

**ADMINISTRATIVE CHANGE TO
DOE O 458.1, RADIATION PROTECTION OF THE PUBLIC AND THE
ENVIRONMENT**

LOCATION OF CHANGES:

Page	Paragraph	Changed	To
1	3.a(2) First sentence	The Administrator of NNSA must assure that NNSA employees and contractors comply with their respective responsibilities under this Directive.	The Administrator of the National Nuclear Security Administration (NNSA) must assure that NNSA employees and contractors comply with their respective responsibilities under this Directive.
3	4.b(1)(b)	Comply with ALARA requirements in paragraph 4.d. of this Order.	Comply with As Low As Reasonably Achievable (ALARA) requirements in paragraph 4.d. of this Order.
7	4.e(6)	Dose evaluation models that are codified or approved for use by DOE must be used. Alternative dose evaluation models, including those used by other regulatory agencies, national organizations or international organizations, must be approved for use by the Chief Health, Safety and Security Officer, or by the DOE Field Element Manager with the concurrence of a Cognizant Secretarial Officer and the Chief Health, Safety and Security Officer, or for NNSA sites by the NNSA Field Element Manager with the concurrence of the NNSA Cognizant Secretarial Officer in consultation with the Chief Health, Safety and Security Officer.	Models for dose evaluation calculations must be appropriate for their purpose. Dose evaluation models that are codified or approved for use by regulators of DOE or by DOE must be used where applicable. Alternatives to such codified or approved dose evaluation models to be used for demonstrating compliance with this Order must be approved by the Field Element Manager and, as determined necessary by the Field Element Manager, in consultation with their Cognizant Secretarial Officer and the Office of Health, Safety and Security.
8	4.f(2)	20 pCi (0.7 Bq) m ⁻² sec ⁻¹	20 pCi (0.7 Bq)/m ² -sec
9	4.g(4)(b)	50 pCi (2 Bq) per gram above background of settleable solids for beta-emitting radionuclides.	50 pCi (2 Bq) per gram above background of settleable solids for beta-gamma-emitting radionuclides.
9	4.g(5)(a)	The annual average concentration of a given radionuclide is greater than the DOE-approved <i>Derived Concentration Technical Standard</i> , DOE-STD-1196-2011, (DCS) value	The annual average concentration of a given radionuclide is greater than the DOE-approved derived concentration standard (DCS) value for water contained in the <i>Derived</i>

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		for water, or for multiple radionuclides, the composite DCS must be the sum of the fractional DCS values derived from DOE-approved DCS values,	<i>Concentration Technical Standard</i> , DOE-STD-1196-2011, or for multiple radionuclides, the composite DCS must be the sum of the fractional DCS values derived from DOE-approved DCS values,
9	4.g(7)	contamination limits	contaminant levels
11	4.h(1)	Management, Storage and Disposal of Radioactive Waste.	Management, Storage and Disposal of Radioactive Waste at DOE Sites.
14	Footnote 2	DOE O 430.1B Chg 1	DOE O 430.1B Chg 2
14	Footnote 2	DOE O 580.1 Chg 1	DOE O 580.1A
16-17	4.k(6)(a) Second sentence	Authorized Limits may be applied to property for which process knowledge cannot establish the absence of residual radioactive material but in which no residual radioactive material can be detected.	Authorized Limits may be applied to property for which process knowledge cannot establish the absence of residual radioactive material and in which the presence of residual radioactive material cannot be determined.
17	4.k(6)(b) <u>2</u>	DOE O 414.1C, <i>Quality Assurance</i> , dated 6-17-05	DOE O 414.1D, <i>Quality Assurance</i> , dated 4-25-11
21	4.k(6)(f) <u>2a</u>	DOE O 252.1, <i>Technical Standards Program</i> , dated 11-19-99	DOE O 252.1A, <i>Technical Standards Program</i> , dated 2-23-11
24	4.k(9)(b)	(See DOE O 226.1A).	(See DOE O 226.1B).
28	4.l(4)	DOE O 243.1, <i>Records Management Program</i> , dated 2-3-06.	DOE O 243.1A, <i>Records Management Program</i> , dated 11-7-2011.
28	4.l(5)(a)	Reporting requirements for this Order are contained in DOE M 231.1-2, <i>Occurrence Reporting and Processing of Operations Information</i> , dated 8-19-03, and DOE M 231.1-1A Chg 2, <i>Environment, Safety and Health Reporting Manual</i> , dated 6-12-07.	Reporting requirements for this Order are contained in DOE O 232.2, <i>Occurrence Reporting and Processing of Operations Information</i> , dated 8-30-11, and DOE O 231.1B, <i>Environment, Safety and Health Reporting</i> , dated 6-27-11.
28	4.l(6) Second sentence	The SI units, and becquerel (Bq), gray (GY), and sievert (Sv) may be provided parenthetically for reference with scientific standards.	The SI units, becquerel (Bq), gray (Gy), and sievert (Sv) may be provided parenthetically for reference with scientific standards.
30	5.c(2)	(See DOE O 470.2B, <i>Independent Oversight and Performance Assurance Program</i> , dated 10-31-02.)	(See DOE O 227.1, <i>Independent Oversight Program</i> , dated 8-30-11).
31	5.c(6)	Approves, or provides concurrence in Field Element Managers' approval of alternative dose	Consults in Field Element Managers' approval of alternative dose evaluation models, or for

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		evaluation models, or for NNSA sites, provides consultation to the NNSA Cognizant Secretarial Officer.	NNSA sites, provides consultation to the NNSA Cognizant Secretarial Officer.
31-37	References a-vv	A number of reference citations have been deleted/replaced or revised, and new references have been added.	<p>Deleted or replaced references for the following directives: DOE P 141.2; DOE M 231.1-1A; DOE M 231.1-2; DOE M 411.1-1C; DOE P 441.1; DOE O 450.1A; DOE P 450.2A; DOE M 450.1; DOE P 450.7; DOE O 470.2B.</p> <p>Updated references/ numbering in the following directives to read: DOE O 226.1B; DOE P 226.1B; DOE O 243.1A; DOE O 252.1A; DOE O 413.3B; DOE O 414.1D; DOE O 430.1B, Chg 2; DOE P 450.4A.</p> <p>Added new references: DOE O 227.1; DOE O 231.1B; DOE O 232.2, and technical references.</p> <p>Reference citations have been updated and re-numbered from a-vv to a-ss.</p>
37	8. <u>CONTACT</u>	<u>CONTACT</u> . Questions concerning this Order should be referred to the Office of Nuclear Safety, Quality Assurance and Environment at (202) 586-7870.	<u>CONTACT</u> . Questions concerning this Order should be referred to the Office of Environmental Protection, Sustainability Support and Corporate Safety Analysis at (202) 586-7870.
Att. 1 2	2.b(1)(b)	Comply with ALARA requirements in paragraph 2.d. of the Specific Requirements in this CRD.	Comply with As Low As Reasonably Achievable (ALARA) requirements in paragraph 2.d. of the Specific Requirements in this CRD.
Att.1 5	2.e(6)	Dose evaluation models that are codified or approved for use by DOE must be used. Alternative dose evaluation models, including those used by other regulatory agencies, national organizations or international organizations must be	Models for dose evaluation calculations must be appropriate for their purpose. Dose evaluation models that are codified or approved for use by regulators of DOE or by DOE must be used where applicable. Alternatives to such

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		approved for use by the Chief Health, Safety and Security Officer, or by the DOE Field Element Manager with the concurrence of a Cognizant Secretarial Officer and the Chief Health, Safety and Security Officer, or for NNSA sites by the NNSA Field Element Manager with the concurrence of the NNSA Cognizant Secretarial Officer in consultation with the Chief Health, Safety and Security Officer.	codified or approved dose evaluation models to be used for demonstrating compliance must be approved by the Field Element Manager.
Att. 1 7	2.f(2)	20 pCi (0.7 Bq) m ⁻² sec ⁻¹	20 pCi (0.7 Bq)/m ² -sec
Att.1 8	2.g(4)(b)	50 pCi (2 Bq) per gram above background of settleable solids for beta-emitting radionuclides.	50 pCi (2 Bq) per gram above background of settleable solids for beta-gamma-emitting radionuclides.
Att. 1 8	2.g(5)(a)	The annual average concentration of a given radionuclide is greater than the DOE-approved <i>Derived Concentration Technical Standard</i> , DOE-STD-1196-2011, (DCS) value for water, or for multiple radionuclides, the composite DCS must be the sum of the fractional DCS values derived from DOE-approved DCS values;	The annual average concentration of a given radionuclide is greater than the DOE-approved derived concentration standard (DCS) value for water contained in the <i>Derived Concentration Technical Standard</i> , DOE-STD-1196-2011, or for multiple radionuclides, the composite DCS must be the sum of the fractional DCS values derived from DOE-approved DCS values;
Att. 1 8	2.g(7)	contamination limits	contaminant levels
Att. 1 10	2.h First sentence	The contractor must establish and implement procedures and practices to ensure that management, storage and disposal of radioactive waste and spent nuclear fuel address the following elements:	The contractor must establish and implement procedures and practices to ensure that management, storage and disposal of radioactive waste and spent nuclear fuel on DOE sites address the following elements:
Att. 1 13	Footnote 4	DOE O 430.1B Chg 1	DOE O 430.1B Chg 2
Att.1 13	Footnote 4	DOE O 580.1 Chg 1	DOE O 580.1A
Att. 1 15	2.k(6)(a) Second Sentence	Authorized Limits may be applied to property for which process knowledge cannot establish the absence of residual radioactive	Authorized Limits may be applied to property for which process knowledge cannot establish the absence of residual radioactive

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		material but in which no residual radioactive material can be detected.	material and in which the presence of residual radioactive material cannot be determined.
Att. 1 16	2.k(6)(b) <u>2</u>	DOE O 414.1C, <i>Quality Assurance</i> , dated 6-17-05.	DOE O 414.1D, <i>Quality Assurance</i> , dated 4-25-11.
Att. 1 23	2.l(4)	Records must be retained until final disposition is authorized by DOE in accordance with the CRD to DOE O 243.1, <i>Records Management Program</i> , dated 2-3-06.	Records must be retained until final disposition is authorized by DOE.
Att. 1 23	2.l(5)(a)	Reporting requirements are contained in the CRDs to DOE M 231.1-2, <i>Occurrence Reporting and Processing of Operations Information</i> , dated 8-19-03, and DOE M 231.1-1A Chg 2, <i>Environment, Safety and Health Reporting Manual</i> , dated 6-12-07.	Reporting requirements are contained in the CRDs to DOE O 232.2, <i>Occurrence Reporting and Processing of Operations Information</i> , dated 8-30-11, and DOE O 231.1B, <i>Environment, Safety and Health Reporting</i> , dated 6-27-11.
Att. 1 24	2.l.(6) Second sentence	The SI units, and becquerel (Bq), gray (GY), and sievert (Sv) may be provided parenthetically for reference with scientific standards.	The SI units, becquerel (Bq), gray (Gy), and sievert (Sv) may be provided parenthetically for reference with scientific standards.
Att. 2 1	Definitions	<u>Actual or Likely Use Scenarios</u> — The reasonably anticipated future uses of land or property considering the history of use and implementable use restrictions, designations or controls; affected populations, or ecosystems, natural resources, or historic or cultural significance. For real property considerations also include Federal and State use designations; local zoning and future land use plans; and proximity to residences, commercial, industrial or unique cultural or historic areas.	<u>Actual or Likely Use Scenarios</u> — The current uses and reasonably anticipated uses in the foreseeable future of real and personal property considering the history of use; use restrictions, designations or controls; affected populations, ecosystems, or natural resources; and the property's historic or cultural significance. For real property considerations also include Federal and State use designations; local zoning and future land use plans; and proximity to residences, commercial or industrial areas, or areas of cultural or historic significance.
Att. 2	Definitions	<u>Clearance of Property</u> — The	<u>Clearance of Property</u> — The

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2		removal of property that contains residual radioactive material from DOE radiological control under 10 CFR Part 835 and DOE O 458.1.	removal of property that contains or may contain residual radioactive material from DOE radiological control under 10 CFR Part 835 and DOE O 458.1.
Att. 2 2	Definitions	<u>Derived Concentration Technical Standard (DCS)</u> — A DOE Technical Standard that documents the derived concentration value for a radionuclide in water that would result in a dose of 100 mrem in a year to a gender- and age- weighted reference person using DOE approved dose conversion factors and assuming continuous exposure.	<u>Derived Concentration Standard (DCS)</u> — A derived concentration value for a radionuclide in water that would result in a dose of 100 mrem in a year to a gender- and age- weighted reference person using DOE approved dose coefficients and assuming continuous exposure.
Att. 2 4	Definitions	<u>Measurement Quality Objectives (MQO)</u>	<u>Measurement Quality Objectives</u>