

SUBJECT: LIMITED CHANGE TO DOE M 435.1-1, *RADIOACTIVE WASTE MANAGEMENT MANUAL*

1. EXPLANATION OF CHANGES. This limited change incorporates the Department’s interpretation of the statutory definition of high-level radioactive waste (HLW), as part of DOE’s science-based approach to managing radioactive waste and identifying potential off-site disposal options for reprocessing waste that are fully protective of human health and the environment.
2. LOCATIONS OF CHANGES:

Page	Paragraph	Changed	To
1	2.	Added.	<u>CANCELS/SUPERSEDES.</u> DOE M 435.1-1 Change 2, <i>Radioactive Waste Management Manual</i> , dated 6-18-11. Cancellation of a directive does not, by itself, modify or otherwise affect any contractual or regulatory obligation to comply with the directive.
1-2	2.-7.	Renumbered.	3.-8.
1	5. Fourth Sentence	If compliance with this Order cannot be achieved within one year of its issuance, the Field Element Manager must request approval to extend the compliance date to no later than October 1, 2001, from the cognizant Program Secretarial Officer (PSO).	If compliance with this Order cannot be achieved within one year of its issuance, the Field Element Manager must request approval to extend the compliance date, from the cognizant Program Secretarial Officer (PSO).
i-ii	Table of Contents		Streamlined.
Ch. I I-1	1.B.	<u>Use of Guidance.</u> Additional information supporting the requirements in this Manual is contained in the Implementation Guide for use with DOE M 435.1-1, <i>Radioactive Waste Management Manual</i> . This Guide, DOE G 435.1-1, <i>Implementation Guide for DOE M 435.1-1</i> , shall be reviewed	Removed.

Page	Paragraph	Changed	To
		when implementing the requirements of this Manual. The Guide provides additional information and acceptable methods for meeting the requirements. Other methods may be used but must ensure an adequate level of safety commensurate with the hazards associated with the work and be consistent with the radioactive waste management basis.	
Ch. I I-1	1.C.-1.E.	Renumbered.	1.B.-1.D.
Ch. I I-5	2.D.	<u>Deputy Assistant Secretary for Waste Management.</u> The Deputy Assistant Secretary for Waste Management is responsible for:	<u>Associate Principal Deputy Assistant Secretary (APDAS) for Regulatory and Policy Affairs.</u> The APDAS is responsible for:
Ch. I I-5	2.E.	<u>Deputy Assistant Secretaries for Waste Management and Environmental Restoration.</u> The Deputy Assistant Secretary for Waste Management and the Deputy Assistant Secretary for Environmental Restoration are responsible for the following activities for facilities under their purview:	Removed.
Ch. I I-5 - I-6	2.E.(1)-2.E.(2)	Renumbered.	2.D.(3)-2.D.(4)
Ch. I I-5 - I-6	2.D.(3)	Disposal. Reviewing and approving, along with EH-1, transuranic waste disposal facility performance assessments and other disposal documents as required in waste specific chapters for which DOE is responsible for making compliance determinations. Reviewing and approving performance assessments and composite analyses, or appropriate CERCLA	Disposal. Reviewing and approving disposal facility performance assessments and other disposal documents as required in waste specific chapters for which DOE is responsible for making compliance determinations. Reviewing and approving performance assessments and composite analyses, or appropriate CERCLA documentation, for low-level

Page	Paragraph	Changed	To
		<p>documentation, for low-level waste disposal facilities, and issuing disposal authorization statements.</p> <p>(a) The Deputy Assistant Secretaries shall establish a review panel consisting of DOE personnel to review low-level waste disposal facility performance assessments and composite analyses, review appropriate CERCLA documentation, recommend low-level waste disposal facility compliance determinations to the Deputy Assistant Secretaries and develop disposal authorization statements.</p> <p>(b) The Deputy Assistant Secretaries shall issue disposal authorization statements containing conditions that low-level waste disposal facilities must meet in order to operate with an approved radioactive waste management basis.</p>	<p>waste disposal facilities, and issuing disposal authorization statements.</p> <p>(a) The APDAS for Regulatory and Policy Affairs shall support the Low-Level Waste Disposal Facility Federal Review Group, consisting of DOE personnel to review low-level waste disposal facility documents, such as, performance assessments, composite analyses, appropriate CERCLA documentation, low-level waste disposal facility compliance determinations and develop disposal authorization statements, etc.</p> <p>(b) The APDAS for Regulatory and Policy Affairs shall issue disposal authorization statements containing conditions that low-level waste disposal facilities must meet in order to operate with an approved radioactive waste management basis.</p>
Ch. I I-6	2.E.	Added.	<p><u>Deputy Assistant Secretary for Waste and Materials Management.</u></p> <p>(1) Application of HLW Interpretation. Approving recommendations of the responsible Field Element Manager, submitted pursuant to F.(21) of this Chapter, and identifying appropriate paths forward for the disposition of each waste stream determined not to be high-level radioactive waste.</p>

Page	Paragraph	Changed	To
Ch. I I-10	2.F.(21)	Added.	Application of High-Level Radioactive Waste Interpretation. Ensuring that applications of the high-level radioactive waste interpretation are made and documented in a manner that supports a determination that one of the two high-level radioactive waste interpretation criteria described in Chapter II of this Manual is met, and recommending the approval of such determinations to the Deputy Assistant Secretary for Waste and Materials Management.
Ch. II II-1	A.	<u>Definition of High-Level Waste.</u> High-level waste is the highly radioactive waste material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and other highly radioactive material that is determined, consistent with existing law, to require permanent isolation	<u>Definition of High-Level Waste.</u> High-level waste is the highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and other highly radioactive material that is determined, consistent with existing law, to require permanent isolation
Ch. II II-1	B.	<u>Waste Incidental to Reprocessing.</u> Waste resulting from reprocessing spent nuclear fuel that is determined to be incidental to reprocessing is not high-level waste, and shall be managed under DOE's regulatory authority in accordance with the requirements for transuranic waste or low-level waste, as appropriate. When determining whether spent nuclear fuel reprocessing plant wastes shall be managed as another waste type or as high-level waste, either the citation or evaluation process described below shall be used:	<u>Waste Incidental to Reprocessing.</u> Waste resulting from reprocessing spent nuclear fuel that is determined to be incidental to reprocessing is not high-level waste, and shall be managed under DOE's regulatory authority in accordance with the requirements for transuranic waste or low-level waste, as appropriate. When determining whether spent nuclear fuel reprocessing plant wastes are incidental to reprocessing, either the citation or evaluation

Page	Paragraph	Changed	To
			process described below shall be used:
Ch. II II-2	C.	Added.	<p>Application of the High-Level Radioactive Waste Interpretation.</p> <p>(1) Consistent with DOE’s interpretation of the statutory definition of high-level radioactive waste in the Atomic Energy Act of 1954, as amended, and the Nuclear Waste Policy Act of 1982, as amended, as explained in the Supplemental Notice Concerning U.S. Department of Energy Interpretation of High-Level Radioactive Waste (Supplemental Notice, 84 FR 26835; June 10, 2019), spent nuclear fuel reprocessing plant waste is not high-level radioactive waste if the waste:</p> <p>(a) does not exceed concentration limits for Class C low-level radioactive waste as set out in section 61.55 of title 10, Code of Federal Regulations, and meets the performance objectives of a disposal facility; or</p> <p>(b) does not require disposal in a deep geologic repository and meets the performance objectives of a disposal facility as demonstrated through a performance assessment conducted in accordance with applicable requirements.</p>

Page	Paragraph	Changed	To
			<p>(2) Proper record-keeping practices and quality assurance processes will be applied to ensure adequate supporting documentation for any determinations that either of the criteria in subsection (1) is met.</p> <p>(3) Waste meeting either criteria is not high-level radioactive waste, and may be classified and disposed in accordance with its radiological characteristics, regardless of origin or previous categorization. The waste shall be disposed of in an appropriate facility in accordance with its waste acceptance criteria, provided all applicable requirements of the disposal facility are met.</p> <p>(4) Consistent with the Supplemental Notice, the provisions of this paragraph are not applicable to reprocessing wastes from the West Valley Demonstration Project in New York governed by Public Law 96-368.</p>
Ch. II II-3 - II-13	C.-V.	Renumbered.	D.-W.
Ch. II II-3	F.	<p><u>Site-Wide Radioactive Waste Management Program.</u> In addition to the items in Chapter I of this Manual, documentation of the Site-Wide Radioactive Waste Management Program shall include a description of the High-Level Waste Engineering Management Program to support decision-making related to nuclear safety, including high-level waste</p>	<p><u>Site-Wide Radioactive Waste Management Program.</u> In addition to the items in Chapter I of this Manual, documentation of the Site-Wide Radioactive Waste Management Program shall include a description of the High-Level Waste Systems Engineering Management Program to support decision-making related to nuclear safety,</p>

Page	Paragraph	Changed	To
		requirements analysis, functional analysis and allocation, identification of alternatives, and alternative selection and system control.	including high-level waste requirements analysis, functional analysis and allocation, identification of alternatives, and alternative selection and system control.
Ch. II II-5	K.(1)(e)	Added.	Pretreatment, treatment, storage, packaging, and other operations for reprocessing waste determined or planned to be disposed of as non-high level waste shall be designed and implemented in a manner that will comply with the waste acceptance criteria of the appropriate disposal facility or with the DOE approved disposal authorization, as further specified in Chapters III or IV of this Manual.
Att. 2 Pg. 3	22.	<u>HIGH-LEVEL WASTE.</u> High-level waste is the highly radioactive waste material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and other highly radioactive material that is determined, consistent with existing law, to require permanent isolation. [Adapted from: <i>Nuclear Waste Policy Act of 1982</i> , as amended]	<u>HIGH-LEVEL WASTE.</u> High-level waste is the highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and other highly radioactive material that is determined, consistent with existing law, to require permanent isolation. [Adapted from: <i>Atomic Energy Act of 1954</i> , as amended, and the <i>Nuclear Waste Policy Act of 1982</i> , as amended]
Att. 2 Pg. 5	41.	Added.	<u>REPROCESSING.</u> Actions necessary to separate fissile elements (U-235, Pu-239, U-233, and Pu-241) and/or transuranium elements (e.g., Np, Pu, Am, Cm, Bk) from other materials (e.g., fission products, activated metals, cladding) contained in spent

Page	Paragraph	Changed	To
			<p>nuclear fuel for the purposes of recovering desired materials. Separation processes include aqueous separation processes, e.g., the Redox and the Purex processes, and nonaqueous processes, e.g., pyrometallurgical and pyrochemical processes. Wastes that are produced upstream of these separations processes, from processes such as chemical or mechanical decladding, cladding separations, conditioning, or accountability measuring, are not high-level waste. Such wastes are considered processing wastes and should be managed in accordance with the appropriate Chapters of DOE M 435.1- 1, as either transuranic, mixed low-level, or low-level waste. Likewise, wastes that are produced downstream of these separations processes, from such processes as decontamination, rinsing, washing, treating, vitrifying, or solidifying, are also not high-level waste and should be managed accordingly. Upstream and downstream wastes are not high-level waste because they do not result from reprocessing.</p>
Att. 2 Pg. 5 - Pg.	41.-57.	Renumbered.	42.-58.