether the processing was primarily for the source-material content or for the disposal of waste. This determination would have to be made on a case-specific basis, but either of the following tests can be used:

1. *Co-disposal test:* If the feed material would be approved for disposal in the tailings impoundment, under the guidance contained in the July 27, 1988, memorandum from Hugh L. Thompson to Robert D. Martin, or subsequent revisions, it can be concluded that if a mill operator proposes to process it, the processing is primarily for the source-material content. The material would have to be physically and chemically similar to 11e.(2) byproduct material and not be subject to RCRA or other EPA hazardous-waste regulations, as discussed in this notice.

2. *Licensee certificate test:* If the licensee certifies under oath or affirmation that the feed material: (1) is being reclaimed or recycled in accord with RCRA, or does not contain RCRA hazardous waste; and (2) is to be processed primarily for the recovery of uranium and for no other primary purpose, it can be accepted.

4. Results of Staff Analysis

The staff has determined to issue guidance on the definition of ore and on the issues related to feed material that could be considered waste. Although Agency guidance does not carry the weight of a regulation, the staff concludes that the time and resources required for rulemaking on the definition of ore would not be justified in this instance. There are only a few mills that are in active or standby status and that would be able to process alternate feed material, and it is estimated that the Agency would receive only one or two such requests a year. However, the staff will include the definition of ore the next time amendments to 10 CFR Part 40 are proposed.

Issuance of the guidance would also assist Agreement States. As a policy, the Agreement States are not required to adopt this guidance as a matter of compatibility. However, if an Agreement State implements a similar policy, the State will have some assurance that NRC will not question its policy in program reviews and in making the determination as required in 10 CFR 150.15a(a) prior to the State terminating the license.

Dated at Rockville, Maryland, this 7th day of May 1992.

For the Nuclear Regulatory Commission.

John Surmeier,

Chief, Uranium Recovery Branch, Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards.

[FR Doc. 92-11215 Filed 5-12-92; 8:45 am]

BILLING CODE 7590-01-M

[Docket No. 50-416]

Entergy Operations, Inc.; Notice of Consideration of Issuance of Amendment to Facility Operating License, Proposed No Significant Hazards Consideration Determination, and Opportunity for Hearing

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-29, issued to Entergy Operations, Inc. (the licensee), for operation of the Grand Gulf Nuclear Station, Unit 1, located in Claiborne County, Mississippi.

The proposed amendment would increase the trip setpoints of four circuit breakers for the suppression pool makeup (SMPU) valves.

In response to NRC Generic Letter 89-10, the licensee has identified the need to replace four valve actuators for the SPMU valves with larger actuators. During the design change process, it was determined that the required larger valve actuator motors would require circuit breakers with higher trip setpoints. These trip setpoints are specified in the Technical Specifications (TS), and the licensee must request a TS change to permit the use of the higher trip setpoints. Allowing for the standard 30-day Federal Register notice would delay approval of the requested change beyond the scheduled end of the current refueling outage. The staff concludes that the licensee has provided an acceptable basis for its request and that exigent circumstances exist.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed

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42 USC 2022.

purpose and any final standards promulgated by the Administrator of the Environmental Protection Agency in accordance with section 275. Such alternative State requirements may take into account local or regional conditions, including geology, topography, hydrology and meteorology.[277]

Sec. 275. Health And Environmental Standards for Uranium Mill Tailings.

42 USC 2022.
Rule.

a. As soon as practicable, but not later than October 1, 1982,[278] the Administrator of the Environmental Protection Agency (hereinafter referred to in this section as the "Administrator") shall, by rule, promulgate standards of general application (including standards applicable to licenses under section 104(h) of the Uranium Mill Tailings Radiation Control Act of 1978) for the protection of the public health, safety, and the environment from radiological and nonradiological hazards associated with residual radioactive materials (as defined in section 101 of the Uranium Mill Tailings Radiation Control Act of 1978) located at inactive uranium mill tailings sites and depository sites for such materials selected by the Secretary of Energy, pursuant to title I of the Uranium Mill Tailings Radiation Control Act of 1978. Standards promulgated pursuant to this subsection shall, to the maximum extent practicable, be consistent with the requirements of the Solid Waste Disposal Act, as amended. In establishing such standards, the Administrator shall consider the risk to the public health, safety, and the environment, the environmental and economic costs of applying such standards, and such other factors as the Administrator determines to be appropriate.[279] The Administrator may periodically revise any standard promulgated pursuant to this subsection.

42 USC 7911.

After October 1, 1982, if the Administrator has not promulgated standards in final form under this subsection, any action of the Secretary of Energy under title I of the Uranium Mill Tailings Radiation Control Act of 1978 which is required to comply with, or be taken in accordance with, standards of the Administrator shall comply with, or be taken in accordance with, the standards proposed by the Administrator under this subsection until such time as the Administrator promulgates such standards in final form.[280]

42 USC 2014.
42 USC 6901 note.

b.(1) As soon as practicable, but not later than October 31, 1982, the Administrator shall, by rule, propose and within 11 months thereafter promulgate in final form,[281] standards, general application for the protection of the public health, safety, and the environment from radiological and non-radiological hazards associated with processing and with the possession, transfer, and disposal of byproduct material, as defined in section 11e.(2) of this Act, at sites at which ores are processed primarily for their source material content or which are used for the disposal of such byproduct material.

Promulgation authority.

If the Administrator fails to promulgate standards in final form under this subsection by October 1, 1983, the authority of the Administrator to promulgate such standards shall terminate, and the Commission may take

[277]Public Law 97-415 (96 Stat. 2067) (1983), sec. 19 added this paragraph.
[278]Public Law 97-415 (96 Stat. 2067) (1983), sec. 18 substituted "October 1, 1982" for "one year after the date of enactment of this section."
[279]Public Law 97-415 (96 Stat. 2067) (1983), sec. 22 added this language to sec. 275a.
[280]Public Law 97-415 (96 Stat. 2067) (1983), sec. 18 substituted this language for "one year after enactment of this section."
[281]Public Law 97-415 (96 Stat. 2067) (1983), sec. 22 added this language to sec. 275b(1).

actions under this Act without regard to any provision of this Act requiring such actions to comply with, or be taken in accordance with, standards promulgated by the Administrator. In any such case, the Commission shall promulgate, and from time to time revise, any such standards of general application which the Commission deems necessary to carry out its responsibilities in the conduct of its licensing activities under this Act. Requirements established by the Commission under this Act with respect to byproduct material as defined in section 11e.(2) shall confirm to such standards. Any requirements adopted by the Commission respecting such byproduct material before promulgation by the Commission of such standards shall be amended as the Commission deems necessary to conform to such standards in the same manner as provided in subsection f.(3). Nothing in this subsection shall be construed to prohibit or suspend the implementation or enforcement by the Commission of any requirement of the Commission respecting byproduct material as defined in section 11e.(2) pending promulgation by the Commission of any such standard of general application.[282] In establishing such standards, the Administrator shall consider the risk to the public health, safety, and the environment, the environmental and economic costs of applying such standards, and such other factors as the Administrator determines to be appropriate.[283]

42 USC 2014.

(2) Such generally applicable standards promulgated pursuant to this subsection for nonradiological hazards shall provide for the protection of human health and the environment consistent with the standards required under subtitle C of the Solid Waste Disposal Act, as amended, which are applicable to such hazards: *Provided, however*, That no permit issued by the Administrator is required under this Act or the Solid Waste Disposal Act, as amended, for the processing, possession, transfer, or disposal of byproduct material, as defined in section 11e.(2) of this Act. The Administration may periodically revise any standard promulgated pursuant to this subsection. Within three years after such revision of any such standard, the Commission and any State permitted to exercise authority under section 274b.(2) shall apply such revised standard in the case of any license for byproduct material as defined in section 11e.(2) or any revision thereof.

42 USC 2021.

Consultation.
Notice, hearing opportunity.
Publication in Federal Register.

c. (1) Before the promulgation of any rule pursuant to this section, the Administrator shall publish the proposed rule in the Federal Register, together with a statement of the research, analysis, and other available information in support of such proposed rule, and provide a period of public comment of at least thirty days for written comments thereon and an opportunity, after such comment period and after public notice, for any interested person to present oral data, views, and arguments at a public hearing. There shall be a transcript of any such hearing. The Administrator shall consult with the Commission and the Secretary of Energy before promulgation of any such rule.

Judicial review.

(2) Judicial review of any rule promulgated under this section may be obtained by any interested person only upon such person filing a petition for review within sixty days after such promulgation in the United States court of appeals for the Federal judicial circuit in which such person resides or has his principal place of business. A copy of

[282]Public Law 97-415 (96 Stat. 2067) (1983), sec. 18 changed subsec. b from "eighteen months after enactment of this section" to current language.
[283]Public Law 97-415 (96 Stat. 2067) (1983), sec. 22 added this language at end of subsec. b.

the petition shall be forthwith transmitted by the clerk of the court to the Administrator. The Administrator thereupon shall file in the court the written submission to, and transcript of, the written or oral proceedings on which such rule was based as provided in section 2112 of title 28, United States Code. The court shall have jurisdiction to review the rule in accordance with chapter 7 of title 5, United States Code, and to grant appropriate relief as provided in such chapter. The judgment of the court affirming, modifying, or setting aside, in whole or in part, any such rule shall be final, subject to judicial review by the Supreme Court of the United States upon certiorari or certification as provided in section 1254 of title 28, United States Code.

5 USC *et seq.*

(3) Any rule promulgated under this section shall not take effect earlier than sixty calendar days after such promulgation.

42 USC 2021.

d. Implementation and enforcement of the standards promulgated pursuant to subsection b. of this section shall be the responsibility of the Commission in the conduct of its licensing activities under this Act. States exercising authority pursuant to section 274b.(2) of this Act shall implement and enforce such standards in accordance with subsection o. of such section.

42 USC 2014.
42 USC 7401 note.

e. Nothing in this Act applicable to byproduct material, as defined in section 11e.(2) of this Act, shall affect the authority of the Administrator under the Clean Air Act of 1970, as amended, or the Federal Water Pollution Control Act, as amended.[284]

Uranium mill licensing requirement regulations. Implementation and Enforcement.

f.(1) Prior to January 1, 1983, the Commission shall not implement or enforce the provisions of the Uranium Mill Licensing Requirements published as final rules at 45 Federal Register 65521 to 65538 on October 3, 1980 (hereinafter in this subsection referred to as the "October 3 regulations"). After December 31, 1982, the Commission is authorized to implement and enforce the provisions of such October 3 regulations (and any subsequent modifications or additions to such regulations which may be adopted by the Commission), except as otherwise provided in paragraphs (2) and (3) of this subsection.

Review, public comment, and suspension.

(2) Following the proposal by the Administrator of standards under subsection b., the Commission shall review the October 3 regulations, and, not later than 90 days after the date of such proposal, suspend implementation and enforcement of any provision of such regulations which the Commission determines after notice and opportunity for public comment to require a major action or major commitment by licensees which would be unnecessary if–

(A) the standards proposed by the Administrator are promulgated in final form without modification, and

(B) the Commission's requirements are modified to conform to such standards.

Such suspension shall terminate on the earlier of April 1, 1984 or the date on which the Commission amends the October 3 regulations to conform to final standards promulgated by the Administrator under subsection b. During the period of such suspension, the Commission shall continue to regulate byproduct material (as defined in section 11e.(2)) under this Act on a licensee-by-licensee basis as the Commission deems necessary to protect public health, safety, and the environment.

[284]Public Law 95-604 (92 Stat. 3039) (1978), sec. 206(a), added sec. 275.

(3) Not later than 6 months after the date on which the Administrator promulgates final standards pursuant to subsection b. of this section, the Commission shall, after notice and opportunity for public comment, amend the October 3 regulations, and adopt such modifications, as the Commission deems necessary to conform to such final standards of the Administrator.

42 USC 2114.

(4) Nothing in this subsection may be construed as affecting the authority or responsibility of the Commission under section 84 to promulgate regulations to protect the public health and safety and the environment.[380]

Sec. 276. State Authority to Regulate Radiation Below Level of Regulatory Concern of Nuclear Regulatory Commission.

42 USC 2023.

(a)[381] IN GENERAL.–No provision of this Act, or of the Low-Level Radioactive Waste Policy Act, may be construed to prohibit or otherwise restrict the authority of any State to regulate, on the basis of radiological hazard, the disposal or off-site incineration of low-level radioactive waste, if the Nuclear Regulatory Commission, after the date of the enactment of the Energy Policy Act of 1992 exempts such waste from regulation.

(b) RELATION TO OTHER STATE AUTHORITY.–This section may not be construed to imply preemption of existing State authority. Except as expressly provided in subsection (a), this section may not be construed to confer on any State any additional authority to regulate activities licensed by the Nuclear Regulatory Commission.

(c) DEFINITIONS.–For purposes of this section:

(1) The term "low-level radioactive waste" means radioactive material classified by the Nuclear Regulatory Commission as low-level radioactive waste on the date of the enactment of the Energy Policy Act of 1992.

(2) The term "off-site incineration" means any incineration of radioactive materials at a facility that is located off the site where such materials were generated.

(3) The term "State" means each of the several States, the District of Columbia, and any commonwealth, territory, or possession of the United States.

(b) REVOCATION OF RELATED NRC POLICY STATEMENTS.–The policy statements of the Nuclear Regulatory Commission published in the Federal Register on July 3, 1990 (55 Fed. Reg. 27522) and August 29, 1986 (51 Fed. Reg. 30839), relating to radioactive waste below regulatory concern, shall have no effect after the date of the enactment of this Act.[382]

Sec. 281. Separability.

Separability.

If any provision of this Act or the application of such provision to any person or circumstances, is held invalid, the remainder of this Act or the application of such provision to persons or circumstances other than those as to which it is held invalid, shall not be affected thereby.

Sec. 291. SHORT TITLE.

Short title.

This Act may be cited as the "Atomic Energy Act of 1954."

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[380]Public Law 97-415 (96 Stat. 2067) (1983), sec. 18 added new subsec. f.
[381]P.L. 102-486 (106 Stat. 3122)
[382]Public Law 102-486 (106 Stat. 3122); Oct. 24, 1992 added new Sec. 276.

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subsection, the United States or a State shall not transfer title to material or property acquired under this subsection to any person, unless such transfer is in the same manner as provided under section 104(h) of the Uranium Mill Tailings Radiation Control Act of 1978.

(8) The provisions of this subsection respecting transfer of title and custody to land shall not apply in the case of lands held in trust by the United States for any Indian tribe or lands owned by such Indian tribe subject to a restriction against alienation imposed by the United States. In the case of such lands which are used for the disposal of byproduct material, as defined in section 11e.(2), the licensee shall be required to enter into such arrangements with the Commission as may be appropriate to assure the long-term maintenance and monitoring of such lands by the United States.

c. Upon termination on any license to which this section applies, the Commission shall determine whether or not the licensee has complied with all applicable standards and requirements under such license.[85]

Sec. 84. Authorities of Commission Respecting Certain Byproduct Material.

42 USC 2114.

a. The Commission shall insure that the management of any byproduct material, as defined in section 11e.(2), is carried out in such manner as–

(1) the Commission deems appropriate to protect the public health and safety and the environment from radiological and nonradiological hazards associated with the processing and with the possession and transfer of such material taking into account the risk to the public health, safety, and the environment, with due consideration of the economic costs and such other factors as the Commission determines to be appropriate,[86]

Infra.

(2) conforms with applicable general standards promulgated by the Administration of the Environmental Protection Agency under section 275, and

(3) conforms to general requirements established by the Commission, with the concurrence of the Administrator, which are, to the maximum extent practicable, at lease comparable to requirements applicable to the possession, transfer, and disposal of similar hazardous material regulated by the Administrator under the Solid Waste Disposal Act, as amended.

42 USC 6901 note.

b. In carrying out its authority under this section, the Commission is authorized to–

42 USC 2112.
Rule, regulation of order.

(l) by rule, regulation, or order require persons, officers, or instrumentalities, exempted from licensing under section 81 of this Act to conduct monitoring, perform remedial work, and to comply with such other measures as it may deem necessary or desirable to protect health or to minimize danger to life or property, and in connection with the disposal or storage of such byproduct material; and

(2) make such studies and inspections and to conduct such monitoring as may be necessary.

Ante, p. 3033.
Civil penalty.

Any violation by any person other than the United States or any officer or employee of the United States or a State of any rule, regulation, or

[85]Public Law 95-604 (92 Stat. 3033) (1978, sec. 202(a), added sec. 83.
[86]Public Law 97-415 (96 Stat. 2067) (1983) sec. 22 added the language after "material."

order or licensing provision, of the Commission established under this section or section 83 shall be subject to a civil penalty in the same manner and in the same amount as violations subject to a civil penalty under section 234. Nothing in this section affects any authority of the Commission under any other provisions of this Act.[87]

42 USC 2282.

42 USC 2014.
42 USC 2114.

c. In the case of sites at which ores are processed primarily for their source material content or which are used for the disposal of byproduct material as defined in section 11e.(2), a licensee may propose alternatives to specific requirements adopted and enforced by the Commission under this Act. Such alternative proposals may take into account local or regional conditions, including geology, topography, hydrology and meteorology. The Commission may treat such alternatives as satisfying Commission requirements if the Commission determines that such alternatives will achieve a level of stabilization and containment of the sites concerned, and a level of protection for public health, safety, and the environment from radiological and nonradiological hazards associated with such sites, which is equivalent to, to the extent practicable, or more stringent than the level which would be achieved by standards and requirements adopted and enforced by the Commission for the same purpose and any final standards promulgated by the Administrator of the Environmental Protection Agency in accordance with section 275.[88]

42 USC 2022.

CHAPTER 9–MILITARY APPLICATION OF ATOMIC ENERGY

Sec. 91. Authority.

42 USC 2121.
Authority.

a. The Commission is authorized to–

(1) conduct experiments and do research and development work in the military application of atomic energy; and

(2) engage in the production of atomic weapons, or atomic weapon parts, except that such activities shall be carried on only to the extent that the express consent and direction of the President of the United States has been obtained, which consent and direction shall be obtained at least once each year.

b. The President from time to time may direct the Commission (1) to deliver such quantities of special nuclear material or atomic weapons to the Department of Defense for such use as he deems necessary in the interest of national defense, or (2) to authorize the Department of Defense to manufacture, produce, or acquire any atomic weapon or utilization facility for military purposes: *Provided, however,* That such authorization shall not extend to the production of special nuclear material other than that incidental to the operation of such utilization facilities.

c. The President may authorize the Commission or the Department of Defense, with the assistance of the other, to cooperate with another nation and, notwithstanding the provisions of section 57, 62, or 81, to transfer by sale, lease, or loan to that nation, in accordance with terms and conditions of a program approved by the President–

(1) nonnuclear parts of atomic weapons provided that such nation has made substantial progress in the development of atomic weapons, and other nonnuclear parts of atomic weapons systems involving Restricted Data provided that such transfer will not contribute

[87]Public Law 95-604 (92 Stat. 3039) (1978), sec. 205(a), added sec. 84.
[88]Public Law 97-415 (96 Stat. 2067) (1983) sec. 20 added subsec. "c."

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where only minor quantities of residual radioactive materials are involved. Examples are residual radioactive materials under hard surface public roads and sidewalks, around public sewer lines, or in fence post foundations. Supplemental standards should not be applied at such sites, however, if individuals are likely to be exposed for long periods of time to radiation from such materials at levels above those that would prevail under §192.12(a).

(d) The cost of a remedial action for cleanup of a building under §192.12(b) is clearly unreasonably high relative to the benefits. Factors that should be included in this judgment are the anticipated period of occupancy, the incremental radiation level that would be affected by the remedial action, the residual useful lifetime of the building, the potential for future construction at the site, and the applicability of less costly remedial methods than removal of residual radioactive materials.

(e) There is no known remedial action.

(f) The restoration of groundwater quality at any designated processing site under §192.12(c) is technically impracticable from an engineering perspective.

(g) The groundwater meets the criteria of §192.11(e).

(h) Radionuclides other than radium-226 and its decay products are present in sufficient quantity and concentration to constitute a significant radiation hazard from residual radioactive materials.

[48 FR 602, Jan. 5, 1983, as amended at 60 FR 2868, Jan. 11, 1995]

§ 192.22 Supplemental standards.

Federal agencies implementing subparts A and B may in lieu thereof proceed pursuant to this section with respect to generic or individual situations meeting the eligibility requirements of §192.21.

(a) When one or more of the criteria of §192.21(a) through (g) applies, the Secretary shall select and perform that alternative remedial action that comes as close to meeting the otherwise applicable standard under §192.02(c)(3) as is reasonably achievable.

(b) When §192.21(h) applies, remedial actions shall reduce other residual radioactivity to levels that are as low as is reasonably achievable and conform to the standards of subparts A and B to the maximum extent practicable.

(c) The implementing agencies may make general determinations concerning remedial actions under this section that will apply to all locations with specified characteristics, or they may make a determination for a specific location. When remedial actions are proposed under this section for a specific location, the Department of Energy shall inform any private owners and occupants of the affected location and solicit their comments. The Department of Energy shall provide any such comments to the other implementing agencies. The Department of Energy shall also periodically inform the Environmental Protection Agency of both general and individual determinations under the provisions of this section.

(d) When §192.21(b), (f), or (g) apply, implementing agencies shall apply any remedial actions for the restoration of contamination of groundwater by residual radioactive materials that is required to assure, at a minimum, protection of human health and the environment. In addition, when §192.21(g) applies, supplemental standards shall ensure that current and reasonably projected uses of the affected groundwater are preserved.

[48 FR 602, Jan. 5, 1983, as amended at 60 FR 2868, Jan. 11, 1995]

§ 192.23 Effective date.

Subparts A, B, and C shall be effective March 7, 1983.

Subpart D—Standards for Management of Uranium Byproduct Materials Pursuant to Section 84 of the Atomic Energy Act of 1954, as Amended

SOURCE: 48 FR 45946, Oct. 7, 1983, unless otherwise noted.

§ 192.30 Applicability.

This subpart applies to the management of uranium byproduct materials under section 84 of the Atomic Energy Act of 1954 (henceforth designated "the

Act"), as amended, during and following processing of uranium ores, and to restoration of disposal sites following any use of such sites under section 83(b)(1)(B) of the Act.

§ 192.31 Definitions and cross-references.

References in this subpart to other parts of the Code of Federal Regulations are to those parts as codified on January 1, 1983.

(a) Unless otherwise indicated in this subpart, all terms shall have the same meaning as in Title II of the Uranium Mill Tailings Rediation Control Act of 1978, subparts A and B of this part, or parts 190, 260, 261, and 264 of this chapter. For the purposes of this subpart, the terms "waste," "hazardous waste," and related terms, as used in parts 260, 261, and 264 of this chapter shall apply to byproduct material.

(b) *Uranium byproduct material* means the tailings or wastes produced by the extraction or concentration of uranium from any ore processed primarily for its source material content. Ore bodies depleted by uranium solution extraction operations and which remain underground do not constitute "byproduct material" for the purpose of this subpart.

(c) *Control* means any action to stabilize, inhibit future misuse of, or reduce emissions or effluents from uranium byproduct materials.

(d) *Licensed site* means the area contained within the boundary of a location under the control of persons generating or storing uranium byproduct materials under a license issued pursuant to section 84 of the Act. For purposes of this subpart, "licensed site" is equivalent to "regulated unit" in subpart F of part 264 of this chapter.

(e) *Disposal site* means a site selected pursuant to section 83 of the Act.

(f) *Disposal area* means the region within the perimeter of an impoundment or pile containing uranium by product materials to which the post-closure requirements of § 192.32(b)(1) of this subpart apply.

(g) *Regulatory agency* means the U.S. Nuclear Regulatory Commission.

(h) *Closure period* means the period of time beginning with the cessation, with respect to a waste impoundment, of uranium ore processing operations and ending with completion of requirements specified under a closure plan.

(i) *Closure plan* means the plan required under § 264.112 of this chapter.

(j) *Existing portion* means that land surface area of an existing surface impoundment on which significant quantities of uranium byproduct materials have been placed prior to promulgation of this standard.

(k) *As expeditiously as practicable considering technological feasibility* means as quickly as possible considering: the physical characteristics of the tailings and the site; the limits of available technology; the need for consistency with mandatory requirements of other regulatory programs; and factors beyond the control of the licensee. The phrase permits consideration of the cost of compliance only to the extent specifically provided for by use of the term "available technology."

(l) *Permanent Radon Barrier* means the final radon barrier constructed to achieve compliance with, including attainment of, the limit on releases of radon-222 in § 192.32(b)(1)(ii).

(m) *Available technology* means technologies and methods for emplacing a permanent radon barrier on uranium mill tailings piles or impoundments. This term shall not be construed to include extraordinary measures or techniques that would impose costs that are grossly excessive as measured by practice within the industry or one that is reasonably analogous, (such as, by way of illustration only, unreasonable overtime, staffing or transportation requirements, etc., considering normal practice in the industry; laser fusion, of soils, etc.), provided there is reasonable progress toward emplacement of a permanent radon barrier. To determine grossly excessive costs, the relevant baseline against which cost increases shall be compared is the cost estimate for tailings impoundment closure contained in the licensee's tailings closure plan, but costs beyond such estimates shall not automatically be considered grossly excessive.

(n) *Tailings Closure Plan (Radon)* means the Nuclear Regulatory Commission or Agreement State approved plan detailing activities to accomplish timely emplacement of a permanent

radon barrier. A tailings closure plan shall include a schedule for key radon closure milestone activities such as wind blown tailings retrieval and placement on the pile, interim stabilization (including dewatering or the removal of freestanding liquids and recontouring), and emplacement of a permanent radon barrier constructed to achieve compliance with the 20 pCi/m^2-s flux standard as expeditiously as practicable considering technological feasibility (including factors beyond the control of the licensee).

(o) *Factors beyond the control of the licensee* means factors proximately causing delay in meeting the schedule in the applicable license for timely emplacement of the permanent radon barrier notwithstanding the good faith efforts of the licensee to achieve compliance. These factors may include, but are not limited to, physical conditions at the site; inclement weather or climatic conditions; an act of God; an act of war; a judicial or administrative order or decision, or change to the statutory, regulatory, or other legal requirements applicable to the licensee's facility that would preclude or delay the performance of activities required for compliance; labor disturbances; any modifications, cessation or delay ordered by state, Federal or local agencies; delays beyond the time reasonably required in obtaining necessary governmental permits, licenses, approvals or consent for activities described in the tailings closure plan (radon) proposed by the licensee that result from agency failure to take final action after the licensee has made a good faith, timely effort to submit legally sufficient applications, responses to requests (including relevant data requested by the agencies), or other information, including approval of the tailings closure plan by NRC or the affected Agreement State; and an act or omission of any third party over whom the licensee has no control.

(p) *Operational* means that a uranium mill tailings pile or impoundment is being used for the continued placement of uranium byproduct material or is in standby status for such placement. A tailings pile or impoundment is operational from the day that uranium byproduct material is first placed in the pile or impoundment until the day final closure begins.

(q) *Milestone* means an enforceable date by which action, or the occurrence of an event, is required for purposes of achieving compliance with the 20 pCi/m^2–s flux standard.

[48 FR 45946, Oct. 7, 1983, as amended at 58 FR 60355, Nov. 15, 1993]

§ 192.32 Standards.

(a) *Standards for application during processing operations and prior to the end of the closure period.* (1) Surface impoundments (except for an existing portion) subject to this subpart must be designed, constructed, and installed in such manner as to conform to the requirements of § 264.221 of this chapter, except that at sites where the annual precipitation falling on the impoundment and any drainage area contributing surface runoff to the impoundment is less than the annual evaporation from the impoundment, the requirements of § 264.228(a)(2)(iii)(E) referenced in § 264.221 do not apply.

(2) Uranium byproduct materials shall be managed so as to conform to the ground water protection standard in § 264.92 of this chapter, except that for the purposes of this subpart:

(i) To the list of hazardous constituents referenced in § 264.93 of this chapter are added the chemical elements molybdenum and uranium.

(ii) To the concentration limits provided in Table 1 of § 264.94 of this chapter are added the radioactivity limits in Table A of this subpart.

(iii) Detection monitoring programs required under § 264.98 to establish the standards required under § 264.92 shall be completed within one (1) year of promulgation.

(iv) The regulatory agency may establish alternate concentration limits (to be satisfied at the point of compliance specified under § 264.95) under the criteria of § 264.94(b), provided that, after considering practicable corrective actions, these limits are as low as reasonably achievable, and that, in any case, the standards of § 264.94(a) are satisfied at all points at a greater distance than 500 meters from the edge of the disposal area and/or outside the site boundary, and

(v) The functions and responsibilities designated in Part 264 of this chapter as those of the "Regional Administrator" with respect to "facility permits" shall be carried out by the regulatory agency, except that exemptions of hazardous constituents under §264.93 (b) and (c) of this chapter and alternate concentration limits established under §264.94 (b) and (c) of this chapter (except as otherwise provided in §192.32(a)(2)(iv)) shall not be effective until EPA has concurred therein.

(3)(i) Uranium mill tailings piles or impoundments that are nonoperational and subject to a license by the Nuclear Regulatory Commission or an Agreement State shall limit releases of radon-222 by emplacing a permanent radon barrier. This permanent radon barrier shall be constructed as expeditiously as practicable considering technological feasibility (including factors beyond the control of the licensee) after the pile or impoundment ceases to be operational. Such control shall be carried out in accordance with a written tailings closure plan (radon) to be incorporated by the Nuclear Regulatory Commission or Agreement State into individual site licenses.

(ii) The Nuclear Regulatory Commission or Agreement State may approve a licensee's request to extend the time for performance of milestones if, after providing an opportunity for public participation, the Nuclear Regulatory Commission or Agreement State finds that compliance with the 20 pCi/m^2-s flux standard has been demonstrated using a method approved by the NRC, in the manner required in 192.32(a)(4)(i). Only under these circumstances and during the period of the extension must compliance with the 20 pCi/m^2-s flux standard be demonstrated each year.

(iii) The Nuclear Regulatory Commission or Agreement State may extend the final compliance date for emplacement of the permanent radon barrier, or relevant milestone, based upon cost if the new date is established after a finding by the Nuclear Regulatory Commission or Agreement State, after providing an opportunity for public participation, that the licensee is making good faith efforts to emplace a permanent radon barrier; the delay is consistent with the definition of "available technology" in §192.31(m); and the delay will not result in radon releases that are determined to result in significant incremental risk to the public health.

(iv) The Nuclear Regulatory Commission or Agreement State may, in response to a request from a licensee, authorize by license or license amendment a portion of the site to remain accessible during the closure process to accept uranium byproduct material as defined in section 11(e)(2) of the Atomic Energy Act, 42 U.S.C. 2014(e)(2), or to accept materials similar to the physical, chemical and radiological characteristics of the in situ uranium mill tailings and associated wastes, from other sources. No such authorization may be used as a means for delaying or otherwise impeding emplacement of the permanent radon barrier over the remainder of the pile or impoundment in a manner that will achieve compliance with the 20 pCi/m^2-s flux standard, averaged over the entire pile or impoundment.

(v) The Nuclear Regulatory Commission or Agreement State may, in response to a request from a licensee, authorize by license or license amendment a portion of a pile or impoundment to remain accessible after emplacement of a permanent radon barrier to accept uranium byproduct material as defined in section 11(e)(2) of the Atomic Energy Act, 42 U.S.C. 2014(e)(2), if compliance with the 20 pCi/m^2-s flux standard of §192.32(b)(1)(ii) is demonstrated by the licensee's monitoring conducted in a manner consistent with §192.32(a)(4)(i). Such authorization may be provided only if the Nuclear Regulatory Commission or Agreement State makes a finding, constituting final agency action and after providing an opportunity for public participation, that the site will continue to achieve the 20 pCi/m2−s flux standard when averaged over the entire impoundment.

(4)(i) Upon emplacement of the permanent radon barrier pursuant to 40 CFR 192.32(a)(3), the licensee shall conduct appropriate monitoring and analysis of the radon-222 releases to demonstrate that the design of the permanent radon barrier is effective in limiting releases of radon-222 to a level

not exceeding 20 pCi/m²–s as required by 40 CFR 192.32(b)(1)(ii). This monitoring shall be conducted using the procedures described in 40 CFR part 61, Appendix B, Method 115, or any other measurement method proposed by a licensee that the Nuclear Regulatory Commission or Agreement State approves as being at least as effective as EPA Method 115 in demonstrating the effectiveness of the permanent radon barrier in achieving compliance with the 20 pCi/m²–s flux standard.

(ii) When phased emplacement of the permanent radon barrier is included in the applicable tailings closure plan (radon), then radon flux monitoring required under §192.32(a)(4)(i) shall be conducted, however the licensee shall be allowed to conduct such monitoring for each portion of the pile or impoundment on which the radon barrier has been emplaced by conducting flux monitoring on the closed portion.

(5) Uranium byproduct materials shall be managed so as to conform to the provisions of:

(i) Part 190 of this chapter, "Environmental Radiation Protection Standards for Nuclear Power Operations" and

(ii) Part 440 of this chapter, "Ore Mining and Dressing Point Source Category: Effluent Limitations Guidelines and New Source Performance Standards, Subpart C, Uranium, Radium, and Vanadium Ores Subcategory."

(6) The regulatory agency, in conformity with Federal Radiation Protection Guidance (FR, May 18, 1960, pgs. 4402-4403), shall make every effort to maintain radiation doses from radon emissions from surface impoundments of uranium byproduct materials as far below the Federal Radiation Protection Guides as is practicable at each licensed site.

(b) *Standards for application after the closure period.* At the end of the closure period:

(1) Disposal areas shall each comply with the closure performance standard in §264.111 of this chapter with respect to nonradiological hazards and shall be designed[1] to provide reasonable assurance of control of radiological hazards to

(i) Be effective for one thousand years, to the extent reasonably achievable, and, in any case, for at least 200 years, and,

(ii) Limit releases of radon-222 from uranium byproduct materials to the atmosphere so as to not exceed an average[2] release rate of 20 picocuries per square meter per second (pCi/m2s).

(2) The requirements of §192.32(b)(1) shall not apply to any portion of a licensed and/or disposal site which contains a concentration of radium-226 in land, averaged over areas of 100 square meters, which, as a result of uranium byproduct material, does not exceed the background level by more than:

(i) 5 picocuries per gram (pCi/g), averaged over the first 15 centimeters (cm) below the surface, and

(ii) 15 pCi/g, averaged over 15 cm thick layers more than 15 cm below the surface.

[48 FR 45946, Oct. 7, 1983, as amended at 58 FR 60355-60356, Nov. 15, 1993]

§192.33 Corrective action programs.

If the ground water standards established under provisions of §192.32(a)(2) are exceeded at any licensed site, a corrective action program as specified in §264.100 of this chapter shall be put into operation as soon as is practicable, and in no event later than eighteen (18) months after a finding of exceedance.

§192.34 Effective date.

Subpart D shall be effective December 6, 1983.

TABLE A TO SUBPART D

	pCi/liter
Combined radium-226 and radium-228	5

[1] The standard applies to design with a monitoring requirement as specified in §192.32(a)(4).

[2] This average shall apply to the entire surface of each disposal area over periods of at least one year, but short compared to 100 years. Radon will come from both uranium byproduct materials and from covering materials. Radon emissions from covering materials should be estimated as part of developing a closure plan for each site. The standard, however, applies only to emissions from uranium byproduct materials to the atmosphere.

Attachment Q

US Code as of: 01/03/99

Sec. 6905. Application of chapter and integration with other Acts

- (a) Application of chapter
  Nothing in this chapter shall be construed to apply to (or to authorize any State, interstate, or local authority to regulate) any activity or substance which is subject to the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), the Safe Drinking Water Act (42 U.S.C. 300f et seq.), the Marine Protection, Research and Sanctuaries Act of 1972 (16 U.S.C. 1431 et seq., 1447 et seq., 33 U.S.C. 1401 et seq., 2801 et seq.), or the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.) except to the extent that such application (or regulation) is not inconsistent with the requirements of such Acts.

- (b) Integration with other Acts
  - (1) The Administrator shall integrate all provisions of this chapter for purposes of administration and enforcement and shall avoid duplication, to the maximum extent practicable, with the appropriate provisions of the Clean Air Act (42 U.S.C. 7401 et seq.), the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), the Safe Drinking Water Act (42 U.S.C. 300f et seq.), the Marine Protection, Research and Sanctuaries Act of 1972 (16 U.S.C. 1431 et seq., 1447 et seq., 33 U.S.C. 1401 et seq., 2801 et seq.), and such other Acts of Congress as grant regulatory authority to the Administrator. Such integration shall be effected only to the extent that it can be done in a manner consistent with the goals and policies expressed in this chapter and in the other acts referred to in this subsection.
  - (2)
    - (A) As promptly as practicable after November 8, 1984, the Administrator shall submit a report describing -
      - (i) the current data and information available on emissions of polychlorinated dibenzo-p-dioxins from resource recovery facilities burning municipal solid waste;
      - (ii) any significant risks to human health posed by these emissions; and
        (iii) operating practices appropriate for controlling these emissions.
    - (B) Based on the report under subparagraph (A) and on any future information on such emissions, the Administrator may publish advisories or guidelines regarding the control of dioxin emissions from such facilities. Nothing in this paragraph shall be construed to preempt or otherwise affect the authority of the Administrator to promulgate any regulations under the Clean Air Act (42 U.S.C. 7401 et seq.) regarding emissions of polychlorinated dibenzo-p-dioxins.
  - (3) Notwithstanding any other provisions of law, in developing solid waste plans, it is the intention of this chapter that in determining the size of a waste-to-energy facility, adequate provisions shall be given to the present and reasonably anticipated future needs, including those needs created by thorough implementation of section 6962(h) of this title, of the recycling and resource recovery interests within the area encompassed by the solid waste plan.

- (c) Integration with the Surface Mining Control and Reclamation Act of 1977
  - (1) No later than 90 days after October 21, 1980, the Administrator shall review any regulations applicable to the treatment, storage, or disposal of any coal mining wastes or overburden promulgated by the Secretary of the Interior under the Surface Mining and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.). If the Administrator determines that any requirement of final regulations promulgated under any section of subchapter III of

this chapter relating to mining wastes or overburden is not adequately addressed in such regulations promulgated by the Secretary, the Administrator shall promptly transmit such determination, together with suggested revisions and supporting documentation, to the Secretary.

- (2) The Secretary of the Interior shall have exclusive responsibility for carrying out any requirement of subchapter III of this chapter with respect to coal mining wastes or overburden for which a surface coal mining and reclamation permit is issued or approved under the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.). The Secretary shall, with the concurrence of the Administrator, promulgate such regulations as may be necessary to carry out the purposes of this subsection and shall integrate such regulations with regulations promulgated under the Surface Mining Control and Reclamation Act of 1977.

Attachment R

UNITED STATES PUBLIC LAWS
98th Congress - Second Session
Convening January 23, 1984

DATA SUPPLIED BY THE U.S. DEPARTMENT OF JUSTICE. (SEE SCOPE)
Additions and Deletions are not identified in this document.

PL 98-616 (HR 2867)
NOVEMBER 8, 1984

An Act to amend the Solid Waste Disposal Act to authorize appropriations for the fiscal years 1985 through 1988, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE AND TABLE OF CONTENTS

SECTION 1. This Act "42 USC 6901' may be cited as "The Hazardous and Solid Waste Amendments of 1984'.

AUTHORIZATIONS FOR FISCAL YEARS 1985 THROUGH 1988

SEC. 2. (a) Section 2007(a) of the Solid Waste Disposal Act "42 USC 6916' (relating to general authorization) is amended by striking out "and $80,000,000 for the fiscal year ending September 30, 1982' and substituting "$80,000,000 for the fiscal year ending September 30, 1982, $70,000,000 for the fiscal year ending September 30, 1985, $80,000,000 for the fiscal year ending September 30, 1986, $80,000,000 for the fiscal year ending September 30, 1987, and $80,000,000 for the fiscal year 1988'.

(b) Section 3011(a) of the Solid Waste Disposal Act "42 USC 6931' (relating to State hazardous waste programs) is amended by striking out "and $40,000,000 for fiscal year 1982' and substituting "$40,000,000 for the fiscal year 1982, $55,000,000 for the fiscal year 1985, $60,000,000 for the fiscal year 1986, $60,000,000 for the fiscal year 1987, and $60,000,000 for the fiscal year 1988'.

(c) Section 3012 of the Solid Waste Disposal Act "42 USC 6933' (relating to the hazardous waste inventory) is amended by striking out "$20,000,000' in subsection (c)(2) and inserting in lieu thereof "$25,000,000 for each of the fiscal years 1985 through 1988'.

(d) Section 4008(a)(1) of the Solid Waste Disposal Act "42 USC 6948' (relating to development and implementation assistance) is amended by striking out "and $20,000,000 for fiscal year 1982' and substituting "$20,000,000 for the fiscal year 1982, and $10,000,000 for each of the fiscal years 1985 through 1988'.

(e) Section 4008(a)(2)(C) of the Solid Waste Disposal Act "42 USC 6948' (relating to implementation assistance) is amended by striking out "and $10,000,000 for fiscal year 1982' and substituting "$10,000,000 for fiscal year 1982, and $10,000,000 for each of the fiscal years 1985 through 1988'.

"(f) UNDERGROUND STORAGE TANKS. -- (1) There are authorized to be appropriated to the Administrator for the purpose of carrying out the provisions of subtitle I (relating to regulation of underground storage tanks),

"(5) innovative uses of closed landfill sites, including use for energy production such as solar or wind energy and use for metals recovery;

"(6) potential for use of sewage treatment sludge in reclaiming landfilled areas; and

"(7) methods to coordinate use of a landfill owned by one municipality by nearby municipalities, and to establish equitable rates for such use, taking into account the need to provide future landfill capacity to replace that so used.

The Administrator is authorized to conduct demonstrations in the areas of study provided in this subsection. The Administrator shall periodically report on the results of such studies, with the first such report not later than October 1, 1986. In carrying out this subsection, the Administrator need not duplicate other studies which have been completed and may rely upon information which has previously been compiled.'.

URANIUM MILL TAILINGS

SEC. 703. Nothing in the Hazardous and Solid Waste Amendments of 1984 "42 USC 6905' shall be construed to affect, modify, or amend the Uranium Mill Tailings Radiation Control Act of 1978 "42 USC 7901'.

NATIONAL GROUND WATER COMMISSION

SEC. 704. (a) There is established a commission to be known as the National Ground Water Commission (hereinafter in this section referred to as the "Commission').

(b) The duties of the Commission are to:

(1) Assess generally the amount, location, and quality of the Nation's ground water resources.

(2) Identify generally the sources, extent, and types of ground water contamination.

(3) Assess the scope and nature of the relationship between ground water contamination and ground water withdrawal and develop projections of available, usable ground water in future years on a nationwide basis.

(4) Assess the relationship between surface water pollution and ground water pollution.

(5) Assess the need for a policy to protect ground water from degradation caused by contamination.

(6) Assess generally the extent of overdrafting of ground water resources, and the adequacy of existing mechanisms for preventing such overdrafting.

(7) Assess generally the engineering and technological capability to recharge aquifers.

(8) Assess the adequacy of the present understanding of ground water recharge zones and sole source aquifers and assess the adequacy of knowledge regarding the interrelationship of designated aquifers and recharge zones.

(9) Assess the role of land-use patterns as these relate to protecting ground water from contamination.

(10) Assess methods for remedial abatement of ground water contamination as well as the costs and benefits of cleaning up polluted ground water and compare cleanup costs to the costs of substitute water supply methods.

(11) Investigate policies and actions taken by foreigh governments to protect ground water from contamination.

Attachment 5

has exercised due care in the past or present handling, storage, treatment, transportation and disposal of such waste.".

On page 20, line 18, insert immediately after "(g)." the following:

"A transporter shall not be deemed to have contributed or to be contributing to such handling, storage, treatment, or disposal, taking place after such solid waste or hazardous waste has left the possession or control of such transporter, if the transportation of such waste was under a pre-contractual arrangement arising from a published tariff and acceptance for carriage by common carrier by rail and such transporter has exercised due care in the past or present handling, storage, treatment, transportation and disposal of such waste.".

AMENDMENT No. 3402

(Purpose: To clarify the Uniform Manifest requirements)

Proposed by Mr. CHAFEE (for himself and Mr. RANDOLPH).

On page 20, line 18, after "manifest" insert "promulgated under this Act".

On page 21, beginning line 1, strike all through page 22, line 8.

On page 22, line 10, strike "(3)" and insert in lieu thereof "(2)".

On page 22, line 11, strike "(7)" each place it occurs and insert in lieu thereof "(6)".

On page 23, line 20, strike "(4)" and insert in lieu thereof "(3)" and strike "paragraphs (3) and (5)" and insert in lieu thereof "paragraph (3)".

On page 23, line 24, strike "(5)" and insert in lieu thereof "(4)".

On page 24, line 5, strike "(6)" and insert in lieu thereof "(5)".

On page 24, line 14, strike "(7)" and insert in lieu thereof "(6)".

On page 24, line 18, strike all after "practices." through line 14.

On page 25, line 18, strike "(8)" and insert in lieu thereof "(4)".

On page 26, line 25, strike "(9)" and insert in lieu thereof "(7)".

AMENDMENT No. 3403

(Purpose: To make a clarifying amendment on the use of absorbents)

Proposed by Mr. CHAFEE (for himself and Senators STAFFORD, RANDOLPH, and MITCHELL).

On page 44, beginning on line 2, strike "(including the solidification of free liquids by other means than the addition of absorbent material, where technologically feasible)".

On page 44, line 8, insert immediately after "landfills." the following new sentence: "Such regulations shall also prohibit the disposal in landfills of liquids that have been absorbed in materials that biodegrade or that release liquids when compressed as might occur during routine landfill operation.".

On page 44, line 8, strike "of" immediately after "disposal" and insert in lieu thereof "in".

AMENDMENT No. 3404

(Purpose: To substitute the phrase "oily materials" for the more narrowly defined term "used oil")

Proposed by Mr. CHAFEE (for himself and Senators STAFFORD, RANDOLPH, and MITCHELL).

On page 60, lines 4 and 5, strike "used oil" each place it appears and insert in lieu thereof "oily materials".

On page 60, line 4, insert a comma immediately after "refining".

AMENDMENT No. 3405

(Purpose: To delete deadline for EPA to determine appropriateness of using extraction procedure toxicity characteristics for evaluating delisting petitions)

Proposed by Mr. CHAFEE (for himself and Senators STAFFORD, RANDOLPH, and MITCHELL).

On page 33, strike lines 14 through 23 and insert in lieu thereof the following:

"(D) not later than twenty-eight months after the date of enactment of the Solid Waste Disposal Act Amendments of 1984, make".

AMENDMENT No. 3406

(Purpose: To make locational criteria applicable if Administrator fails to meet land disposal limitation deadlines)

Proposed by Mr. CHAFEE (for himself and Senators STAFFORD, RANDOLPH, and MITCHELL).

On page 43, lines 19, strike "(1)" immediately after "3004(f)".

AMENDMENT No. 3407

(Purpose: To clarify authority of Administrator to establish treatment standards applicable to land disposal practices)

Proposed by Mr. CHAFEE (for himself and Senators STAFFORD, RANDOLPH, and MITCHELL).

On page 38, line 7, insert "(other than paragraph (7)" immediately after "subparagraph".

On page 43, line 18, insert "levels or" immediately after "those".

On page 43, lines 19 to 22, strike "are necessary before such method or methods of disposal of such hazardous waste would be protective of human health and the environment" and insert in lieu thereof "substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized".

On page 43, lines 23 to 25, and on page 44, lines 1 and 2, strike all after "environment." and insert in lieu thereof the following:

"If such hazardous waste has been treated to the level or by a method specified in regulations promulgated under this paragraph, such waste or residue thereof shall not be subject to any prohibition promulgated under paragraph (1) of this subsection and may be disposed of in a land disposal facility which meets the requirements of this subtitle. Any regulation promulgated under this paragraph for a particular hazardous waste shall become effective on the same date as any applicable prohibition promulgated under paragraph (1) of this subsection."

AMENDMENT No. 3408

(Purpose: To clarify application of requirement to conduct ground water monitoring)

Proposed by Mr. CHAFEE (for himself and Senators BOSCHWITZ, STAFFORD, RANDOLPH, and MITCHELL).

On page 58, line 18, strike the quotation marks and final period, and after line 18 insert the following:

"This subsection shall not be construed to affect other exemptions or waivers from such standards provided in regulations in effect on the date of enactment of the Solid Waste Disposal Act Amendments of 1984 or as may be provided in revisions to those regulations, to the extent consistent with this subsection. The Administrator is authorized on a case-by-case basis to exempt from ground water monitoring requirements under this section (including subsection (f)) any engineered structure which the Administrator finds does not receive or contain liquid waste (for waste containing free liquids), is designed and operated to exclude liquid from precipitation or other runoff, utilizes multiple leak detection systems within the outer layer of containment, and provides for continuing operation and maintenance of these leak detection systems during the operating period, closure, and the period required for post-closure monitoring and for which the Administrator concludes on the basis of such findings that there is a reasonable certainty hazardous constituents will not migrate beyond the outer layer of containment prior to the end of the period required for post-closure monitoring.".

AMENDMENT No. 3409

(Purpose: To clarify scope of new section 3004(s) ban on certain wells)

Proposed by Mr. CHAFEE (for himself and Senators STAFFORD, RANDOLPH, and MITCHELL).

RESTRICTION OF TREATED GROUND WATER

On page 44, line 23, after "water." insert the following: "This subsection shall not apply to the injection of contaminated ground water into the aquifer from which it was withdrawn, if such injection is a response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or part of corrective action required under this title intended to clean up such contamination and such contaminated ground water is treated to substantially reduce hazardous constituents prior to such injection."

AMENDMENT No. 3410

(Purpose: To clarify authority of Administrator to modify application of certain requirements to some mining wastes)

Proposed by Mr. CHAFEE (for himself and Senators BOSCHWITZ and RANDOLPH).

MINING WASTE AMENDMENT

On page 40, beginning on line 18, through line 2 on page 40, strike the sentence following "the environment.".

At the end of S. 757, add the following new section:

"Sec. . Section 3004 of the Solid Waste Disposal Act is amended by adding at the end thereof the following new subsection:

"( ) If solid waste from the extraction, beneficiation or processing of ores and minerals, including phosphate rock and overburden from the mining of uranium ore, is subject to regulation under this subtitle, the Administrator is authorized to modify the requirements of subsections (h), (m)(1) (other than the requirement for ground water monitoring), and (g), in the case of landfills or surface impoundments receiving such solid waste, to take into account the special characteristics of such wastes, the practical difficulties associated with implementation of such requirements, and site-specific characteristics, including but not limited to the climate, geology, hydrology and soil chemistry at the site, so long as such modified requirements assure protec-

tion of human health and the environment.'."

AMENDMENT No. 2402

(Purpose: To assure that the Solid Waste Disposal Act Amendments of 1984 do not affect, modify, or amend the Uranium Mill Tailings Radiation Control Act of 1978, as amended)

Proposed by Mr. CHAFEE (for himself and Senator SIMPSON).

Amend S. 757 by adding the following new section:

"DRAFTING RULE: TAILORING

"SEC. . Nothing in the Solid Waste Disposal Act Amendments of 1984 shall be construed to affect, modify, or amend the Uranium Mill Tailings Radiation Control Act of 1978, as amended.".

AMENDMENT No. 2403

(Purpose: To establish minimum technological requirements for existing surface impoundments)

Proposed by Mr. CHAFEE (for himself and Senators BENTSEN, STAFFORD, RANDOLPH, and MITCHELL).

On page 48, after line 18, insert the following:

(a)(1) Section 3005(e) of the Solid Waste Disposal Act is amended by inserting "(1)" after "Interim Status.", by redesignating paragraphs (1), (2), and (3) as subparagraphs (A), (B), and (C), and by adding the following new paragraph:

"(2)(A) Except as provided in subparagraph (C), each surface impoundment in existence on the date of enactment of the Solid Waste Disposal Act Amendments of 1984 and qualifying for the authorization to operate under paragraph (1) of this subsection, which—

"(i) does not have at least one liner, for which there is no evidence that such liner is leaking, or

"(ii) is located in an area of vulnerable hydrogeology as defined in subparagraph (G) or as determined by criteria or guidance for the acceptable location of facilities issued in accordance with section 3004(f),

shall not receive, store, or treat hazardous waste after the date four years after such date of enactment unless such surface impoundment is in compliance with the requirements of section 3004(f) which would apply to such impoundment if it were new. For the purposes of clause (i) of this subparagraph, the term "liner" means a liner meeting the requirements of regulations for new surface impoundments in effect as of such date of enactment, and that the surface impoundment is in compliance with generally applicable ground water monitoring requirements for facilities with permits under subsection (c) of this section.

"(B) The Administrator (or the State, in the case of a State with an authorized program), after notice and opportunity for comment, may modify the requirements of subparagraph (A) for any surface impoundment if, not later than 24 months after the date of enactment of the Solid Waste Disposal Act Amendments of 1984, the owner or operator demonstrates that such surface impoundments is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any time during the period hazardous waste remains in such surface impoundment. Within 12 months after the receipt of evidence submitted under this subparagraph and not later than 36 months after such date of enactment, the Administrator (or, if appropriate, the State) shall advise such owner or operator as to whether and, if so, how the requirements of subparagraph (A) shall be modified and applied to such surface impoundment.

"(C) Subparagraph (A) of this paragraph shall not apply to any surface impoundment which (i) contains treated waste water during the secondary or tertiary phase of an aggressive biological treatment facility subject to a permit issued under section 402 of the Clean Water Act for which basis such treated waste water after treatment and prior to discharge), (ii) is in compliance with generally applicable ground water monitoring requirements for facilities with permits under subsection (c) of this section, and (iii) is part of a facility in compliance with section 301(b)(2) of the Clean Water Act, or, in the case of a facility for which no effluent guidelines required under section 304(b)(2) of the Clean Water Act are in effect and no permit under section 402(a)(1) of such Act implementing section 301(b)(2) of such Act has been issued, is part of a facility in compliance with a permit under section 402 of the Clean Water Act which is achieving significant degradation of toxic pollutants and hazardous constituents contained in the untreated waste stream and which has identified those toxic pollutants and hazardous constituents in the untreated waste stream to the appropriate permitting authority. The Administrator shall study and report to the Congress on the number, range of size, construction, likelihood of hazardous constituents migrating into ground water, and potential threat to human health and the environment of existing surface impoundments excluded by this subparagraph from the requirements of subparagraph (A). Each report shall address the need, feasibility, and estimated costs of subjecting such existing surface impoundments to the requirements of subparagraph (A). In the case of any existing surface impoundment or class of surface impoundments from which the Administrator (or the State, in the case of a State with an authorized program) determines hazardous constituents are likely to migrate into ground water, the Administrator (or, if appropriate the State) is authorized to impose such requirements as may be necessary to protect human health and the environment, including the requirements of section 3004(f) which would apply to such impoundments if they were new.

"(D) The owner or operator of any surface impoundment potentially subject to subparagraph (A) of this paragraph who has reason to believe that on the basis of subparagraph (A)(i) or (ii) or subparagraph (C) such surface impoundment is not required to comply with the requirements of subparagraph (A) shall apply to the Administrator (or the State, in the case of a State with an authorized program) not later than 24 months after the date of enactment of the Solid Waste Disposal Act Amendments of 1984 for a determination of the applicability of subparagraph (A) to such surface impoundment. Such owner or operator shall provide evidence pertinent to such decision, including evidence as to compliance with ground water monitoring requirements and all reasonably ascertainable evidence on whether such surface impoundment is leaking. As part of such evidence an owner or operator relying on subparagraph (A)(i) or (ii) shall provide a certification by a registered professional engineer with academic training and experience in ground water hydrology that (i) such surface impoundment is not located in an area of vulnerable hydrogeology, (ii) the liner of such impoundment is designed, constructed, and operated in accordance with the requirements of regulations, and (iii) based on a review of ground water monitoring information and other available information, there is no evidence such liner is leaking. As part of such evidence an owner or operator relying on subparagraph (C) shall provide a certification by a registered professional engineer with academic training and experience in ground water hydrology that such surface impoundment satisfies the conditions set forth in clauses (i), (ii), and (iii) of subparagraph (C), based on analysis of those toxic pollutants and hazardous constituents that are likely to be present in the untreated waste stream, and that hazardous constituents are not likely to migrate from the impoundment into ground water. Within twelve months after the receipt of such evidence and not later than 24 months after such date of enactment, and after notice and opportunity for comment, the Administrator (or, if appropriate, the State) shall advise such owner or operator on the applicability of subparagraph (A) to such surface impoundment.

"(E) In any case in which a surface impoundment is initially determined to be excluded from the requirements of subparagraph (A) but due to a change in condition subsequently becomes subject to subparagraph (A), the period for compliance in subparagraph (A) shall be two years after the date of discovery of such change of condition. In any case in which a surface impoundment becomes subject to subparagraph (A) after the date of enactment of the Solid Waste Disposal Act Amendments of 1984 due to the promulgation of additional listings or characteristics for the identification of hazardous wastes under section 3001, the period for compliance in subparagraph (A) shall be four years after the date of such promulgation, the period for demonstrations under subparagraph (B) and for submission of evidence under subparagraph (D) shall be not later than 24 months after the date of such promulgation, and the period for the Administrator (or, if appropriate, the State) to advise such owners or operators under subparagraphs (B) and (D) shall be not later than 36 months after the date of promulgation.

"(F) In the case of any surface impoundment in which the liners and leak detection system have been installed pursuant to the requirements of this paragraph and in good faith compliance with section 3004(f) and the Administrator's regulations and guidance documents governing liners and leak detection systems, no liner or leaf detection system which is different from that which was not installed pursuant to this paragraph shall be required for such unit by the Administrator when issuing the first permit under this section to such facility. Nothing in this subparagraph shall preclude the Administrator from requiring installation of a new liner when the Administrator has reason to believe that any liner installed pursuant to the requirements of this paragraph is leaking.

(G) For the purposes of subparagraph (A)(ii), a surface impoundment is located in an area of vulnerable hydrogeology if the impoundment is over or hydrologically connected to—

"(i) a sole source aquifer, or

"(ii) a formation which contains an underground source of drinking water if such formation or the unsaturated soils hydrologi-

the environment by diminishing toxicity of wastes or reducing migration of hazardous constituents in wastes. Thus, if wastes treated as you describe are of low toxicity or if leachate from them contains safe levels of hazardous constituents, EPA may, in its discretion, promulgate regulations specifying the circumstances in which land disposal is authorized. In considering such questions, EPA will almost assuredly take into account whether vast quantities or only small amounts of such wastes are generated. I would anticipate that EPA will promptly determine whether such wastes meet the criteria in paragraph (7) and then promulgate the necessary regulations within the specified time. In making this determination, EPA will certainly use the best information available to it at the time.

AMENDMENT TO CLARIFY APPLICATION OF REQUIREMENT TO CONDUCT GROUND WATER MONITORING

This amendment will provide an incentive for the development of safer and more protective land disposal methods for hazardous waste. It would do so by giving the Administrator of EPA the authority, under certain limited circumstances, to exempt facilities from the groundwater monitoring requirement now included in S. 757.

The requirement for groundwater monitoring at conventional landfills, surface impoundments, and other treatment, storage or disposal facilities as set forth in the Bill, is retained. This amendment would authorize waiver of these requirements only when EPA can find that they are unnecessary. In order to make this finding, the Administrator would have to conclude that the facility would, in essence, be designed to incorporate the functional equivalent of groundwater monitoring within its self-contained structure. EPA would not make such a finding for a conventional land disposal facility.

A facility which could qualify for the exemption under this amendment must first of all be an engineered structure which receives only waste that is in solid form, such as contaminated soil or debris, or has been solidified. A facility accepting liquid waste, or waste containing free liquids, would be disqualified from further consideration for the exemption. A qualifying structure would also have to be engineered to have inner and outer layers of containment enclosing the waste.

The facility would also have to meet an additional series of stringent protective standards. It must be designed and operated to keep out water from precipitation or run-off. This means that the intrinsic engineering of the structure must keep water away from the waste. A conventional clay or synthetic cap would not be good enough. The facility would also have to incorporate internal leak detection and leachate collection systems. These systems, which would be built into the structure at each internal containment layer would provide the functional equivalent of groundwater monitoring. In the unlikely event that any leachate did form, the detection systems would signal the operator before any leachate reached the outer layer of containment.

An example of such a structure could be an above grade concrete bunker or vault within which waste would be placed, totally surrounded by multiple liners, and which would include internal leak detection systems above, between, and below the internal liners. An above grade bunker can be designed so that rainfall would run off the structure away from the waste. This would be in contrast to traditional below grade landfills where the rainwater can penetrate through the surface above the waste and move down through the waste, carrying leachate to groundwater.

Finally, the Administrator could not exempt any structure unless he was reasonably certain that no hazardous constituents from the facility would get out of the structure and reach ground, groundwater, or surface water. In other words, he would have to be sure, under reasonably foreseeable circumstances, that the structure would safely contain the waste and its constituents. Thus, the amendment does not give the EPA Administrator unbridled discretion to ignore the basic intent of the Bill. It does give him the authority to exempt groundwater monitoring when he finds that such monitoring would be unnecessary or redundant. It also gives the hazardous waste disposal industry an incentive to design facilities which are inherently safer and more protective.

AMENDMENT TO CLARIFY SCOPE OF NEW SECTION 3004(f) BAN ON CERTAIN WELLS

New Section 3004(f) as added by S. 757 would preclude the injection of ground water contaminated with hazardous waste into or above formations containing underground sources of drinking water even where such injection is part of a clean-up action under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) or RCRA. This amendment will clarify the intent of that provision and give EPA the discretion to allow the use of Class IV wells in certain limited circumstances to conduct clean-up operations.

The injection of hazardous waste into or above drinking water sources is an inherently dangerous disposal practice that poses an unacceptable risk to human health and the environment. This amendment does not alter the intent that such injection facilities be properly closed in short order and that new facilities not be allowed in the future.

While we seek to establish a complete prohibition on such injection as a disposal technique, we recognize the potential value of such injection practices as an integral part of some clean-up actions at hazardous waste sites. The pumping, treatment and re-injection of already contaminated water may be the preferred removal or remedial technique to assure adequate clean-up in a cost effective manner. We do not intend to bar such injections when they are environmentally beneficial and conducted solely as a means of clean-up, rather than as a form of initial disposal. The prohibition, therefore, is not intended to extend to those situations where injection into or above drinking water sources is used as a method to clean-up contaminated aquifers at hazardous waste sites and the clean-up plan has been approved under the procedures established under this Act or under the Comprehensive Environmental Response, Compensation and Liability Act.

AMENDMENT TO CLARIFY AUTHORITY OF ADMINISTRATOR TO MODIFY APPLICATION OF CERTAIN REQUIREMENTS TO SOME MINING WASTES

This amendment would modify and expand a provision of Section 8(a) of S. 757, as reported, concerning the authority of the Administrator of EPA to modify certain requirements that might become applicable to some mining wastes under Subtitle C of the Solid Waste Disposal Act.

The amendment provides that, if certain mining wastes become subject to regulation as hazardous wastes, the Administrator of EPA has the authority to modify the requirements of new subsections (b), (f)(1), and (g) of section 3004 regarding land disposal restrictions, minimum technological requirements for new landfills and surface impoundments (other than the groundwater monitoring requirement), and corrective action for releases of hazardous waste, as they apply to landfills and surface impoundments receiving such mining wastes, to take into account the special characteristics (e.g. high-volume, low-toxicity) of the mining wastes, the practical difficulties associated with the implementation of such requirements, and various site-specific factors. The modified requirements would continue to be subject to and must satisfy the law's underlying requirement and ultimate standard that RCRA regulations assure protection of human health and the environment. Practical or economic considerations can only be used to select among alternative requirements which assure protection of human health and the environment.

The purpose of this amendment is simply to assure that if the Administrator of EPA decides to regulate mining wastes under Subtitle C, he is not limited to the regulatory framework or standards that are developed under section 3004(b), (f)(1), and (g) for hazardous chemical wastes. The Committee Report (at p. 28-29) includes a description of some mining wastes and some of the reasons it may be inappropriate to subject them to the same requirements which apply to other types of waste.

Retention of the requirement that protection of human health and the environment be assured is not intended to invoke a specific technical standard of containment, such as a "no migration" standard. Such an interpretation would in fact completely frustrate the purpose of the amendment. In this context the phrase is used in a broad, overarching, nontechnical sense, which can only be translated into technical standards after careful consideration of all of the factors enumerated in the amendment.

This amendment is a clarification of the Administrator's existing authority. As with chemical and other hazardous wastes, the Administrator is able to choose from a range of regulatory options that will satisfy the mandate that protection of human health and the environment be assured. When faced with a specific problem, the Administrator can often identify several options, each of which would protect human health and the environment.●

MINING WASTE AMENDMENT

● Mr. SIMPSON. Mr. President, I wish to comment briefly on the mining waste amendment which is included in the package of committee amendments.

After S. 757 was reported it came to my attention that some high-volume, low-toxicity mining wastes might become subject to regulation under RCRA. This would not necessarily be inappropriate, but what did concern me was the possibility that such wastes might become subject to standards and regulations developed in an

entirely different context solely for the purpose of containing highly toxic chemical wastes.

This amendment was designed to ensure that the law will not require that mining wastes simply be lumped together with hazardous chemical wastes.

The amendment provides that if certain mining wastes become subject to regulation as hazardous wastes the Administrator of EPA will have the authority to modify the requirements of the act regarding land disposal limitations, minimum technological requirements for new landfills and surface impoundments—other than the ground water monitoring requirement—and corrective action for releases of hazardous waste, as they apply to such mining wastes, to take into account the special characteristics of the mining wastes, the practical difficulties associated with the management of such wastes, and various site-specific factors. The modified requirements would continue to be subject to the underlying requirement that they always assure protection of human health and the environment, which is, of course, the goal of all of the major environmental laws.

I think that it is important to point out that protection of public health and the environment is a broad, overarching goal, which is only given precise meaning within the context of a specific regulatory decision. Consequently, the Administrator would not be bound by a decision made in a different factual context in determining the appropriate manner in which to regulate mining wastes.

I wish to extend my gratitude to the floor manager of S. 757, Senator CHAFEE, for recognizing this problem and working closely with me to resolve it with this amendment.●

AMENDMENT TO CLARIFY AUTHORITY OF ADMINISTRATOR TO MODIFY APPLICATION OF CERTAIN REQUIREMENTS TO SOME MINING WASTES

● Mr. RANDOLPH. I am pleased to join as a sponsor of this amendment, and I agree with the description of the intent and need for this amendment given by the distinguished floor manager [Mr. CHAFEE].

This amendment is a clarification of the Administrator's existing authority. As we have made clear in the report and with other amendments, the Administrator is able to choose from a range of regulatory options that will satisfy the mandate that protection of human health and the environment be assured. When faced with a specific problem, the Administrator can often identify several options, each of which would protect human health and the environment. The Administrator is not required to select the option that would satisfy the statutory mandate in the most simple or most cost-effective manner. He has a responsibility to protect human health and the environment and, as such, may choose among several approaches. The selection of a particular approach is consistent with the law if it satisfies the statutory mandate and is not an arbitrary or capricious decision. Distinctions often can be and are made on the basis of waste characteristics, waste management practices and locational criteria. This amendment will simply clarify the Administrator's existing authority to make such distinctions in the specified instances. A letter from Administrator Ruckelshaus to Senator EVANS dated April 30, 1984, sets forth the Administrator's interpretation of EPA's existing authority to make such distinctions, and I ask to have it included in the RECORD at this point.

The letter follows:

ENVIRONMENTAL PROTECTION AGENCY,
Washington, DC, April 30, 1984.

Hon. ALAN K. SIMPSON,
U.S. Senate, Washington, DC.

DEAR ALAN: This responds to your letter of April 11, 1984, requesting clarification of EPA's authority to modify the Subtitle C standards for mining wastes subject to regulation under RCRA. As you know, mining wastes are temporarily excluded from regulation under Subtitle C of RCRA by Section 3001(b)(3)(A)(ii) pending completion of a study mandated by Sections 8002 (f) and (p) of the Act. Our current plan is to submit this report to Congress in the summer of 1985. Section 3001(b)(3)(C) of RCRA requires EPA within six months of submitting the study to determine (after notice and comment) whether to promulgate regulations for these wastes. If regulations are deemed warranted, the rulemaking process will be initiated. This process generally takes two years to complete.

EPA's mandate under Subtitle C is to write regulations for hazardous waste that protect human health and the environment. This does not preclude the Agency from taking into account the special characteristics of the waste when writing regulations. Thus, if a design standard is technically infeasible, or there are other methods to achieve the same protection at a lower cost, the Agency is allowed to modify the Subtitle C standards for the particular waste. EPA is not authorized, however, to tailor the standards if the sole reason for doing so is the high cost of the prescribed technology.

The Senate bill provides detailed direction on how to modify the existing hazardous waste rules, but does not prevent the Agency from designing special standards for mining waste within the framework of this directive. Two provisions in the bill appear to be generating particular concern. The first requires a double liner and leachate collection under new or extensions of existing disposal units. The bill allows the use of alternative design and operating practices that provide equivalent protection of groundwater and surface water. This variance could be applied, for example, where installing such a liner and leachate collection system is infeasible or ineffective. The second provision of concern is the prohibition on land disposal of hazardous wastes that contain significant concentrations of highly toxic, highly mobile and highly bioaccumulative constituents. EPA has not developed the criteria for determining which wastes to ban, or completed the mining waste study discussed above. We have difficulty, therefore, predicting the effect of the provision on the mining industry. We would note, however, that, even if some mining wastes were banned, a pending amendment to the bill authorizes EPA to prescribe pretreatment standards that allow disposal of such wastes where the mobility or toxicity of the constituents can be substantially minimized.

The desirability of increasing EPA's flexibility when writing standards for mining wastes can be better assessed after the Section 8002 mining waste study is completed, and the public has been given an opportunity to comment on it. As noted above, mining wastes will likely not become subject to regulation until at least 1988. It may be better to allow EPA to gather additional information on these wastes before amending the statute to provide EPA further discretion.

Sincerely,

WILLIAM D. RUCKELSHAUS.

Mr. President, of course, we recognize that under the ongoing reexamination of what wastes the mining waste suspension should apply to, some wastes—including previously listed wastes—may be regulated earlier than 1988 or even earlier than the conclusion of the study.

In adopting this clarifying amendment, we strike from the bill the mining waste waiver provisions of section 3004(f)(1) as no longer needed. The description of those provisions in the committee report, however, are a good description of our understanding and intent for the amendment we are adopting, and I ask that the appropriate portion of the report on S. 757 be included in the RECORD at this point.

The material follows:

MINING WASTES

Also included in this amendment is a provision which authorizes the Administrator to promulgate an exception to the double liner-leachate collection system requirement for certain wastes generated by the mining industry. The 1980 amendments to the Solid Waste Disposal Act (section 3001(b)(3)(A)(ii)) deferred from coverage under subtitle C, solid wastes from the extraction, beneficiation and processing of ores and minerals including phosphate rock, and overburden from uranium mining, pending completion of the studies mandated under section 8002 (f) and (p). These EPA studies have not been completed. When the studies are completed, the EPA is required to determine which of these wastes should be regulated under subtitle C.

Solid wastes from mining and mineral beneficiation and processing are primarily waste rock from the extraction process and crushed rock, commonly called tailings, produced from concentrating steps such as grinding, crushing, sorting, sizing, classification, washing, dewatering, amalgamation, gravity treatment, flotation, sedimentation and cyanidation. The 1980 amendments covered wastes from the initial stages of mineral processing, where concentrations of minerals of value are greatly increased through physical means, before applying secondary processes such as pyrometallurgical or electrolytic methods. Smelter slag might also be included. Massive volumes of this waste are are produced annually at mining and miner-

al processing facilities—roughly estimated by the American Mining Congress (AMC) to be approximately 1.75 billion tons in a typical year, which is clearly significantly greater in volume than the solid waste generated by all other industries combined. These wastes were considered "special wastes" under the 1978 proposed regulations as being of large volume and relatively low hazard.

On an individual mine basis, past AMC submissions for a typical lead/zinc underground mine producing 50,000 tons of metal per year requires removal of as much as 5,000-8,000 tons per day of rock. That tonnage breaks down as follows: roughly 1,000 tons per day of development rock, which is the rock that has to be removed to reach the ore, and 4,000 to 5,000 tons of mineral bearing ore. Of that 4,000-6,000 tons of ore, 150 to 200 tons of mineral concentrate are produced. Because of such large volumes of waste and rock tailings, mine surface impoundments and landfills typically cover large areas close to the mine. These land disposal facilities, unlike those of other industries, often cannot be dredged, bulldozed or dug out of the earth, and cover very large areas where the corresponding natural features, such as boulders, trees, stumps, depressions, and elevations, cannot always be reasonably cleared or excavated in connection with disposal. Maintaining the integrity of a liner with the massive weight of typical mining waste would be extremely difficult. Consequently, lining such areas may be impractical in many cases.

If landfills and surface impoundments containing mining and mineral processing wastes are determined by the Administrator to be appropriate for regulation under subtitle C after conclusion of the studies mandated under section 3001 (f) and (p) of the Act, new section 3004(f) requires groundwater monitoring at the site and whatever other requirements are necessary for the landfill or impoundment to assure the protection of human health and the environment. The Administrator must determine, however, whether to modify the statutory double liner-leachate collection system requirement for such mining wastes, and if he determines that requirement is not necessary to protect human health and the environment, he may promulgate substitute requirements. The amendment, therefore, preserves the performance standards of subtitle C but provides the Agency with the flexibility it needs to determine the most appropriate approach to manage the particular hazardous waste at the site. The amendment does not preclude EPA from requiring double lining of landfills or surface impoundments for mining and mineral processing wastes in those cases where it is appropriate to do so.

In making a determination on whether or not an exception to the double liner requirement for mining waste is appropriate, EPA is to consider whether the modified requirements assure protection of human health and the environment. Practical or economic considerations can only be used to select among alternative requirements which assure protection of human health and the environment.

The mining waste modification authority of this amendment does not cover wastes specifically listed as hazardous wastes prior to the 1980 legislation because of their hazardous nature.

AMENDMENT TO ASSURE THAT THE SOLID WASTE DISPOSAL ACT AMENDMENTS OF 1984 DO NOT AFFECT, MODIFY, OR AMEND THE URANIUM MILL TAILINGS RADIATION CONTROL ACT OF 1978, AS AMENDED

This amendment is designed to assure that the Solid Waste Disposal Act Amendments of 1984 do not affect, modify, or amend the Uranium Tailings Radiation Control Act of 1978, as amended.

S. 757, as it was reported from Committee, includes a number of provisions which, if adopted in their present form, may have a significant impact on the regulatory program established by the Congress for uranium mill tailings. That program is now underway pursuant to the Uranium Mill Tailings Radiation Control Act of 1978, as amended (UMTRCA)—the statute that establishes the basic framework and the underlying legal authority for uranium mill tailings regulation.

A question was raised during the Committee's consideration of this bill as to whether the restrictions on land disposal contained in section 3 are intended to apply to uranium or thorium tailings subject to regulation under UMTRCA. As stated in the Committee Report at page 21, section 3 is not intended to affect the statutory program that has been established by Congress in UMTRCA.

In addition to section 3 of the bill, it appears that there are other provisions of S. 757 which may, in the absence of further clarification, also have an impact on the regulatory program for uranium mill tailings. Although S. 757 does not directly amend UMTRCA, it does change, in a number of respects, the Solid Waste Disposal Act. And because UMTRCA requires that certain standards promulgated pursuant to UMTRCA "shall provide for the protection of human health and the environment consistent with the standards required under subtitle C of the Solid Waste Disposal Act, as amended, which are applicable to such hazards", it does, in fact, appear that the potential exists for construing S. 757 as requiring changes in the uranium mill tailings regulatory program, in order to ensure continuing "consistency" with the standards of the Solid Waste Disposal Act, as amended.

This is not the Committee's intent, and this amendment is intended to clarify that nothing in S. 757 is intended to affect, modify, or amend UMTRCA—the basic statutory authority for the regulation of mill tailings. Similarly, the Committee did not intend to alter, amend, repeal, ratify, or suspend any of the regulations or standards of the Nuclear Regulatory Commission or the Environmental Protection Agency, if they were lawfully promulgated in accordance with the requirements of UMTRCA.

S. 757 is not intended, and should not be construed, to require changes in the regulatory program for mill tailings that is now underway, in order to satisfy the statutory requirement of UMTRCA that certain standards promulgated under that Act for the regulation of uranium mill tailings should be "consistent" with the standards of the Solid Waste Disposal Act, as amended. To the extent that S. 757 acts to, or modifies the provisions of, the Solid Waste Disposal Act, as amended, this amendment would clarify that the uranium mill tailings regulatory program need not be changed to meet these new or modified requirements for the purpose of satisfying the statutory requirements of UMTRCA that certain standards promulgated pursuant to UMTRCA shall be consistent with the standards of the Solid Waste Disposal Act, as amended.

The regulatory program promulgated pursuant to UMTRCA is a controversial program that is being challenged in the courts by both environmental groups and industry. Both the standards promulgated by EPA and the regulations promulgated by NRC are in question. By adopting this amendment, Congress is neither endorsing nor withholding the existing regulatory program.

I should like to emphasize that this amendment would not limit or otherwise affect in any way the Administrator's authority or flexibility to treat uranium mill tailings wastes in a fashion similar to the approach taken for all other mining wastes that are subject to regulation under RCRA. Indeed, if the Administrator should decide to exercise his authority to tailor the requirements of RCRA to address the special characteristics of mining wastes, in general—an authority which, in a separate amendment, we have confirmed the current law provides—then the Administrator shall, if he deems it appropriate, pursue a similar approach for uranium mill tailings wastes.

I would also note that, in several instances, this bill either endorses or repeals existing portions of EPA's RCRA regulatory program. By doing so, and by being silent on other portions of that program, we do not intend to tacitly endorse portions of the RCRA regulations. The volume and complexity of these regulations makes such an assumption unreasonable.

URANIUM MILL TAILINGS AMENDMENT

Mr. SIMPSON. Mr. President, I am most grateful for the efforts of the Senator from Rhode Island and of his staff to assist us in the resolution of this complex issue, and I am pleased to join him as a cosponsor of this amendment. I trust that this provision will serve to clarify much of the confusion that might otherwise have arisen over the applicability of the various new or amended provisions included in S. 757, and thereby we can enable the Uranium Mill Tailings Regulatory Program to move forward. In addition, I am pleased to have the important assurances of the Senator from Rhode Island that the Administrator of EPA has the broad latitude to treat uranium mill tailings wastes in a fashion similar to the approach that he takes for all other mining wastes covered by RCRA, and that he is agreeable to confirming this broad discretionary authority in a separate amendment agreed to by the Senate on this bill. Indeed, since uranium mill tailings wastes are similar in nature to other mining wastes because of their high-volume, low-toxicity nature, such an approach makes a great deal of sense and it would satisfy the requirement of UMTRCA that EPA's generally applicable standards for nonradiological hazards shall provide for the protection of human health and the environment consistent with the standards required under subtitle C of the Solid Waste Disposal Act, as amended, which are applicable to such hazards, while at the same time ensuring ap-

propriate and uniform treatment of all mining wastes.

RESPONSE TO ESTABLISH MINIMUM TECHNOLOGICAL REQUIREMENTS FOR EXISTING SURFACE IMPOUNDMENTS

This amendment establishes a minimum technological retrofit requirement (double liners or equivalency) for certain existing surface impoundments as an interim status requirement, and provides statutory guidance on what qualifies as a liner.

Surface impoundments in interim status must come into compliance with the minimum technological double liner and leak detection requirements of new section 3004(f) within 4 years after enactment, or stop receiving hazardous waste. Permit action is not required.

Surface impoundments with one or more intact liner that meets current EPA requirements, as set forth in 40 CFR 264.221(a), are not subject to this requirement, unless located in an area of vulnerable hydrogeology as defined in subparagraph (G) or as determined by criteria or guidance issued by EPA. One condition of this exclusion is compliance with those portions of the groundwater monitoring requirements contained in 40 CFR Part 264 that are not dependent upon issuance of a permit.

Surface impoundments which contains treated waste water during or after the secondary or tertiary phase of an aggressive biological treatment facility—subject to a permit issued under section 402 of the Clean Water Act are not subject to this requirement, if those portions of the groundwater monitoring requirements contained in 40 CFR Part 264 that are not dependent upon issuance of a permit are being complied with and if the impoundment is part of a facility that is compliance with best available technology effluent guidelines issued under the Clean Water Act. For those facilities for which no BAT guidelines are in effect and no Clean Water Act permit implementing such guidelines has been issued the facility must be in compliance with a Clean Water permit, and must have identified to the appropriate permitting authority the toxic pollutants and hazardous constituents contained in the untreated waste stream and be achieving significant degradation of those pollutants and constituents.

EPA or an authorized State may waive the section 3004(f) technology requirements for existing impoundments if the operator demonstrates the facility is located, designed and operated so as to ensure no migration of a hazardous constituent into ground or surface water which waste remains in the impoundment.

All of the provisions of section 3004(f) apply for existing surface impoundments; that is, operators may demonstrate that alternative technologies prevent migration at least as effectively as double liners, and certain mining wastes may be exempted from the double liner requirements.

Surface impoundments that retrofit in compliance with this section on the statutory deadline and EPA guidance documents, could not be required to do more at the time of their first permit unless there is evidence of leakage.

Until EPA regulations or guidance documents are published, a satisfactory upper liner is defined as one which prevents infiltration into the liner during the operating and post-closure monitoring period, and a satisfactory lower liner is one which prevents migration through the liner in such period. Three feet of 10^{-7} cm/second permeability clay constitutes an adequate lower liner.

One variance from the double liner requirement allows a single liner, that meets the current 40 CFR 264.221(a) liner requirements, provided that there is no evidence that such liner is leaking. Evidence that the liner is leaking includes: (1) contaminants from the impoundment detected in ground water; (2) seeps and leaks observed coming out of the impoundment dike; and (3) a sudden or unexplained drop in the fluid level in the impoundment. Any one of these three conditions is evidence that the liner is leaking. To make these determinations, the impoundment owner and operator must: (1) monitor ground water downgradient and upgradient of the impoundment and compare these for significant differences; (2) periodically inspect the whole outside perimeter of the dike for seeps and leaks; and (3) monitor the fluid level in the impoundment and do a liquid balance (i.e., compare the level expected based on a calculation of inflow, outflow, and precipitation/evaporation with the actual fluid level). Of course, a sudden drop in liquid level in an impoundment without an outflow of essentially equivalent volume is an indication of a major leak. The variance does not apply wherever such evidence of a leak exists.

This amendment is meant to provide only a minimum level of protection during interim status. EPA can require higher level of protection and is free to require more sophisticated liner systems and/or compliance with locational criteria as part of a corrective action order or as a permit requirement.

Since the early 1900s, liquid industrial wastes or wastes containing liquids have been dumped into "surface impoundments"—natural ponds, pits and lagoons, or shallow excavated depressions in the ground above the water table. Surface impoundments of chemical wastes are used to separate, through evaporation, solid wastes from the water in which they are suspended and for the disposal, temporary storage, and treatment of industrial wastes.

The use of surface impoundments poses a threat to public health and the environment because the wastes deposited in them escape. The pressure of the liquids forces hazardous contents to flow downward into the surrounding soils where even dilute concentrations of toxic substances can, over time, pollute the ground water. Heavy rainfall can cause ponds to overflow into surrounding areas, resulting in contamination of nearby streams and, eventually, contamination of subsurface waters. Many of the most dangerous contaminations that in the nation have been caused by hazardous materials escaping from surface impoundments. Almost one-third of the federal "Superfund" sites were a result of leaking surface impoundments. Ten of the 12 dump sites identified for maximum priority cleanup in California were contaminated by polluted impoundments.

Under present federal laws and regulations, hazardous waste impoundments constructed after January 26, 1983, must be double lined, have leak detection systems, and comply with standards regulating where these facilities may be located. However, the hundreds of ponds built before 1983 are exempt from preventive safety features. Instead, these ponds are only required to have "ground water monitoring wells—and "remedial" ones. The impoundment and three "downgradient."

Current law does not assure that hazardous wastes in surface impoundments will not contaminate underground water supplies.

Facilities built before January 26, 1983, are not required to have construction features that impede or prevent wastes from escaping, nor are they required to have leak detection systems. Regulation of these impoundments relies on monitoring procedures which require technologies that have not been fully developed and are difficult to implement. Further, these regulations have not been complied with nor enforced. Present federal and state regulations fail to prevent contaminants from entering ground water supplies because they rely on timely, effective corrective action which is extremely costly and generally ineffective.

Reliance on ground water monitoring to regulate facilities built before January 26, 1983, will neither preserve drinking water quality nor protect public health for the following reasons:

(1) Monitoring ground water is difficult, complex and does not often produce accurate, reliable results. To detect hazardous substances, monitoring must be: (a) located near the leak point; (b) constructed and drilled properly; (c) designed to detect the constituents placed in the pond; (d) placed properly to intercept the flow of hazardous contaminants in underground bodies and streams; and (e) operated pursuant to a reliable sampling plan.

(2) Monitoring is useful only to the extent that effective, timely corrective action can be taken on the basis of information derived from the monitoring. Corrective actions, such as removing contaminated soils or pumping out contaminated ground waters, are always expensive, but seldom effective, in preventing the spread of contamination.

Waiting until pollution occurs and then attempting to contain the contamination is extremely costly. The U.S. Office of Technology Assessment estimates that it costs 10 to 100 times more to clean up a contaminated site and compensate victims than to prevent pollution migration through adequate waste containment. A thousand pounds of waste generated today can mean one million to 10 million pounds of contaminated soil in three or four years and millions of gallons of contaminated water later.

SURFACE IMPOUNDMENTS

● Mr. RANDOLPH. Mr. President, I agree with the distinguished floor manager's description of our amendment establishing certain requirements for existing surface impoundments. I would like to ask for additional clarification of one point. As I understand one provision in the committee's amendment, a surface impoundment which does not qualify to continue to receive or store hazardous waste after 4 years after enactment may, however, receive nonhazardous waste after that date for storage or disposal is that correct?

● Mr. CHAFEE. Yes, the amendment provides for this.

● Mr. RANDOLPH. I thank the Senator. This is important to West Virginia, and I believe to other States. In my State there is at least one surface impoundment that receives waste for disposal which is primarily coal fines, the combustion of West Virginia coal, but also includes sludge from a city-owned sewage treatment plant, sludge from

New York City. This unregulated burning of hazardous waste exposes the surrounding population to potentially hazardous air pollutants.

Section 9 of this bill directs the EPA to develop and implement a regulatory program that establishes requirements, as may be necessary to protect human health and the environment, for the burning and blending of hazardous waste for energy recovery. Under the new provision, facilities that blend hazardous waste with fuel, or those persons who distribute or market fuel blended with hazardous waste must notify EPA of those activities within 1 year. Within 2 years, EPA must set standards governing hazardous-waste-derived fuel production, distribution, marketing, and burning.

I am pleased also to have cosponsored two floor amendments to this bill that I believe will help close existing loopholes in the RCRA law. These amendments were developed to address two problems identified by the Office of Technology Assessment (OTA) in an April 6, 1984, staff memorandum on ground water protection standards for hazardous waste land disposal facilities.

The first amendment requires the EPA to include financial responsibility assurances for corrective action in the performance standards that the Agency sets for the owners and operators of hazardous waste disposal facilities. Current EPA regulations require owners and operators to provide financial responsibility assurances for the costs of closure and post-closure maintenance of hazardous waste disposal facilities. However, financial responsibility assurances are not now required for corrective action that might have to be taken to clean up any contamination caused by such facilities. In instances where corrective action is necessary, cleanup costs could be substantial, especially if ground water has been contaminated. Some companies, faced with large corrective action costs, may choose, or be forced into, bankruptcy. In such cases, it is likely that cleanup would have to be accomplished using Superfund moneys. The financial responsibility amendment that I have cosponsored is designed to avoid this eventuality by making sure that those who own and operate disposal sites have adequate resources to clean up any contamination that might occur.

The second amendment provides the EPA with authority to issue an administrative order, or to commence a civil action in the U.S. district court to require corrective action at interim status hazardous waste treatment, storage, or disposal facilities where there is or has been a release of hazardous waste. The EPA currently has authority to require such corrective action at permitted hazardous waste treatment, storage, and disposal facilities. However, as of February 1984, only 115 facilities had full RCRA permits. The remaining facilities, close to 5,000, were operating under interim status. It will take an estimated 10 years to make permit determinations on the remaining interim status sites. The EPA estimates that between 50 percent and 80 percent of the interim status land disposal facilities are leaking and will require corrective action. Providing the EPA with the authority to use administrative orders to require corrective action at interim status facilities, is, therefore, most important. The Agency should have the same mechanism for protecting human health and the environment at interim status facilities as is now available for permitted facilities.

Mr. President, the provisions I have mentioned, along with others in the bill, provide for a strengthened hazardous waste management law. As such, I urge the adoption of S. 757.

Mr. SIMPSON. Mr. President, the consideration of the Resource Conservation and Recovery Act today marks the end of a long and laborious process that began several years ago in the Senate Environment and Public Works Committee. I am pleased the bill that is before us today is not perfection. It does not represent all of the answers to the hazardous waste problems that plague some areas of the country. The bill does represent a significant step forward in the regulation of hazardous waste disposal methods and waste handling. During the course of debate on RCRA the bill has grown in length and has in some places we have written regulations into law and I am concerned about that trend. However, the EPW committee has also made changes in the bill that will make it more practical in "the real world." We must do all that is possible to minimize hazardous waste generation and we must continue to carefully protect the public health and the environment—and that is the key to RCRA—the standard of protecting the public health and environment—we find that phrase through out the bill and that is then what this action is all about.

I must say I often tire of hearing the press and some public interest groups harangue about the lack of concern of the environment by Republicans. All types and forms of Republicans care about the environment and work diligently to protect it. New England Republicans have their point of view, southern Republicans have their idea of protecting the environment and western Republicans hold protection of the environment as a very high objective. We may not always agree how this protection is to be accomplished—but one thing is most certain—we are all sensitive to the needs of the public and the bountiful natural resources that all of us enjoy. So I find it pleasing that we are considering this bill today and I am confident that we can pass this bill and that with a bipartisan effort we can see the law enacted this year. And assuredly that can only be a positive development for the American people.

Senator CHAFEE and Senator STAFFORD have worked long, tough and hard on this legislation and have tried to work with all members of the Environment and Public Works Committee in order to formulate a bill that does protect the environment—but in a practical and reasonable manner. This bill has undergone considerable refinement during subcommittee and full committee meetings and even beyond that. We have continued to seek ways to make RCRA a more workable piece of legislation.

The RCRA bill has been improved in many areas. The small quantity generator provisions have been altered to take into account conditions that exist in many States—like my own—that are rural or semirural. We have allowed additional time for on-site storage of wastes for those who would experience hardships by complying with regulations that were meant for urban environments.

We have directed the EPA Administrator to initiate a small quantity generator study to determine just how wide ranging the small generator problem is in different parts of the country.

The RCRA bill contains comprehensive land disposal provisions that should revolutionize practices of disposing of hazardous wastes in land fills. We have provided for alternate land disposal technologies only where it can be demonstrated that such alternate technologies will be at least as effective as double liners and yet continue to protect human health and the environment. In addition, the bill would direct the Administrator of EPA to promulgate regulations concerning the disposal of dioxin containing wastes.

I feel the Environment and Public Works Committee has made other positive changes in this legislation. The committee altered the provision for the award of attorney's fees in order that only "prevailing or substantially prevailing" parties may collect fees. This is a commonsense change that should be made in every environmental statute.

The committee also worked out compromise language on the citizen suit provision. So—there are many areas in this bill that have been amended to reflect reason and logic—and that is so important for Congress to recognize how things work out there in the real world—down in the trenches where local public officials have to deal with hazardous waste on a daily basis. The same cannot be said for the House RCRA bill.

The important thing to consider is that any changes to the bill that would make it conform more to real on-the-ground conditions were made based upon the central theme and standard set forth in the bill—the singular standard of protecting human health and the environment. This standard has always been instilled in sight and mind and it provides the backbone of this bill. EPA and Congress cannot retain the public trust and confidence unless the public is adequately protected—and we have set out to make certain that protection is provided.

One last item I would wish to discuss involves a committee amendment that Senator CHAFEE and others worked with me to formulate. This amendment is designed to allow the EPA Administrator to treat high volume, low toxicity mining waste in a different manner than low volume, high toxicity industrial wastes. This amendment represents another successful attempt to bring good sense to this bill while continuing to afford full protection of the environment. I would thank Senators CHAFEE and RANDOLPH and other Senators that have worked so hard on this issue. It has been quite an interesting process for me to grind this bill out and I think we have all learned a great deal by having participated in it. All of us have tried to bring a thoughtful approach to this arena and overall objectiveness has been maintained. I do look forward to seeing this bill enacted and know that the able and personable Bill Ruckelshaus and his fine crew will set out on a new and comprehensive path that will prevent the occurrence of future Superfund sites. That old trite expression—"an ounce of prevention is worth a pound of cure" fits right here and as I assure you RCRA is much more than an ounce.

Mr. CHAFEE. Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER. The bill clerk will call the roll.

The bill clerk proceeded to call the roll.

Mr. CHAFEE. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. CHAFEE. Mr. President, I move third reading of S. 757 as amended.

The PRESIDING OFFICER. The bill is open to further amendment. If there be no further amendment to be proposed, the question is on the engrossment and the third reading of the bill.

The bill was ordered to be engrossed for a third reading and was read the third time.

Mr. CHAFEE. Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER [Mr. ABDNOR]. The clerk will call the roll.

The assistant legislative clerk proceeded to call the roll.

Mr. CHAFEE. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. CHAFEE. Mr. President, I ask unanimous consent that the Committee on Environment and Public Works be discharged from further consideration of H.R. 2867.

The PRESIDING OFFICER. Is there objection? Without objection it is so ordered.

Mr. CHAFEE. Mr. President, I ask unanimous consent that the Senate proceed to the immediate consideration of H.R. 2867.

The PRESIDING OFFICER. The clerk will report.

The assistant legislative clerk read as follows:

A bill (H.R. 2867) to amend the Solid Waste Disposal Act to authorize appropriations for the fiscal years 1984 through 1988, and for other purposes.

The PRESIDING OFFICER. Is there objection to the request of the Senator from Rhode Island?

There being no objection, the Senate proceeded to consider the bill.

Mr. CHAFEE. Mr. President, I move to strike all after the enacting clause and insert in lieu thereof the text of S. 757, as amended.

The PRESIDING OFFICER. Is there objection? Without objection, it is so ordered.

Mr. CHAFEE. Mr. President, I ask for third reading of the bill.

The PRESIDING OFFICER. The question is on the engrossment of the amendment and the third reading of the bill.

The amendment was ordered to be engrossed and the bill to be read a third time.

The bill was read the third time.

Mr. CHAFEE. Mr. President, I ask for the yeas and nays on final passage of H.R. 2867, as amended.

The PRESIDING OFFICER. Is there a sufficient second? There is a sufficient second.

The yeas and nays were ordered.

The PRESIDING OFFICER. The bill having been read the third time, the question is, Shall it pass? The yeas and nays have been ordered and the clerk will call the roll.

The assistant legislative clerk called the roll.

Mr. STEVENS. I announce that the Senator from Minnesota [Mr. BOSCHWITZ], the Senator from Florida [Mrs. HAWKINS], the Senator from Georgia [Mr. MATTINGLY], the Senator from South Carolina [Mr. THURMOND], the Senator from Texas [Mr. TOWER], and the Senator from Connecticut [Mr. WEICKER] are necessarily absent.

I further announce that, if present and voting, the Senator from Minnesota [Mr. BOSCHWITZ] and the Senator from South Carolina [Mr. THURMOND] would each vote "yea."

Mr. CRANSTON. I announce that the Senator from Colorado [Mr. HART] is necessarily absent.

The PRESIDING OFFICER. Are there any other Senators in the Chamber wishing to vote?

The result was announced—yeas 82, nays 0, as follows:

[Rollcall Vote No. 196 Leg.]

YEAS—82

Abdnor	Ford	Matsunaga
Andrews	Garn	Mitchell
Armstrong	Glenn	Moynihan
Baker	Goldwater	Murkowski
Bentsen	Gorton	Nickles
Biden	Grassley	Nunn
Bingaman	Hatch	Packwood
Boschwitz	Hatfield	Pell
Boren	Heflin	Percy
Bradley	Heinz	Pressler
Bumpers	Helms	Proxmire
Burdick	Hollings	Pryor
Byrd	Huddleston	Quayle
Chafee	Humphrey	Randolph
Chiles	Inouye	Riegle
Cochran	Jepsen	Roth
Cohen	Johnston	Rudman
Cranston	Kassebaum	Sarbanes
D'Amato	Kasten	Simpson
Danforth	Kennedy	Specter
DeConcini	Lautenberg	Stafford
Dixon	Leahy	Stennis
Dodd	Levin	Stevens
Dole	Long	Symms
Domenici	Lugar	Tsongas
Durenberger	Mathias	Trible
Eagleton	Matsunaga	Wallop
East	Mattingly	Warner
Exon	McClure	Wilson
Gam	Melcher	Zorinsky

NOT VOTING—7

Boschwitz	Hawkins	Weicker
Hart	Thurmond	
Hawkins	Tower	

So the bill (H.R. 2867), as amended, was passed, as follows:

Resolved, That the bill from the House of Representatives (H.R. 2867) entitled "An Act to amend the Solid Waste Disposal Act to authorize appropriations for the fiscal years 1984 through 1988, and for other purposes", do pass with the following amendments: Strike out all after the enacting clause and insert:

SHORT TITLE

SECTION 1. This Act may be cited as the "Solid Waste Disposal Act Amendments of 1984".

AUTHORIZATION

SEC. 2. Section 2007(a) of the Solid Waste Disposal Act is amended by striking "and" immediately following "1981," and by inserting immediately before the period at the end thereof ", $70,000,000 for the fiscal year ending September 30, 1985, and $80,000,000 per fiscal year for fiscal years ending September 30, 1986, September 30, 1987, September 30, 1988, and September 30, 1989".

SEC. 3. Section 3011(a) of the Solid Waste Disposal Act is amended by striking "and" immediately following "1981," and by inserting immediately following "1983" the following: ", $55,000,000 for the fiscal year 1985, and $60,000,000 per fiscal year for fiscal years 1986, 1987, 1988 and 1989".

SMALL QUANTITY GENERATOR REGULATION AND STUDY

SEC. 4. Section 3002 of the Solid Waste Disposal Act is amended by inserting "(a)