

1 **DRAFT 2 11/02/15**

2 **DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT**

3 **Hazardous Materials and Waste Management Division**

4 **RADIATION CONTROL - GENERAL PROVISIONS**

5 **6 CCR 1007-1 Part 01**

6 *[Editor's Notes follow the text of the rules at the end of this CCR Document.]*

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8 **Adopted by the Board of Health on December 16, 2015.**

9 **PART 1: GENERAL PROVISIONS**

10 **1.1 Purpose and Scope.**

11 1.1.1 Authority.

12 1.1.1.1 Rules and regulations set forth herein are adopted pursuant to the provisions of sections
13 25-1-108, 25-1.5-101(1)(k), 25-1.5-101(1)(l), and 25-11-104, CRS.

14 1.1.2 Basis and Purpose.

15 1.1.2.1 A statement of basis and purpose accompanies this part and changes to this part. A copy
16 may be obtained from the Department.

17 1.1.3 Scope.

18 1.1.3.1 This part includes provisions generally applicable throughout all parts of these radiation
19 control regulations.

20 1.1.4 Applicability

21 1.1.4.1 Except as otherwise specifically provided herein, these regulations apply to all persons
22 who receive, possess, own, acquire, use, process, store, transfer, or dispose any source
23 of radiation.

24 1.1.4.2 Nothing in these regulations shall apply to any person to the extent such person is
25 subject to regulation not relinquished by the U.S. Nuclear Regulatory Commission.¹

26 ¹ Regulation by the State of source material, byproduct material, and special nuclear material in quantities not sufficient to form a
27 critical mass is subject to the provisions of the agreement between the State and the U.S. Nuclear Regulatory Commission and to
28 10 CFR Part 150 (January 1, 2010) of the Commission's regulations.

29 1.1.5 Published Material Incorporated By Reference.

30 1.1.5.1 Published material incorporated in Part 1 by reference is available in accord with Section
31 1.4.

32 **1.2 Definitions.**

33 1.2.1 Definitions of general applicability to the *Rules and Regulations Pertaining to Radiation Control*
34 promulgated by the Department pursuant to provisions of sections 25-1-108, 25-1.5-101(1)(k),
35 25-1.5-101(1)(l), and 25-11-104, CRS, are set forth in section 1.2.2 and shall be liberally
36 construed to protect the public health by controlling excess radiation.

Comment [JJ1]:
EDITORIAL NOTE 1: ALL COMMENTS (SUCH AS THIS ONE) SHOWN IN THE RIGHT SIDE MARGIN OF THIS DOCUMENT ARE FOR INFORMATION PURPOSES ONLY TO PROVIDE ADDITIONAL INFORMATION AND TO AID THE READER IN UNDERSTANDING THE PROPOSED AMENDMENT DURING THE DRAFT REVIEW PROCESS.

THESE COMMENTS ARE **NOT** PART OF THE RULE AND ALL COMMENTS WILL BE DELETED PRIOR TO FINAL SUBMISSION.

EDITORIAL NOTE 2:
IN ORDER TO MAINTAIN AGREEMENT STATE STATUS, COLORADO RULES ARE REQUIRED TO BE COMPATIBLE WITH FEDERAL U.S. NUCLEAR REGULATORY COMMISSION (NRC) REQUIREMENTS.

INFORMATION ON NRC COMPATIBILITY CATEGORIES MAY BE FOUND AT:
<http://nrc-stp.ornl.gov/procedures/sa200.pdf>

REQUIRED CHANGES TO THE FEDERAL RULES OF NRC ARE CONVEYED TO AGREEMENT STATES THROUGH THE NRC REGULATORY ACTION TRACKING SYSTEM (RATS). UPDATES AND CHANGES TO FEDERAL RULE ARE ISSUED PERIODICALLY AND INFORMATION CAN BE FOUND AT:
http://nrc-stp.ornl.gov/rss_regamendments.html

EDITORIAL NOTE 3: PER BOARD REQUEST, ITEMS HIGHLIGHTED IN YELLOW INDICATE CHANGES WHICH HAVE BEEN MADE SINCE THE REQUEST FOR RULEMAKING IN OCTOBER 2015.

Comment [JJ2]: This reflects the anticipated date of approval by the Colorado Board of Health. The effective date is typically within 60 days following this date.

37 1.2.2 As used in these regulations, each term below has the definition set forth. A cross-reference is
38 provided for each common abbreviation. Any additional definition used only in a single part of
39 these regulations is found in that part.

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41 [* * * = Indicates omission of unaffected rule sections or definitions.

42 **Note – some unchanged definitions are retained in the draft for ease of review of the draft**
43 **or for cross-reference.]**

44

45 * * *

46 **“Byproduct material” means:**

47 (1) Any radioactive material, except special nuclear material, yielded in or made
48 radioactive by exposure to the radiation incident to the process of producing or
49 **utilizing-using** special nuclear material;

50 (2) The tailings or wastes produced by the extraction or concentration of uranium or
51 thorium from ore processed primarily for its source material content, including
52 discrete surface wastes resulting from uranium or thorium solution extraction
53 processes (underground ore bodies depleted by these solution extraction
54 operations do not constitute “byproduct material” within this definition);

55 (3) **(a) Any discrete source of radium-226 material that is** produced, extracted, or
56 converted after extraction, **before, on, or after August 8, 2005,** for use for a
57 commercial, medical, or research activity; **or, that:**

58 **(ab) Any material that: is a discrete source of radium-226; or**

59 **(bi) Has been made radioactive by use of a particle accelerator; or and**

60 **(ii) Is produced, extracted, or converted after extraction, before, on,**
61 **or after August 8, 2005, for use for a commercial, medical, or**
62 **research activity; and**

63 (4) Any discrete source of naturally occurring radioactive material, other than source
64 material, that:

65 ~~(a) Is extracted, or converted after extraction, for use for a commercial,~~
66 ~~medical, or research activity; and~~

67 **(ba) The NRC, in consultation with the administrator of the**
68 **Environmental Protection Agency, the Secretary of Energy, the**
69 **Secretary of Homeland Security, and the head of any other**
70 **appropriate federal agency, determines would** ~~is determined by NRC~~
71 ~~to pose a threat to the public health and safety or the common defense~~
72 ~~and security~~ **similar to the threat posed by a discrete source of radium-**
73 **226 to the public health and safety; and**

74 **(b) Before, on, or after August 8, 2005, is extracted, or converted after**
75 **extraction, for use for a commercial, medical, or research activity;**

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77 **“Carrier” means a person engaged in the transportation of passengers or property by land**
78 **or water as a common, contract, or private carrier, or by civil aircraft.**

Comment [JJ3]: The definition for “Byproduct material” is updated for consistency with the 2015 Radiation Control Act (RCA) changes (via HB 15-1145). The RCA change is consistent with the same definitions in 10 CFR Part 20, 30, and Part 40.

SSRCR Part A has not been updated to reflect this definition found in current federal rule.

House Bill 15-1145
NRC Compatibility = H&S

Comment [JJ4]: This definition is added consistent with the new (2013) federal rule 10 CFR Part 37 (pertaining to security of high risk materials). The definition here is equivalent to that currently found in Part 17, and Part 22**.

The definition is used in Parts 4, 17, and 22**. Future amendments to Part 17 and 22 will allow removal of the same definition from those parts.

SSRCR Part A has not been updated to reflect this definition found in current federal rule (but is consistent with SSRCR Part T.)

(**Colorado Part 22 has an effective date of July 14, 2015)
Compatibility = [B] [10 CFR 37.5]
NRC RATS 2013-1

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~~"Classified material" means radioactive materials that are one or more of the following types:~~

- ~~(1) "Type 2 byproduct material" as byproduct material is defined in 42 U.S.C. sec. 2014 (e) (2);~~
- ~~(2) Naturally occurring (NORM) or technologically enhanced naturally occurring radioactive material (TENORM);~~
- ~~(3) Non-11 e (2) material; or~~
- ~~(4) Ore.~~

"Collective dose" means the sum of the individual doses received in a given period of time by a specified population from exposure to a specified source of radiation.

~~"Commencement of construction" means taking any action defined as "construction" or any other activity at the site of a facility subject to the regulations that has a reasonable nexus to radiologic health and safety. any clearing of land, excavation or other substantial action related to a proposed activity that might adversely affect the natural environment of a site; this term does not include changes desirable for the temporary use of the land for public recreational uses, limited borings to determine site characteristics as necessary for environmental assessment or other pre-construction monitoring to establish background information related to the suitability of a site, or to the protection of environmental values.~~

* * *

"Construction" means the installation of wells associated with radiological operations (e.g., production, injection, or monitoring well networks associated with in-situ recovery or other facilities), the installation of foundations, or in-place assembly, erection, fabrication, or testing for any structure, system, or component of a facility or activity subject to the regulations in Parts 3, 18, and 19 that are related to radiological safety or security. The term "construction" does not include:

- (1) Changes for temporary use of the land for public recreational purposes;**
- (2) Site exploration, including necessary borings to determine foundation conditions or other preconstruction monitoring to establish background information related to the suitability of the site, the environmental impacts of construction or operation, or the protection of environmental values;**
- (3) Preparation of the site for construction of the facility, including clearing of the site, grading, installation of drainage, erosion and other environmental mitigation measures, and construction of temporary roads and borrow areas;**
- (4) Erection of fences and other access control measures that are not related to the safe use of, or security of, radiological materials subject to Parts 3, 18, and 19;**
- (5) Excavation;**
- (6) Erection of support buildings (e.g., construction equipment storage sheds, warehouse and shop facilities, utilities, concrete mixing plants, docking and unloading facilities, and office buildings) for use in connection with the construction of the facility;**

Comment [JJ5]: Consistent with the 2015 changes to the Colorado Radiation Control Act, the term "Classified material" is deleted.

House Bill 15-1145
Aslo Ref: NRC Ltr 10/24/11
<http://nrc-stp.ornl.gov/special/regs/coregs111024.pdf>

Comment [JJ6]: This definition is updated consistent with a change to federal rule which occurred in 2011. This definition is modified for compatibility with equivalent definitions found in 10 CFR Parts 30.4, 36.2, 40.4, 70.4 and 150.31(b)(3)(iv)(A). (Certain language removed from the current definition is contained within the definition of "construction".)

This definition – used in conjunction with the definition "construction" – clarifies what is and is not considered to be part of the construction process for a facility. The definition applies to those types of sites which typically involve significant amounts of "physical" property and are often built from vacant land.

SSRCR Part A has not been updated to reflect this definition found in current federal rule.

Compatibility = C [40.4; 150.31]; and = D [30.4; 36.2; 70.4]
NRC RATS 2011-2

Comment [JJ7]:
Consistent with a federal rule change in 2011, this definition is added and is necessary for compatibility with equivalent definitions found in 10 CFR Parts 30.4, 36.2, 40.4, 70.4, and 150.31(b)(3)(iv)(B).

This definition clarifies what is and is not considered construction, for those types of sites which typically involve significant amounts "physical" property and are often built from vacant land. The definition is most often used in conjunction with the definition "commencement of construction".

SSRCR Part A has not been updated to reflect this definition found in current federal rule.

Compatibility = C [40.4; 150.31]; and = D [30.4, 36.2, 70.4]
NRC RATS 2011-2

- 122 (7) Building of service facilities (e.g., paved roads, parking lots, railroad spurs,
- 123 exterior utility and lighting systems, sanitary sewerage treatment facilities, and
- 124 transmission lines);
- 125
- 126 (8) Procurement or fabrication of components or portions of the proposed facility
- 127 occurring at other than the final, in-place location at the facility; or
- 128
- 129 (9) Taking any other action that has no reasonable nexus to radiological health and
- 130 safety.

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131 "NARM". See "naturally occurring or accelerator-produced radioactive material" (NARM).

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132 "Natural radioactivity" means radioactivity of naturally occurring nuclides.

133 "Natural thorium" means thorium with the naturally occurring distribution of thorium isotopes

134 (essentially 100 weight percent thorium-232).

135 "Natural uranium" means uranium containing the naturally occurring distribution of the uranium

136 isotopes 234, 235 and 238 (approximately 0.711 weight percent uranium-235 and the remainder

137 by weight essentially uranium 238) that is neither enriched nor depleted in the isotope uranium

138 235.

139 "Naturally occurring or accelerator produced radioactive material"(NARM) means any radioactive

140 material that is not source or special nuclear material or byproduct material types (1) or (2).

141 "~~Naturally occurring radioactive material~~" (NORM) means any **nuclide that is radioactive in its**

142 **natural physical state and is not manufactured. "Naturally occurring radioactive material"**

143 **does not include source material, special nuclear material, ~~that is not~~ byproduct material,**

144 **source, or special nuclear material, produced in an accelerator,** or by-products of fossil-fuel

145 combustion, including bottom ash, fly ash, and flue-gas emission by-products.

Comment [JJ8]: Consistent with the 2015 changes to the Colorado Radiation Control Act, the definition "Naturally Occurring Radioactive Material (NORM)" is modified.

Definition is specific to Colorado statute.

House Bill 15-1145

* * *

146 "~~Non-11 e (2) material~~" means ~~byproduct material that is not type 2 byproduct material or ore.~~

147 "~~Non-11 e (2) byproduct material~~" does not include ~~depleted or enriched uranium as defined by~~

148 ~~Colorado or federal statute or rule.~~

Comment [JJ9]: Consistent with the elimination of this definition from the 2015 amendment to the Colorado Radiation Control Act, the definition "Non-11 e (2) material" is deleted.

House Bill 15-1145

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149 "NORM". See "naturally occurring radioactive material" (NORM).

* * *

150 "Ore" means naturally occurring uranium-bearing, thorium-bearing, or radium-bearing material in

151 its natural form, to be processed for its uranium or thorium content, prior to chemical processing

152 including but not limited to roasting, beneficiating, or refining, and specifically includes material

153 that has been physically processed, such as by crushing, grinding, screening, or sorting.

* * *

154 "Regulations of the DOT" means the regulations in 49 CFR Parts 100-189 and Parts 390-397

155 (October 1, ~~2009~~**2014**).

163 Regulations of the NRC” means the regulations in 10 CFR Parts 1-50 and Parts 51-199 (January
164 1, ~~2010~~2015).

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166 “Residual radioactivity” means radioactivity in structures, materiel, soils, groundwater, and other
167 media at a site resulting from activities under the licensee’s control.

168 (1) This includes radioactivity from all licensed and unlicensed sources used by the
169 licensee, but excludes background radiation.

170 (2) It also includes radioactive materials remaining at the site as a result of routine or
171 accidental releases of radioactive material at the site and previous burials at the
172 site, even if those burials were made in accordance with the provisions of Part 4.

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175 “Source material” means uranium or thorium, or any combination of uranium or thorium
176 in any physical or chemical form, including ores that contains, by weight, one-twentieth of 1
177 percent (0.05 percent) or more, of uranium, thorium or any combination thereof. Source material
178 does not include special nuclear material.

Comment [JJ10]: Consistent with the 2015 changes to the Colorado Radiation Control Act, the definition of “Source material” is modified.

The meaning of this definition is the same as that found in SSRCR Part A.

House Bill 15-1145

179 “Source material milling” means any activity that results in the production of radioactive material
180 that meets byproduct material definition (2).

181 * * *

182 “Technologically enhanced naturally occurring radioactive material” (TENORM) means naturally
183 occurring radioactive material whose radionuclide concentrations are increased by or as a result
184 of past or present human practices. “TENORM” does not include:

- 185 (1) Background radiation or the natural radioactivity of rocks or soils;
- 186 (2) “Byproduct material” or “source material”, as defined by Colorado statute or rule;
187 or
- 188 (3) Enriched or depleted uranium as defined by Colorado or federal statute or rule.

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191 “Unrefined and unprocessed ore” means ore in its natural form prior to any processing, such as
192 grinding, roasting, or beneficiating, or refining. **Processing does not include sieving or**
193 **encapsulation of ore or preparation of samples for laboratory analysis.**

Comment [JJ11]:
Consistent with the amendments to 10 CFR 40.4 (2013), the definition for “Unrefined and unprocessed ore” is modified.

SSRCR Part A has not been updated to reflect this definition found in current federal rule.

NRC Compatibility = B
NRC RATS = 2013-2

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197 **COMMUNICATIONS AND REFERENCED MATERIALS**

198 **1.3 Communications.**

199 1.3.1 All communications and reports concerning parts of these regulations, and applications filed
200 thereunder, should be addressed to the Department.

201 **1.4 Referenced Materials.**

202 1.4.1 Parts of these regulations incorporate by reference (as identified within a particular section)
203 materials originally published elsewhere. These regulations do not include amendments to or
204 editions of incorporated materials published later than the effective date of the particular section.

205 1.4.2 Materials incorporated by reference will be available to the public for inspection during regular
206 business hours or for copying at reasonable charge at the offices of the Hazardous Materials and
207 Waste Management Division, Colorado Department of Public Health and Environment, 4300
208 Cherry Creek Drive South, Denver, CO 80246-1530.

209 1.4.3 The addresses of the Federal Agencies and Organizations originally issuing the referenced
210 materials are available on the Division website at <http://www.cdphe.state.co.us/hm/index.htm>.

211 1.4.4 In accordance with Section 24-4-103(12.5)(c)(ii)(C), CRS, copies of any material that has been
212 incorporated by reference have been provided to the State Publications Depository Library and
213 Distribution Center and are available for interlibrary loan. The incorporated materials may be
214 examined at any state publications depository library.

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218 **EDITOR'S NOTES**

219 6 CCR 1007-1 has been divided into separate parts for ease of use. Versions prior to 04/01/2007 are
220 located in the first section, 6 CCR 1007-1. Prior versions can be accessed from the All Versions list on the
221 rule's current version page. To view versions effective on or after 04/01/2007, select the desired part of
222 the rule, for example 6 CCR 1007-1 Part 01 or 6 CCR 1007-1 Part 10.

223 **History**

224 Part 01 entire rule eff. 08/30/2007.

225 Part 01 entire rule eff. 07/01/2010.

226 Part 01, Rules 1.1.4, 1.2 eff. 07/30/2010.

227 Part 01, Rules 1.2, 1.4.2, 1.4.3 eff. 04/30/2011.

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