



State of Utah

GARY R. HERBERT  
Governor

SPENCER J. COX  
Lieutenant Governor

Department of  
Environmental Quality

Alan Matheson  
Executive Director

DIVISION OF WASTE MANAGEMENT  
AND RADIATION CONTROL  
Scott T. Anderson  
Director

A regular meeting of the Waste Management and Radiation Control Board has been scheduled for October 12, 2017 at 1:30 p.m. at the Utah Department of Environmental Quality, Multi-Agency State Office Building, located at 195 North 1950 West (Conf. Room #1015), SLC.  
(One or more Board member may participate telephonically.)

AGENDA

- I. Call to Order.
  - II. **Approval of the Meeting Minutes for the August 10, 2017 Board meeting (Board Action Item)..... Tab 1**
  - III. **Underground Storage Tanks Update..... Tab 2**
  - IV. Administrative Rules ..... Tab 3
- Radiation Control Rules:
- A. **Final adoption of rule changes to amend the appropriate sections of R313-12, General Provisions, R313-19, Requirements of General Applicability to Licensing of Radioactive Material, R313-21, General Licenses, and R313-22, Specific Licenses, by incorporating the federal regulatory changes promulgated by the Nuclear Regulatory Commission (NRC) in the Federal Register on May 29, 2013 (78 FR 32310) and updating selected rule citations and references (Board Action Item).**
  - B. **Approval to proceed with formal rulemaking and public comment by filing with the Office of Administrative Rules and publishing in the Utah State Bulletin proposed changes to R313-25 that incorporate rule changes required by §19-3-104, as amended by S.B. 173 (2015 Gen. Session) and S.B. 79 (2017 Gen. Session), regarding (i) financial assurance for the closure and post closure care of a low-level radioactive waste disposal facility; and (ii) modifications to facility definitions (Board Action Item).**
- V. Hazardous Waste Section ..... Tab 4
    - A. **Clean Harbors Grassy Mountain, LLC request for a site-specific treatment variance to stabilize a High Mercury-Inorganic Subcategory waste stream (Board Action Item).**

(Over)

VI. Low Level Radioactive Waste Section ..... Tab 5

- A. EnergySolutions, LLC request for a site-specific treatment variance from the Hazardous Waste Management Rules. EnergySolutions seeks authorization to treat by stabilization, waste containing High-Subcategory Mercury **(Information Item Only)**.
- B. EnergySolutions, LLC request for a site-specific treatment variance from the Hazardous Waste Management Rules. EnergySolutions seeks authorization to receive Cemented Uranium Extraction Process Residues for disposal **(Information Item Only)**.
- C. EnergySolutions, LLC request for a site-specific treatment variance from the Hazardous Waste Management Rules. EnergySolutions seeks authorization to dispose of waste containing hazardous constituents and PCBs as Underlying Hazardous Constituents **(Information Item Only)**.

VII. Other Business ..... Tab 6

- A. Presentation on Low Level Radioactive Waste Management Rules – EnergySolutions **(Information Item Only)**.
- B. Misc. Information Items.
- C. Scheduling of next Board meeting.

VIII. Adjourn.

In compliance with the Americans with Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Larene Wyss, Office of Human Resources at (801) 536-4281, TDD (801) 536-4284 or by email at [lwyss@utah.gov](mailto:lwyss@utah.gov)

Waste Management and Radiation Control Board Meeting  
Utah State Library (Blind Center Building)  
250 North 1950 West, Salt Lake City, Utah  
Conference Rooms 218 and 219  
August 10, 2017  
1:30 p.m.

**Board Members Present:** Brett Mickelson (Chair), Dennis Riding (Vice-Chair), Richard Codell, Danielle Endres, Jeremy Hawk, Alan Matheson, Shawn Milne, Nathan Rich, Vern Rogers (Telephonic Participation), Shane Whitney

**Board Members Absent:** Mark Franc and Steve McIff

**Staff Members Present:** Scott Anderson, Therron Blatter, Scott Baird, Thomas Ball, Carlee Christoffersen, Ed Costomiris, Phil Goble, Arlene Lovato, Rusty Lundberg, Deborah Ng, Rick Page, Bret Randall, Jerry Rogers, Elisa Smith, Don Verbica, Otis Willoughby

**Others Present:** Jessica Kahler, Linda Ebert, Joe Ozimek, Donna Sacket

**I. Call to Order.**

Brett Mickelson (Chair) welcomed all in attendance and called the meeting to order at 1:30 p.m. Mark Franc and Steve McIff were excused from the meeting.

**II. Approval of the Meeting Minutes for the July 13, 2017 Board Meeting.**

It was moved by Richard Codell and seconded by Shane Whitney and UNANIMOUSLY CARRIED to approve the July 13, 2017 Board Meeting minutes.

**III. Underground Storage Tanks Update.**

Therron Blatter, Underground Storage Tank Branch Manager of the Division of Environmental Response and Remediation, informed the Board that the cash balance of the Petroleum Storage Tank (PST) Trust Fund at the end of June 2017 was \$16,235,084.00. The preliminary estimate for the cash balance of the PST Trust Fund for the end of July 2017 is \$16,444,405.00. The PST Trust Fund is managed on a cash balance basis to ensure sufficient coverage for known claims that have been reported. The balance of the PST Trust Fund is watched closely to ensure sufficient coverage for covered releases.

Mr. Blatter informed the Board that the DERR has submitted data for the annual PST Trust Fund actuarial report. A final report should be received in October 2017. The report will be valuable this year as the PST program is up for reauthorization with the Utah Legislature. There were no questions or comments on the PST Trust Fund balance or actuarial report.

**IV. Administrative Rules.**

A. Final adoption of rule changes to incorporate EPA's hazardous waste generator improvement rule (promulgated on 11/28/2016, 81 FR 85732) into R315-15, R315-260, R315-261, R315-262, R315-263, R315-264, R315-265, R315-266, R315-268, R315-270, R315-273, R315-301, R315-304-3, and R315-305-3 and other miscellaneous rule changes as published in the June 1, 2017 issue (Vol. 2017, No. 11) of the Utah State Bulletin (**Board Action Item**).

Rusty Lundberg, Deputy Director, Division of Waste Management and Radiation Control and Deborah Ng, Hazardous Waste Section Manager, reviewed the request for final adoption of changes to the state hazardous,

solid waste and used oil rules as listed below, to incorporate EPA’s hazardous waste generator improvements rule, as promulgated in the Federal Register on November 28, 2016 (81 FR 85732) and to make selected corrections and clarifications.

On November 28, 2016, the U.S. Environmental Protection Agency published in the Federal Register a final rule that makes significant changes to the hazardous waste generator regulations. Ms. Ng stated there were approximately 60 changes that were made to the rule. This final rule is known as the “Hazardous Waste Generator Improvements Rule.”

In order to maintain regulatory equivalency, Utah is required to incorporate this federal rule into the corresponding state solid waste, hazardous waste and used oil rules. Consequently, proposed changes to the following rules are necessary: R315-15, R315-260, R315-261, R315-262, R315-263, R315-264, R315-265, R315-266, R315-268, R315-270, R315-273, R315-301, R315-304, and R315-305.

Also included in this rulemaking is a proposed change in the used oil rules (R315-15) that will allow transit systems (e.g., UTA) to transport their own used oil, under a permit-by-rule status, to a permitted used oil recycler. This rule change will result in saving the cost of outsourcing the transportation of used oil by a permitted transporter in an equally protective and safe manner.

The rule changes and associated rule analysis information were published in the June 1, 2017 issue of the Utah State Bulletin (Vol. 2017, No. 11). A public comment period began on June 1, 2017 and concluded on July 3, 2017. No comments were received.

The Director recommends the Board approve final adoption of the rule changes to incorporate the federal regulations promulgated by EPA on November 28, 2016 (81 FR 85732) and make other selected corrections and clarifications to the rules stated above as published in the June 1, 2017 issue of the Utah State Bulletin and set and effective date of August 31, 2017.

Dennis Riding questioned if the waste oil haulers who are currently conducting this work have expressed their concerns about UTA conducting their own hauling. Ms. Ng stated they have not been contacted and they have not provided any comments. Ms. Ng clarified that the oil will be taken back to the facility to heat the facility, etc. This provision allows them to transport/haul to various locations only within their compound. If transportation is conducted on a public road, UTA would be required to be a permitted used oil transporter.

**It was moved by Shawn Milne and seconded by Jeremy Hawk and UNANIMOUSLY CARRIED to approve for final adoption of rule changes to incorporate EPA’s hazardous waste generator improvement rule into R315-15, R315-260, R315-261, R315-262, R315-263, R315-264, R315-265, R315-266, R315-268, R315-270, R315-273, R315-301, R315-304-3, and R315-305-3 and other miscellaneous rule changes as published in the June 1, 2017 issue of the Utah State Bulletin, with an effective date of August 31, 2017.**

**V. Clean Harbors Grassy Mountain, LLC request for a site-specific treatment variance to stabilize a High Mercury-Inorganic Subcategory waste stream (Information Item Only).**

Ed Costomiris, Environmental Scientist, provided a power point presentation as background for this request. A copy of the presentation is provided in the meeting minutes.

Clean Harbors Grassy Mountain, LLC has requested a site-specific treatment variance from the Utah Hazardous Waste Management Rules. The Grassy Mountain Facility seeks authorization to stabilize a High Mercury – Subcategory Inorganic waste stream that has the characteristic waste code D009. The Grassy Mountain Facility accepts a number of different types of waste streams including non-hazardous, hazardous (RCRA), PCB (TSCA), and mixtures of RCRA and TSCA waste. This treated waste will be disposed in a hazardous waste cell at the facility.

The Grassy Mountain Facility proposes to stabilize and dispose of a mercury waste stream that is generated at the Clean Harbors Aragonite Facility and carries the waste code for High Mercury-Inorganic Subcategory. The waste stream, profile number AGGM912669HHGB, is generated from the air pollution control system at the Aragonite Facility.

The technology-based treatment code for this material is RMERC (roasting/retorting followed by recovery). The RMERC process generates a secondary waste stream. Secondary waste streams, when greater than, or equal to, 260 mg/kg total mercury, are required to be further stabilized to a level of 0.20 mg/l using the toxicity characteristic leaching procedure (TCLP). Secondary waste streams, when less than 260 mg/kg total mercury, are required to be treated to 0.025 mg/l TCLP. The Grassy Mountain Facility proposes to treat all of the waste, regardless of the initial concentration of mercury, to the more restrictive standard of 0.025 mg/L, based on the TCLP.

The Grassy Mountain Facility is proposing to treat the waste directly with a stabilization method rather than going through the initial retorting or roasting of the waste. The hardship for Clean Harbors is that there currently is no alternative for the company to dispose of this waste. Facilities that can retort the waste stream are not permitted to treat waste that has waste codes not associated with mercury and this particular waste stream has numerous codes in addition to the code for mercury.

The Grassy Mountain Facility has conducted a treatability study on the waste stream. The treatment formula developed for this waste stream resulted in mercury concentrations below the requested concentration of 0.025 mg/L TCLP. In addition, LDR compliance will be met with all other waste codes associated with the waste prior to disposal.

The Board has approved identical site-specific treatment variances in March 2009, November 2010, June 2013 and November 2015.

A notice for public comment was published in the July 27, 2017 issues of the Salt Lake Tribune, the Deseret News and the Tooele Transcript Bulletin. The comment period began on July 27, 2017 and will conclude on August 28, 2017. This matter will be an action item during the next Board meeting.

Ed Costomiris stated the volume to be treated includes 12 roll-off boxes, (each a capacity of 20 cubic yards). The generator of the waste stream is the Clean Harbors Aragonite Facility. This waste is residue from the air pollution control system (spray dryer residue). Mr. Costomiris also provided clarification regarding the stabilization recipe.

## **VI. Hazardous Waste Generation and Management Summary Report for 2015**

Carlee Christoffersen, Environmental Program Coordinator, provided a power point presentation on the 2015 Hazardous Waste Generation and Management Report. A copy of the presentation is provided in the meeting minutes.

The presentation included Report Data; Who Must Report; Generators; Generation; Management; Imports and Exports; Data Uses; and Future Planning.

## **VII. Other Business.**

### **A. Misc. Information Items – None to report.**

Richard Codell requested information regarding the article in the Salt Lake Tribune pertaining to Stone Castle Recycling and the burying of waste. Scott Anderson provided some background information regarding the various Stone Castle facilities and the on-going cleanup efforts.

Ed Costomiris further clarified that Stone Castle shipped contaminated waste to Clean Harbors, Grassy Mountain facility. Only one pile of waste was buried. The waste has been retrieved, stabilized, treated and properly disposed of. The Board will be not be involved in handling this matter.

**B. Scheduling of next Board meeting.**

The September Board meeting was cancelled. The next Board meeting is scheduled for October 12, 2017 at 1:30 p.m. at the Utah Department of Environmental Quality, 195 North 1950 West, Salt Lake City.

**VIII. Adjourn.**

The meeting adjourned at 2:01 p.m.

**UST STATISTICAL SUMMARY**  
**September 1, 2016 -- August 31, 2017**

<b>PROGRAM</b>													
	<b>September</b>	<b>October</b>	<b>November</b>	<b>December</b>	<b>January</b>	<b>February</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>August</b>	<b>(+/-) OR Total</b>
<b>Regulated Tanks</b>	4,052	4,065	4,062	4,062	4,063	4,060	4,060	4,058	4,043	4,046	4,054	4,059	<b>(8)</b>
<b>Tanks with Certificate of Compliance</b>	3,919	3,936	3,934	3,959	3,968	3,971	3,974	3,982	3,972	3,965	3,964	3,959	<b>1</b>
<b>Tanks without COC</b>	133	129	128	103	95	89	86	76	71	81	90	100	<b>(9)</b>
<b>Cumulative Facilities with Registered A Operators</b>	1,315	1,316	1,315	1,316	1,318	1,315	1,316	1,313	1,307	1,307	1,305	1,301	<b>96.96%</b>
<b>Cumulative Facilities with Registered B Operators</b>	1,316	1,318	1,317	1,318	1,319	1,317	1,319	1,317	1,311	1,310	1,308	1,316	<b>97.18%</b>
<b>New LUST Sites</b>	7	3	8	7	6	8	8	8	7	11	7	7	<b>87</b>
<b>Closed LUST Sites</b>	11	8	13	12	4	5	13	3	5	13	8	10	<b>105</b>
<b>Cumulative Closed LUST Sites</b>	4942	4953	4961	4976	4978	4983	4992	4996	5004	5016	5025	5031	<b>-9</b>
<b>FINANCIAL</b>													
	<b>September</b>	<b>October</b>	<b>November</b>	<b>December</b>	<b>January</b>	<b>February</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>August</b>	<b>(+/-)</b>
<b>Tanks on PST Fund</b>	2,741	2,743	2,741	2,751	2,755	2,758	2,769	2,761	2,745	2,735	2,733	2,728	<b>2</b>
<b>PST Claims (Cumulative)</b>	655	657	657	660	661	663	666	669	670	672	670	670	<b>2</b>
<b>Equity Balance</b>	-\$8,286,855	-\$8,286,855	-\$8,286,855	-\$8,286,855	-\$8,286,855	-\$8,286,855	-\$8,286,855	-\$8,286,855	-\$8,908,361	-\$8,573,569	-\$8,364,249	-\$8,817,188	<b>(\$209,320)</b>
<b>Cash Balance</b>	\$16,972,968	\$17,123,780	\$17,630,497	\$16,969,043	\$15,608,438	\$15,660,762	\$15,054,100	\$15,311,622	\$15,900,293	\$16,235,085	\$16,444,405	\$15,991,466	<b>(\$209,320)</b>
<b>Loans</b>	0	0	0	0	0	0	0	0	0	0	1	0	<b>-1</b>
<b>Cumulative Loans</b>	111	111	111	111	111	111	111	111	111	111	112	112	<b>-1</b>
<b>Cumulative Amount</b>	\$4,069,774	\$4,069,774	\$4,069,774	\$4,069,774	\$4,069,774	\$4,069,774	\$4,069,774	\$4,069,774	\$4,069,774	\$4,069,774	\$4,079,887	\$4,079,887	<b>(\$10,113)</b>
<b>Defaults/Amount</b>	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
	<b>September</b>	<b>October</b>	<b>November</b>	<b>December</b>	<b>January</b>	<b>February</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>August</b>	<b>TOTAL</b>
<b>Speed Memos</b>	47	50	42	36	34	10	41	44	55	45	42	20	<b>466</b>
<b>Compliance Letters</b>	9	6	3	11	2	1	5	3	3	3	6	2	<b>54</b>
<b>Notice of Intent to Revoke</b>	0	0	0	2	0	0	0	0	0	0	0	0	<b>2</b>
<b>Orders</b>	1	0	0	0	0	0	1	0	1	0	0	0	<b>3</b>

**UTAH WASTE MANAGEMENT AND RADIATION CONTROL  
BOARD**

**Executive Summary**

**Final Adoption of Amendments to Radiation Control Rules**

R313-12, R313-19, R313-21, and R313-22

October 12, 2017

<p><b>What is the issue before the Board?</b></p>	<p>Approve final adoption of the changes to the appropriate sections of the following radiation control rules: R313-12, <i>General Provisions</i>; R313-19, <i>Requirements of General Applicability to Licensing of Radioactive Material</i>; R313-21, <i>General Licenses</i>; and R313-22, <i>Specific Licenses</i>; by incorporating the federal regulatory changes promulgated by the Nuclear Regulatory Commission (NRC) in the <i>Federal Register</i> on May 29, 2013 (78 FR 32310).</p>
<p><b>What is the historical background or context for this issue?</b></p>	<p>On May 29, 2013, the NRC adopted changes to 10 CFR Parts 30, 40, and 70. These rule changes require the initial distribution of source material to exempt persons or to general licensees be explicitly authorized by a specific license, including new reporting requirements. The rule changes provide timely information on the types and quantities of source material distributed for use either under exemption or by general licensees. In addition, the rule changes modify the existing possession and use requirements of the general license for small quantities of source material to better align the requirements with current health and safety standards.</p> <p>Also, the rule changes revise, clarify, or delete certain source material exemptions from licensing to make the exemptions more risk informed. The rule changes affect manufacturers and distributors of certain products and materials containing source material and certain persons using source material under general license and under exemptions from licensing.</p> <p>Changes to corresponding Utah radiation control rules are required to maintain regulatory compatibility with NRC regulations, as an Agreement State with the NRC.</p> <p>On July 13, 2017, the Board authorized the filing of the proposed rule changes to initiate the formal rulemaking process and receive public comment. The proposed rule changes were filed with the Office of Administrative Rules and published in the August 15, 2017 issue of the <i>Utah State Bulletin</i>. A copy of the pertinent pages of the Bulletin follows this Executive Summary.</p> <p>No comments were received during the public comment period.</p>

<p><b>What is the governing statutory or regulatory citation?</b></p>	<p>The Board is authorized under Subsection 19-3-104(4)(a) to make rules to control the exposure to sources of radiation and Subsection 19-3-104(4)(b) to make rules to meet the requirements of federal law and maintain primacy of the radioactive materials program from the federal government. The rule changes also meet existing DEQ and state rulemaking procedures.</p>
<p><b>Is Board action required?</b></p>	<p>Yes, Board action is required for final adoption of the rule changes that incorporate the federal regulatory changes promulgated by the Nuclear Regulatory Commission (NRC) in the <i>Federal Register</i> on May 29, 2013 (78 FR 32310) regarding the distribution of source material and related revisions to the associated general license and exemption requirements.</p>
<p><b>What is the Division Director's recommendation?</b></p>	<p>The Director recommends that the Board approve the final adoption of the rule changes published in the August 15, 2017 issue of the <i>Utah State Bulletin</i> to incorporate the federal regulatory changes promulgated by the Nuclear Regulatory Commission (NRC) in the <i>Federal Register</i> on May 29, 2013 (78 FR 32310) and set an effective date of October 13, 2017.</p> <p>Final adoption of the rule changes will maintain regulatory compatibility with the NRC regulations, as required as an Agreement State with the NRC.</p>
<p><b>Where can more information be obtained?</b></p>	<p>For questions or additional information, please contact Rusty Lundberg at (801) 536-4257 or by email at <a href="mailto:rlundberg@utah.gov">rlundberg@utah.gov</a>.</p>

# UTAH STATE BULLETIN

OFFICIAL NOTICES OF UTAH STATE GOVERNMENT  
Filed July 15, 2017, 12:00 a.m. through August 01, 2017, 11:59 p.m.

Number 2017-16  
August 15, 2017

Nancy L. Lancaster, Managing Editor

The *Utah State Bulletin (Bulletin)* is an official noticing publication of the executive branch of Utah state government. The Office of Administrative Rules, part of the Department of Administrative Services, produces the *Bulletin* under authority of Section 63G-3-402.

The Portable Document Format (PDF) version of the *Bulletin* is the official version. The PDF version of this issue is available at <https://rules.utah.gov/>. Any discrepancy between the PDF version and other versions will be resolved in favor of the PDF version.

Inquiries concerning the substance or applicability of an administrative rule that appears in the *Bulletin* should be addressed to the contact person for the rule. Questions about the *Bulletin* or the rulemaking process may be addressed to: Office of Administrative Rules, PO Box 141007, Salt Lake City, Utah 84114-1007, telephone 801-538-3003. Additional rulemaking information and electronic versions of all administrative rule publications are available at <https://rules.utah.gov/>.

The information in this *Bulletin* is summarized in the *Utah State Digest (Digest)* of the same volume and issue number. The *Digest* is available by e-mail subscription or online. Visit <https://rules.utah.gov/> for additional information.

Office of Administrative Rules, Salt Lake City 84114

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Semimonthly.

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**Environmental Quality, Waste  
Management and Radiation Control,  
Radiation  
R313-12  
General Provisions**

**NOTICE OF PROPOSED RULE**

(Amendment)

DAR FILE NO.: 41991

FILED: 08/01/2017

**RULE ANALYSIS**

PURPOSE OF THE RULE OR REASON FOR THE CHANGE: The proposed changes incorporate corresponding revisions made by the U.S. Nuclear Regulatory Commission (NRC) in a final rule published in the Federal Register on 05/29/2013 (78 FR 32310) under the title of Distribution of Source Material to Exempt Persons and to General Licensees and Revision of General License and Exemptions. As an Agreement State with the NRC for the radioactive materials program in Utah, the proposed changes are made in order to maintain regulatory compatibility with the federal radioactive materials regulations and our agreement state status with the NRC. Changes are proposed in selected sections of Rules R313-12, R313-19, R313-21, and R313-22 in order to incorporate all of the corresponding revisions issued under NRC's final rule promulgated on 05/29/2013. Additional proposed changes not directly associated with NRC's final rule are being made to update noted references and citations. (EDITOR'S NOTE: A proposed amendment to Rule R313-19 is under Filing No. 41992, a proposed amendment to Rule R313-21 is under Filing No. 41993, and a proposed amendment to Rule R313-22 in under Filing No. 41994 in this issue, August 15, 2017, of the Bulletin.)

SUMMARY OF THE RULE OR CHANGE: On 07/13/2017, the Waste Management and Radiation Control Board authorized the proposed changes to be published for public review and comment. Proposed changes to Rules R313-12, R313-19, R313-21, and R313-22 reflect those revisions made by the NRC to selected sections of 10 CFR Part 40, as promulgated on 05/29/2013 (78 FR 32310). The majority of the changes are required to retain regulatory compatibility for the radioactive materials program, other proposed changes provide added clarification or correct textual errors. Specifically, incorporating the revisions promulgated by the NRC into the appropriate sections of Rule R313-12 require the initial distribution of source material to exempt persons or to general licensees be explicitly authorized by a specific license and institute new reporting requirements to provide timely information on the types and quantities of source

material distributed for use either under exemption or by general licensees. In addition, the rule modifies the existing possession and use requirements of the general license for small quantities of source material to better align the requirements with current health and safety standards. The regulatory amendments will create a regulatory framework for the initial distribution of source material to inform the Division, in the event of any manufacturer or distributor of source material becomes licensed in Utah, of what types and quantities of products containing source material are distributed for use under the exemptions from licensing and to identify persons using significant quantities of source material under the general license in Rule R313-21-21. It will also ensure that general licensees under Section R313-21-21 are informed of applicable regulations before they obtain source material. Also, the proposed rule changes revise, clarify, or delete certain source material exemptions from licensing to make the exemptions more risk informed. The NRC's final rule and the associated proposed rule changes in the Utah radiation control rules also affect the possession and use of source material under a general license or an applicable license exemption. References to the Utah Code are being updated to match the existing respective statutes in the definitions for "Dentist" and "Pharmacist". A clarification is being added to the definition of "Regulations of the U.S. Department of Transportation" to explicitly reference federal transportation regulations that are also applicable. A change to the definition of "Unrefined and unprocessed ore" is being made to be compatible with the corresponding NRC regulation of 10 CFR 40.4. Text is being added to the Records section (R313-12-51) to be compatible with the corresponding NRC regulations of 10 CFR 40.61(a) and (b) and the subsequent subsections are being renumbered. Text is being added to the Communications section (R313-12-110) to clarify that communications, reports, and applications are to be addressed to the director of the division.

STATUTORY OR CONSTITUTIONAL AUTHORIZATION FOR THIS RULE: Section 19-3-104 and Section 19-6-104

**ANTICIPATED COST OR SAVINGS TO:**

◆ **THE STATE BUDGET:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no state agencies that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, state academic institutions that may possess or use radioactive source material for research or other academic-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. However, additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No.

ML13079A302) . A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

◆ **LOCAL GOVERNMENTS:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no local governments that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

◆ **SMALL BUSINESSES:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no small businesses in Utah that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a small business that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

◆ **PERSONS OTHER THAN SMALL BUSINESSES, BUSINESSES, OR LOCAL GOVERNMENTAL ENTITIES:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no other entities in Utah that currently manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a person that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's

regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

**COMPLIANCE COSTS FOR AFFECTED PERSONS:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no entities in Utah that will be affected by the proposed rule changes since no entities in Utah manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a business or person that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

**COMMENTS BY THE DEPARTMENT HEAD ON THE FISCAL IMPACT THE RULE MAY HAVE ON BUSINESSES:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no entities in Utah that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a business or person that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

THE FULL TEXT OF THIS RULE MAY BE INSPECTED, DURING REGULAR BUSINESS HOURS, AT:  
ENVIRONMENTAL QUALITY

WASTE MANAGEMENT AND RADIATION  
CONTROL, RADIATION  
SECOND FLOOR  
195 N 1950 W  
SALT LAKE CITY, UT 84116-4880  
or at the Office of Administrative Rules.

DIRECT QUESTIONS REGARDING THIS RULE TO:

- ◆ Rusty Lundberg by phone at 801-536-4257, by FAX at 801-536-0222, or by Internet E-mail at [rlundberg@utah.gov](mailto:rlundberg@utah.gov)
- ◆ Thomas Ball by phone at 801-536-0251, or by Internet E-mail at [tball@utah.gov](mailto:tball@utah.gov)

INTERESTED PERSONS MAY PRESENT THEIR VIEWS ON THIS RULE BY SUBMITTING WRITTEN COMMENTS NO LATER THAN AT 5:00 PM ON 09/15/2017

THIS RULE MAY BECOME EFFECTIVE ON: 10/16/2017

AUTHORIZED BY: Scott Anderson, Director

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**R313. Environmental Quality, Waste Management and Radiation Control, Radiation.**

**R313-12. General Provisions.**

**R313-12-3. Definitions.**

As used in these rules, these terms shall have the definitions set forth below. Additional definitions used only in a certain rule will be found in that rule.

"A1" means the maximum activity of special form radioactive material permitted in a Type A package.

"A2" means the maximum activity of radioactive material, other than special form radioactive material, low specific activity, and surface contaminated object material permitted in a Type A package. These values are either listed in 10 CFR 71, Appendix A, which is incorporated by reference in Section R313-19-100 or may be derived in accordance with the procedures prescribed in 10 CFR 71, Appendix A, which is incorporated by reference in Section R313-19-100.

"Absorbed dose" means the energy imparted by ionizing radiation per unit mass of irradiated material. The units of absorbed dose are the gray (Gy) and the rad.

"Accelerator produced radioactive material" means material made radioactive by a particle accelerator.

"Act" means Utah Radiation Control Act, Title 19, Chapter 3.

"Activity" means the rate of disintegration or transformation or decay of radioactive material. The units of activity are the becquerel (Bq) and the curie (Ci).

"Adult" means an individual 18 or more years of age.

"Address of use" means the building or buildings that are identified on the license and where radioactive material may be received, used or stored.

"Advanced practice registered nurse" means an individual licensed by this state to engage in the practice of advanced practice registered nursing. See Sections 58-31b-101 through 58-31b-801, Nurse Practice Act.

"Agreement State" means a state with which the United States Nuclear Regulatory Commission or the Atomic Energy

Commission has entered into an effective agreement under Section 274 b. of the Atomic Energy Act of 1954, as amended (73 Stat. 689).

"Airborne radioactive material" means a radioactive material dispersed in the air in the form of dusts, fumes, particulates, mists, vapors, or gases.

"Airborne radioactivity area" means: a room, enclosure, or area in which airborne radioactive material exists in concentrations:

(a) In excess of the derived air concentrations (DACs), specified in Rule R313-15, or

(b) To such a degree that an individual present in the area without respiratory protective equipment could exceed, during the hours an individual is present in a week, an intake of 0.6 percent of the annual limit on intake (ALI), or 12 DAC hours.

"As low as reasonably achievable" (ALARA) means making every reasonable effort to maintain exposures to radiation as far below the dose limits as is practical, consistent with the purpose for which the licensed or registered activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed or registered sources of radiation in the public interest.

"Area of use" means a portion of an address of use that has been set aside for the purpose of receiving, using, or storing radioactive material.

"Background radiation" means radiation from cosmic sources; naturally occurring radioactive materials, including radon, except as a decay product of source or special nuclear material, and including global fallout as it exists in the environment from the testing of nuclear explosive devices or from past nuclear accidents such as Chernobyl that contribute to background radiation and are not under the control of the licensee. "Background radiation" does not include sources of radiation from radioactive materials regulated by the Division of Waste Management and Radiation Control under the Radiation Control Act or Rules.

"Becquerel" (Bq) means the SI unit of activity. One becquerel is equal to one disintegration or transformation per second.

"Bioassay" means the determination of kinds, quantities or concentrations, and in some cases, the locations of radioactive material in the human body, whether by direct measurement (in vivo counting) or by analysis and evaluation of materials excreted or removed from the human body. For purposes of these rules, "radiobioassay" is an equivalent term.

"Board" means the Waste Management and Radiation Control Board created under Section 19-1-106.

"Byproduct material" means:

(a) a radioactive material, with the exception of special nuclear material, yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material;

(b) 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 these solution extraction operations do not constitute "byproduct material" within this definition;

(c) (i) a discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or

(ii) material that

(A) has been made radioactive by use of a particle accelerator; and

(B) is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; and

(d) a discrete source of naturally occurring radioactive material, other than source material, that

(i) The Commission, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate Federal agency, has determined would pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security; and

(ii) Before, on, or after August 8, 2005, is extracted or converted after extraction for use in a commercial, medical, or research activity.

"Calibration" means the determination of:

(a) the response or reading of an instrument relative to a series of known radiation values over the range of the instrument; or

(b) the strength of a source of radiation relative to a standard.

"CFR" means Code of Federal Regulations.

"Chelating agent" means a chemical ligand that can form coordination compounds in which the ligand occupies more than one coordination position. The agents include beta diketones, certain proteins, amine polycarboxylic acids, hydroxycarboxylic acids, gluconic acid, and polycarboxylic acids.

"Chiropractor" means an individual licensed by this state to engage in the practice of chiropractic. See Sections 58-73-101 through 58-73-701, Chiropractic Physician Practice Act.

"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 these rules that have a reasonable nexus to radiological health and safety.

"Commission" means the U.S. Nuclear Regulatory Commission.

"Committed dose equivalent" (HT,50), means the dose equivalent to organs or tissues of reference (T), that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.

"Committed effective dose equivalent" (HE,50), is the sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to each of these organs or tissues.

"Consortium" means an association of medical use licensees and a PET radionuclide production facility in the same geographical area that jointly own or share in the operation and maintenance cost of the PET radionuclide production facility that produces PET radionuclides for use in producing radioactive drugs within the consortium for noncommercial distributions among its associated members for medical use. The PET radionuclide production facility within the consortium must be located at an educational institution, a Federal facility, or a medical facility.

"Construction" means the installation of wells associated with radiological operations; for example, 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 these rules that are related to radiological safety or security. The term "construction" does not include:

(a) changes for temporary use of the land for public recreational purposes;

(b) 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;

(c) 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;

(d) erection of fences and other access control measures that are not related to the safe use of, or security of, radiological materials subject to this part;

(e) excavation;

(f) erection of support buildings; for example, 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;

(g) building of service facilities; for example, paved roads, parking lots, railroad spurs, exterior utility and lighting systems, potable water systems, sanitary sewerage treatment facilities, and transmission lines;

(h) procurement or fabrication of components or portions of the proposed facility occurring at other than the final, in-place location at the facility; or

(i) taking any other action that has no reasonable nexus to radiological health and safety.

"Controlled area" means an area, outside of a restricted area but inside the site boundary, access to which can be limited by the licensee or registrant for any reason.

"Critical group" means the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.

"Curie" means a unit of measurement of activity. One curie (Ci) is that quantity of radioactive material which decays at the rate of  $3.7 \times 10^{10}$  to the tenth power disintegrations or transformations per second (dps or tps).

"Cyclotron" means a particle accelerator in which the charged particles travel in an outward spiral or circular path. A cyclotron accelerates charged particles at energies usually in excess of 10 megaelectron volts and is commonly used for production of short half-life radionuclides for medical use.

"Decommission" means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits:

(a) release of property for unrestricted use and termination of the license; or

(b) release of the property under restricted conditions and termination of the license.

"Deep dose equivalent" ( $H_d$ ), which applies to external whole body exposure, means the dose equivalent at a tissue depth of one centimeter ( $1000 \text{ mg/cm}^2$ ).

"Dentist" means an individual licensed by this state to engage in the practice of dentistry. See sections 58-69-101 through [58-69-805]58-69-806, Dentist and Dental Hygienist Practice Act.

"Department" means the Utah Department of Environmental Quality.

"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.

"Diffuse source" means a radionuclide that has been unintentionally produced or concentrated during the processing of materials for use for commercial, medical, or research activities.

"Director" means the Director of the Division of Waste Management and Radiation Control.

"Discrete source" means a radionuclide that has been processed so that its concentration within a material has been purposely increased for use for commercial, medical, or research activities.

"Distinguishable from background" means that the detectable concentration of a radionuclide is statistically different from the background concentration of that radionuclide in the vicinity of the site or, in the case of structures, in similar materials using adequate measurement technology, survey, and statistical techniques.

"Dose" is a generic term that means absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, or total effective dose equivalent. For purposes of these rules, "radiation dose" is an equivalent term.

"Dose equivalent" ( $H_T$ ), means the product of the absorbed dose in tissue, quality factor, and other necessary modifying factors at the location of interest. The units of dose equivalent are the sievert (Sv) and rem.

"Dose limits" means the permissible upper bounds of radiation doses established in accordance with these rules. For purpose of these rules, "limits" is an equivalent term.

"Effective dose equivalent" ( $H_E$ ), means the sum of the products of the dose equivalent to each organ or tissue ( $H_T$ ), and the weighting factor ( $w_T$ ) applicable to each of the body organs or tissues that are irradiated.

"Embryo/fetus" means the developing human organism from conception until the time of birth.

"Entrance or access point" means an opening through which an individual or extremity of an individual could gain access to radiation areas or to licensed or registered radioactive materials. This includes entry or exit portals of sufficient size to permit human entry, irrespective of their intended use.

"Explosive material" means a chemical compound, mixture, or device which produces a substantial instantaneous release of gas and heat spontaneously or by contact with sparks or flame.

"EXPOSURE" when capitalized, means the quotient of dQ by dm where "dQ" is the absolute value of the total charge of the ions of one sign produced in air when all the electrons, both negatrons and positrons, liberated by photons in a volume element of air having a mass of "dm" are completely stopped in air. The special unit of EXPOSURE is the roentgen (R). See Section R313-12-20 Units of exposure and dose for the SI equivalent. For purposes of these rules, this term is used as a noun.

"Exposure" when not capitalized as the above term, means being exposed to ionizing radiation or to radioactive material. For purposes of these rules, this term is used as a verb.

"EXPOSURE rate" means the EXPOSURE per unit of time, such as roentgen per minute and milliroentgen per hour.

"External dose" means that portion of the dose equivalent received from a source of radiation outside the body.

"Extremity" means hand, elbow, arm below the elbow, foot, knee, and leg below the knee.

"Facility" means the location within one building, vehicle, or under one roof and under the same administrative control

(a) at which the use, processing or storage of radioactive material is or was authorized; or

(b) at which one or more radiation-producing machines or radioactivity-inducing machines are installed or located.

"Former United States Atomic Energy Commission (AEC) or United States Nuclear Regulatory Commission (NRC) licensed facilities" means nuclear reactors, nuclear fuel reprocessing plants, uranium enrichment plants, or critical mass experimental facilities where AEC or NRC licenses have been terminated.

"Generally applicable environmental radiation standards" means standards issued by the U.S. Environmental Protection Agency under the authority of the Atomic Energy Act of 1954, as amended, that impose limits on radiation exposures or levels, or concentrations or quantities of radioactive material, in the general environment outside the boundaries of locations under the control of persons possessing or using radioactive material.

"Gray" (Gy) means the SI unit of absorbed dose. One gray is equal to an absorbed dose of one joule per kilogram.

"Hazardous waste" means those wastes designated as hazardous by the U.S. Environmental Protection Agency rules in 40 CFR Part 261.

"Healing arts" means the disciplines of medicine, dentistry, osteopathy, chiropractic, and podiatry.

"High radiation area" means an area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving a dose equivalent in excess of one mSv (0.1 rem), in one hour at 30 centimeters from the source of radiation or from a surface that the radiation penetrates. For purposes of these rules, rooms or areas in which diagnostic x-ray systems are used for healing arts purposes are not considered high radiation areas.

"Human use" means the intentional internal or external administration of radiation or radioactive material to human beings.

"Individual" means a human being.

"Individual monitoring" means the assessment of:

(a) dose equivalent, by the use of individual monitoring devices or, by the use of survey data; or

(b) committed effective dose equivalent by bioassay or by determination of the time weighted air concentrations to which an individual has been exposed, that is, DAC-hours.

"Individual monitoring devices" means devices designed to be worn by a single individual for the assessment of dose equivalent. For purposes of these rules, individual monitoring equipment and personnel monitoring equipment are equivalent terms. Examples of individual monitoring devices are film badges, thermoluminescence dosimeters (TLD's), pocket ionization chambers, and personal air sampling devices.

"Inspection" means an official examination or observation including, but not limited to, tests, surveys, and monitoring to determine compliance with rules, orders, requirements and conditions applicable to radiation sources.

"Interlock" means a device arranged or connected requiring the occurrence of an event or condition before a second condition can occur or continue to occur.

"Internal dose" means that portion of the dose equivalent received from radioactive material taken into the body.

"Lens dose equivalent" (LDE) applies to the external exposure of the lens of the eye and is taken as the dose equivalent at a tissue depth of 0.3 centimeter (300 mg/cm<sup>2</sup>).

"License" means a license issued by the Director in accordance with the rules adopted by the Board.

"Licensee" means a person who is licensed by the Department in accordance with these rules and the Act.

"Licensed or registered material" means radioactive material, received, possessed, used or transferred or disposed of under a general or specific license issued by the Director.

"Licensing state" means a state which, prior to November 30, 2007, was provisionally or finally designated as such by the Conference of Radiation Control Program Directors, Inc., which reviewed state regulations to establish equivalency with the Suggested State Regulations and ascertained whether a State has an effective program for control of natural occurring or accelerator produced radioactive material.

"Limits". See "Dose limits".

"Lost or missing source of radiation" means licensed or registered sources of radiation whose location is unknown. This definition includes, but is not limited to, radioactive material that has been shipped but has not reached its planned destination and whose location cannot be readily traced in the transportation system.

"Major processor" means a user processing, handling, or manufacturing radioactive material exceeding Type A quantities as unsealed sources or material, or exceeding four times Type B quantities as sealed sources, but does not include nuclear medicine programs, universities, industrial radiographers, or small industrial programs. Type A and B quantities are defined in 10 CFR 71.4.

"Member of the public" means an individual except when that individual is receiving an occupational dose.

"Minor" means an individual less than 18 years of age.

"Monitoring" means the measurement of radiation, radioactive material concentrations, surface area activities or quantities of radioactive material, and the use of the results of these measurements to evaluate potential exposures and doses. For purposes of these rules, radiation monitoring and radiation protection monitoring are equivalent terms.

"Natural radioactivity" means radioactivity of naturally occurring nuclides.

"Nuclear Regulatory Commission" (NRC) means the U.S. Nuclear Regulatory Commission or its duly authorized representatives.

"Occupational dose" means the dose received by an individual in the course of employment in which the individual's assigned duties for the licensee or registrant involve exposure to sources of radiation, whether or not the sources of radiation are in the possession of the licensee, registrant, or other person. Occupational dose does not include doses received from background radiation, from any medical administration the individual has received, from exposure

to individuals administered radioactive material and released in accordance with Rule R313-32, from voluntary participation in medical research programs, or as a member of the public.

"Package" means the packaging together with its radioactive contents as presented for transport.

"Particle accelerator" means a machine capable of accelerating electrons, protons, deuterons, or other charged particles in a vacuum and of discharging the resultant particulate or other radiation into a medium at energies usually in excess of one megaelectron volt. For purposes of these rules, "accelerator" is an equivalent term.

"Permit" means a permit issued by the Director in accordance with the rules adopted by the Board.

"Permitee" means a person who is permitted by the Director in accordance with these rules and the Act.

"Person" means an individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, political subdivision of this state, or another state or political subdivision or agency thereof, and a legal successor, representative, agent or agency of the foregoing.

"Personnel monitoring equipment," see individual monitoring devices.

"Pharmacist" means an individual licensed by this state to engage in the practice of pharmacy. See Sections 58-17b-101 through ~~58-17b-801~~ 58-17b-806, Pharmacy Practice Act.

"Physician" means both physicians and surgeons licensed under Section 58-67-301, Utah Medical Practice Act, and osteopathic physicians and surgeons licensed under Section 58-68-301, Utah Osteopathic Medical Practice Act.

"Physician assistant" means an individual licensed by this state to engage in practice as a physician assistant. See Sections 58-70a-101 through 58-70a-504, Physician Assistant Act.

"Podiatrist" means an individual licensed by this state to engage in the practice of podiatry. See Sections 58-5a-101 through 58-5a-501, Podiatric Physician Licensing Act.

"Practitioner" means an individual licensed by this state in the practice of a healing art. For these rules, only the following are considered to be a practitioner: physician, dentist, podiatrist, chiropractor, physician assistant, and advanced practice registered nurse.

"Protective apron" means an apron made of radiation-attenuating materials used to reduce exposure to radiation.

"Public dose" means the dose received by a member of the public from exposure to radiation or to radioactive materials released by a licensee, or to any other source of radiation under the control of a licensee or registrant. Public dose does not include occupational dose or doses received from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released in accordance with Rule R313-32, or from voluntary participation in medical research programs.

"Pyrophoric material" means any liquid that ignites spontaneously in dry or moist air at or below 130 degrees Fahrenheit (54.4 degrees Celsius) or any solid material, other than one classed as an explosive, which under normal conditions is liable to cause fires through friction, retained heat from manufacturing or processing, or which can be ignited and, when ignited, burns so vigorously and persistently as to create a serious transportation, handling, or disposal hazard. Included are spontaneously combustible and water-reactive materials.

"Quality factor" (Q) means the modifying factor, listed in Tables 1 and 2 of Section R313-12-20 that is used to derive dose equivalent from absorbed dose.

"Rad" means the special unit of absorbed dose. One rad is equal to an absorbed dose of 100 erg per gram or 0.01 joule per kilogram

"Radiation" means alpha particles, beta particles, gamma rays, x-rays, neutrons, high speed electrons, high speed protons, and other particles capable of producing ions. For purposes of these rules, ionizing radiation is an equivalent term. Radiation, as used in these rules, does not include non-ionizing radiation, like radiowaves or microwaves, visible, infrared, or ultraviolet light.

"Radiation area" means an area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.05 mSv (0.005 rem), in one hour at 30 centimeters from the source of radiation or from a surface that the radiation penetrates.

"Radiation machine" means a device capable of producing radiation except those devices with radioactive material as the only source of radiation.

"Radiation safety officer" means an individual who has the knowledge and responsibility to apply appropriate radiation protection rules and has been assigned such responsibility by the licensee or registrant. For a licensee authorized to use radioactive materials in accordance with the requirements of Rule R313-32,

(1) the individual named as the "Radiation Safety Officer" must meet the training requirements for a Radiation Safety Officer as stated in Rule R313-32; or

(2) the individual must be identified as a "Radiation Safety Officer" on

(a) a specific license issued by the Director, the U.S. Nuclear Regulatory Commission, or an Agreement State that authorizes the medical use of radioactive materials; or

(b) a medical use permit issued by a U.S. Nuclear Regulatory Commission master material licensee.

"Radiation source". See "Source of radiation."

"Radioactive material" means a solid, liquid, or gas which emits radiation spontaneously.

"Radioactivity" means the transformation of unstable atomic nuclei by the emission of radiation.

"Radiobioassay". See "Bioassay".

"Registrant" means any person who is registered with respect to radioactive materials or radiation machines with the Director or is legally obligated to register with the Director pursuant to these rules and the Act.

"Registration" means registration with the Director in accordance with the rules adopted by the Board.

"Regulations of the U.S. Department of Transportation" means 49 CFR 100 through 189 and 49 CFR 390 through 397, as referenced in 49 CFR 177.

"Rem" means the special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rem is equal to the absorbed dose in rad multiplied by the quality factor. One rem equals 0.01 sievert (Sv).

"Research and development" means:

(a) theoretical analysis, exploration, or experimentation; or

(b) 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. Research and development does not include the internal or external administration of radiation or radioactive material to human beings.

"Residual radioactivity" means radioactivity in structures, materials, soils, groundwater, and other media at a site resulting from activities under the licensee's control. This includes radioactivity from all licensed and unlicensed sources used by the licensee, but excludes background radiation. It also includes radioactive materials remaining at the site as a result of routine or accidental releases of radioactive material at the site and previous burials at the site, even if those burials were made in accordance with the provisions of Rule R313-15.

"Restricted area" means an area, access to which is limited by the licensee or registrant for the purpose of protecting individuals against undue risks from exposure to sources of radiation. A "Restricted area" does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area.

"Roentgen" (R) means the special unit of EXPOSURE. One roentgen equals  $2.58 \times 10^{-4}$  coulombs per kilogram of air. See EXPOSURE.

"Sealed source" means radioactive material that is permanently bonded or fixed in a capsule or matrix designed to prevent release and dispersal of the radioactive material under the most severe conditions which are likely to be encountered in normal use and handling.

"Sealed source and device registry" means the national registry that contains all the registration certificates, generated by both NRC and the Agreement States, that summarize the radiation safety information for the sealed sources and devices and describe the licensing and use conditions approved for the product.

"Shallow dose equivalent" (Hs) which applies to the external exposure of the skin of the whole body or the skin of an extremity, is taken as the dose equivalent at a tissue depth of 0.007 centimeter (seven mg per square centimeter).

"SI" means an abbreviation of the International System of Units.

"Sievert" (Sv) means the SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in sievert is equal to the absorbed dose in gray multiplied by the quality factor. One Sv equals 100 rem.

"Site boundary" means that line beyond which the land or property is not owned, leased, or otherwise controlled by the licensee or registrant.

"Source container" means a device in which sealed sources are transported or stored.

"Source material" means:

(a) uranium or thorium, or any combination thereof, in any physical or chemical form, or

(b) ores that contain by weight one-twentieth of one percent (0.05 percent), or more of, uranium, thorium, or any combination of uranium and thorium. Source material does not include special nuclear material.

"Source material milling" means any activity that results in the production of byproduct material as defined by (b) of "byproduct material".

"Source of radiation" means any radioactive material, or a device or equipment emitting or capable of producing ionizing radiation.

"Special form radioactive material" means radioactive material which satisfies the following conditions:

(a) it is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule;

(b) the piece or capsule has at least one dimension not less than five millimeters (0.197 inch); and

(c) it satisfies the test requirements specified by the U.S. Nuclear Regulatory Commission in 10 CFR 71.75. A special form encapsulation designed in accordance with the U.S. Nuclear Regulatory Commission requirements in effect on June 30, 1983, and constructed prior to July 1, 1985, may continue to be used. A special form encapsulation designed in accordance with the requirements of 10 CFR 71.4 in effect on March 31, 1996, (see 10 CFR 71 revised January 1, 1983), and constructed before April 1, 1998, may continue to be used. Any other special form encapsulation must meet the specifications of this definition.

"Special nuclear material" means:

(a) plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and other material that the U.S. Nuclear Regulatory Commission, pursuant to the provisions of section 51 of the Atomic Energy Act of 1954, as amended, determines to be special nuclear material, but does not include source material; or

(b) any material artificially enriched by any of the foregoing but does not include source material.

"Special nuclear material in quantities not sufficient to form a critical mass" means uranium enriched in the isotope U-235 in quantities not exceeding 350 grams of contained U-235; uranium-233 in quantities not exceeding 200 grams; plutonium in quantities not exceeding 200 grams or a combination of them in accordance with the following formula: For each kind of special nuclear material, determine the ratio between the quantity of that special nuclear material and the quantity specified above for the same kind of special nuclear material. The sum of such ratios for all of the kinds of special nuclear material in combination shall not exceed one. For example, the following quantities in combination would not exceed the limitation and are within the formula:

$((175(\text{Grams contained U-235})/350) + (50(\text{Grams U-233})/200) + (50(\text{Grams Pu})/200))$  is equal to one.

"Survey" means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of sources of radiation. When appropriate, such evaluation includes, but is not limited to, tests, physical examinations and measurements of levels of radiation or concentrations of radioactive material present.

"Test" means the process of verifying compliance with an applicable rule.

"These rules" means "Utah Radiation Control Rules".

"Total effective dose equivalent" (TEDE) means the sum of the effective dose equivalent for external exposures and the committed effective dose equivalent for internal exposures.

"Total organ dose equivalent" (TODE) means the sum of the deep dose equivalent and the committed dose equivalent to the organ receiving the highest dose as described in Subsection R313-15-1107(1) (f).

"U.S. Department of Energy" means the Department of Energy established by Public Law 95-91, August 4, 1977, 91 Stat. 565, 42 U.S.C. 7101 et seq., to the extent that the Department 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 Public Law 93-438, October 11, 1974, 88 Stat. 1233 at 1237, effective January 19, 1975 known as the Energy Reorganization Act of 1974, and retransferred to the Secretary of Energy pursuant to section 301(a) of Public Law 95-91, August 14, 1977, 91 Stat. 565 at 577-578, 42 U.S.C. 7151, effective October 1, 1977 known as the Department of Energy Organization Act.

"Unrefined and unprocessed ore" means ore in its natural form prior to processing, like grinding, roasting~~;~~ or beneficiating, or refining. Processing does not include sieving or encapsulation of ore or preparation of samples for laboratory analysis.

"Unrestricted area" means an area, to which access is neither limited nor controlled by the licensee or registrant. For purposes of these rules, "uncontrolled area" is an equivalent term.

"Waste" means those low-level radioactive wastes containing radioactive material that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level radioactive waste means radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in paragraphs (b), (c), and (d) of the definition of byproduct material found in Section R313-12-3.

"Week" means seven consecutive days starting on Sunday.

"Whole body" means, for purposes of external exposure, head, trunk including male gonads, arms above the elbow, or legs above the knees.

"Worker" means an individual engaged in work under a license or registration issued by the Director and controlled by a licensee or registrant, but does not include the licensee or registrant.

"Working level" (WL), means any combination of short-lived radon daughters in one liter of air that will result in the ultimate emission of  $1.3 \times 10^5$  MeV of potential alpha particle energy. The short-lived radon daughters are, for radon-222: polonium-218, lead-214, bismuth-214, and polonium-214; and for radon 220: polonium-216, lead-212, bismuth-212, and polonium-212.

"Working level month" (WLM), means an exposure to one working level for 170 hours. 2,000 working hours per year divided by 12 months per year is approximately equal to 170 hours per month.

"Year" means the period of time beginning in January used to determine compliance with the provisions of these rules. The licensee or registrant may change the starting date of the year used to determine compliance by the licensee or registrant provided that the decision to make the change is made not later than December 31 of the previous year. If a licensee or registrant changes in a year, the licensee or registrant shall assure that no day is omitted or duplicated in consecutive years.

### **R313-12-51. Records.**

(1) A person who receives source or byproduct material pursuant to a license issued pursuant to the regulations in this part shall keep records showing the receipt, transfer, and disposal of this source or byproduct material as follows:

(a) The licensee shall retain each record of receipt of source or byproduct material as long as the material is possessed and for three years following transfer or disposition of the source or byproduct material.

(b) The licensee who transferred the material shall retain each record of transfer of source or byproduct material until the Director terminates each license that authorizes the activity that is subject to the recordkeeping requirement.

(c) The licensee shall retain each record of disposal of source or byproduct material until the Director terminates each license that authorizes the activity that is subject to the recordkeeping requirement.

(d) If source or byproduct material is combined or mixed with other licensed material and subsequently treated in a manner that makes direct correlation of a receipt record with a transfer, export, or disposition record impossible, the licensee may use evaluative techniques, such as first-in-first-out, to make the records that are required by Section R313-12-51 account for 100 percent of the material received.

(2) The licensee shall retain each record that is required by Section R313-12-51 or by license condition for the period specified by the appropriate rule or license condition. If a retention period is not otherwise specified by rule or license condition, each record must be maintained until the Director terminates the license that authorizes the activity that is subject to the recordkeeping requirement.

~~(+)~~(3) A licensee or registrant shall maintain records showing the receipt, transfer, and disposal of all sources of radiation.

~~(2)~~(4) Prior to license termination, each licensee authorized to possess radioactive material with a half-life greater than 120 days, in an unsealed form, may forward the following records to the Director:

(a) records of disposal of licensed material made under Sections R313-15-1002 (including burials authorized before January 28, 1981), R313-15-1003, R313-15-1004, and R313-15-1005; and

(b) records required by Subsection R313-15-1103(2)(d).

NOTE: 10 CFR 20.304 permitted burial of small quantities of licensed materials in soil before January 28, 1981, without specific U.S. Nuclear Regulatory Commission authorization. See 20.304 contained in the 10 CFR, parts 0 to 199, edition revised as of January 1, 1981.

~~(3)~~(5) If licensed activities are transferred or assigned in accordance with Subsection R313-19-34(2), each licensee authorized to possess radioactive material, with a half-life greater than 120 days, in an unsealed form, shall transfer the following records to the new licensee and the new licensee will be responsible for maintaining these records until the license is terminated:

(a) records of disposal of licensed material made under Sections R313-15-1002 (including burials authorized before January 28, 1981), R313-15-1003, R313-15-1004, R313-15-1005, and R313-15-1008; and

(b) records required by Subsection R313-15-1103(2)(d).

~~(4)~~(6) Prior to license termination, each licensee may forward the records required by Subsection R313-22-35(7) to the Director.

~~(5)~~(7) Additional records requirements are specified elsewhere in these rules.

### **R313-12-110. Communications.**

All communications and reports concerning these rules, and applications filed thereunder, should be addressed to the Director of the Division of Waste Management and Radiation Control, P.O. Box 144880, 195 North 1950 West, Salt Lake City, Utah 84114-4880.

**KEY: definitions, units, inspections, exemptions**

**Date of Enactment or Last Substantive Amendment:** [~~June 16, 2015~~]**2017**

**Notice of Continuation:** July 1, 2016

**Authorizing, and Implemented or Interpreted Law:** 19-3-104; [~~19-6-107~~]**19-6-104**

**Environmental Quality, Waste  
Management and Radiation Control,  
Radiation  
R313-19  
Requirements of General Applicability  
to Licensing of Radioactive Material**

**NOTICE OF PROPOSED RULE**

(Amendment)

DAR FILE NO.: 41992

FILED: 08/01/2017

**RULE ANALYSIS**

**PURPOSE OF THE RULE OR REASON FOR THE CHANGE:** The proposed changes incorporate corresponding revisions made by the U.S. Nuclear Regulatory Commission (NRC) in a final rule published in the Federal Register on 05/29/2013 (78 FR 32310) under the title of Distribution of Source Material to Exempt Persons and to General Licensees and Revision of General License and Exemptions. As an Agreement State with the NRC for the radioactive materials program in Utah, the proposed changes are made in order to maintain regulatory compatibility with the federal radioactive materials regulations and our agreement state status with the NRC. Changes are proposed in selected sections of Rules R313-12, R313-19, R313-21, and R313-22 in order to incorporate all of the corresponding revisions issued under NRC's final rule promulgated on 05/29/2013. Additional proposed changes not directly associated with NRC's final rule are being made to update noted references and citations. (EDITOR'S NOTE: A proposed amendment to Rule R313-12 is under Filing No. 41991, a proposed amendment to Rule R313-21 is under Filing No. 41993, and a proposed amendment to Rule R313-22 in under Filing No. 41994 in this issue, August 15, 2017, of the Bulletin.)

**SUMMARY OF THE RULE OR CHANGE:** On 07/13/2017, the Waste Management and Radiation Control Board authorized the proposed changes to be published for public review and comment. Proposed changes to Rules R313-12, R313-19, R313-21, and R313-22 reflect those revisions made by the NRC to selected sections of 10 CFR Part 40, as promulgated on 05/29/2013 (78 FR 32310). The majority of the changes are required to retain regulatory compatibility for the radioactive materials program, other proposed changes provide added clarification or correct textual errors. Specifically, incorporating the revisions promulgated by the

NRC into the appropriate sections of Rule R313-19 require the initial distribution of source material to exempt persons or to general licensees be explicitly authorized by a specific license and institute new reporting requirements to provide timely information on the types and quantities of source material distributed for use either under exemption or by general licensees. In addition, the rule modifies the existing possession and use requirements of the general license for small quantities of source material to better align the requirements with current health and safety standards. The regulatory amendments will create a regulatory framework for the initial distribution of source material to inform the Division, in the event of any manufacturer or distributor of source material becomes licensed in Utah, of what types and quantities of products containing source material are distributed for use under the exemptions from licensing and to identify persons using significant quantities of source material under the general license in Section R313-21-21. It will also ensure that general licensees under Section R313-21-21 are informed of applicable regulations before they obtain source material. Also, the proposed rule changes revise, clarify, or delete certain source material exemptions from licensing to make the exemptions more risk informed. The NRC's final rule and the associated proposed rule changes in the Utah radiation control rules also affect the possession and use of source material under a general license or an applicable license exemption. Proposed changes in the Exemptions section (R313-19-13) are being made to be compatible with the corresponding NRC regulations of 10 CFR 40.13 as promulgated on 05/29/2013 (78 FR 32310) regarding the distribution of certain quantities of source material (radioactive material containing uranium and/or thorium). The associated dates noted in the proposed changes in Section R313-19-13 are proposed to be 10/16/2017 based on the Waste Management and Radiation Control Board's action, during their scheduled meeting on 10/12/2017 to set the effective date of the rule changes as 10/16/2017. The edition date of the two incorporations by reference in Section R313-19-50 to Appendix B of 10 CFR Part 20 are updated from 2010 to 2017.

**STATUTORY OR CONSTITUTIONAL AUTHORIZATION FOR THIS RULE:** Section 19-3-104 and Section 19-6-104

**MATERIALS INCORPORATED BY REFERENCE:**

- ◆ Updates 10 CFR Part 20, Appendix B, published by Government Printing Office, 01/01/2017

**ANTICIPATED COST OR SAVINGS TO:**

◆ **THE STATE BUDGET:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no state agencies that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, state academic institutions that may possess or use radioactive source material for research or other academic-related purposes beyond the proposed quantity limit may

need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. However, additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

◆ **LOCAL GOVERNMENTS:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no local governments that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

◆ **SMALL BUSINESSES:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no small business in Utah that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a small business that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

◆ **PERSONS OTHER THAN SMALL BUSINESSES, BUSINESSES, OR LOCAL GOVERNMENTAL ENTITIES:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no other entities in Utah that currently manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a person that may possess or use radioactive source material for commercial, operational, research,

development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

**COMPLIANCE COSTS FOR AFFECTED PERSONS:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no entities in Utah that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a business or person that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

**COMMENTS BY THE DEPARTMENT HEAD ON THE FISCAL IMPACT THE RULE MAY HAVE ON BUSINESSES:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no entities in Utah that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a business or person that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is

available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

THE FULL TEXT OF THIS RULE MAY BE INSPECTED, DURING REGULAR BUSINESS HOURS, AT:

ENVIRONMENTAL QUALITY  
WASTE MANAGEMENT AND RADIATION  
CONTROL, RADIATION  
SECOND FLOOR  
195 N 1950 W  
SALT LAKE CITY, UT 84116-4880  
or at the Office of Administrative Rules.

DIRECT QUESTIONS REGARDING THIS RULE TO:

◆ Rusty Lundberg by phone at 801-536-4257, by FAX at 801-536-0222, or by Internet E-mail at [rlundberg@utah.gov](mailto:rlundberg@utah.gov)  
◆ Thomas Ball by phone at 801-536-0251, or by Internet E-mail at [tball@utah.gov](mailto:tball@utah.gov)

INTERESTED PERSONS MAY PRESENT THEIR VIEWS ON THIS RULE BY SUBMITTING WRITTEN COMMENTS NO LATER THAN AT 5:00 PM ON 09/15/2017

THIS RULE MAY BECOME EFFECTIVE ON: 10/16/2017

AUTHORIZED BY: Scott Anderson, Director

### **R313. Environmental Quality, Waste Management and Radiation Control, Radiation.**

#### **R313-19. Requirements of General Applicability to Licensing of Radioactive Material.**

##### **R313-19-13. Exemptions.**

(1) Source material.

(a) A person is exempt from Rules R313-19, R313-21, and R313-22 to the extent that the person receives, possesses, uses, owns, or transfers source material in a chemical mixture, compound, solution or alloy in which the source material is by weight less than 1/20 of one percent (0.05 percent) of the mixture, compound, solution, or alloy.

(b) A person is exempt from Rules R313-19, R313-21, and R313-22 to the extent that the person receives, possesses, uses or transfers unrefined and unprocessed ore containing source material; provided, that, except as authorized in a specific license, such person shall not refine or process the ore.

(c) A person is exempt from the requirements in Rules R313-15, R313-18, R313-19, R313-21, and R313-22 to the extent that the person receives, possesses, uses or transfers:

(i) any quantities of thorium contained in:

(A) incandescent gas mantles,

(B) vacuum tubes,

(C) welding rods,

(D) electric lamps for illuminating purposes: provided that, each lamp does not contain more than 50 milligrams of thorium,

(E) germicidal lamps, sunlamps, and lamps for outdoor or industrial lighting provided that each lamp does not contain more than two grams of thorium,

(F) rare earth metals and compounds, mixtures, and products containing not more than 0.25 percent by weight thorium, uranium, or any combination of these, or

(G) personnel neutron dosimeters provided that each dosimeter does not contain more than 50 milligrams of thorium;

(ii) source material contained in the following products:

(A) glazed ceramic tableware manufactured before October 16, 2017, provided that the glaze contains not more than 20 percent by weight source material[;];

(B) piezoelectric ceramic containing not more than two percent by weight source material[;]; or

(C) glassware containing not more than two percent by weight source material or, for glassware manufactured before October 16, 2017, not more than ten percent by weight source material, but not including commercially manufactured glass brick, pane glass, ceramic tile, or other glass or ceramic used in construction;

(iii) photographic film, negatives and prints containing uranium or thorium;

(iv) a finished product or part fabricated of, or containing, tungsten-thorium or magnesium-thorium alloys, provided that the thorium content of the alloy does not exceed four percent by weight and that this exemption shall not be deemed to authorize the chemical, physical, or metallurgical treatment or processing of the product or part;

(v) uranium contained in counterweights installed in aircraft, rockets, projectiles, and missiles, or stored or handled in connection with installation or removal of the counterweights, provided that:

~~[(A) the counterweights are manufactured in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission authorizing distribution by the licensee pursuant to 10 CFR Part 40;]~~

~~[(B)](A)~~ each counterweight has been impressed with the following legend clearly legible through any plating or other covering: "DEPLETED URANIUM",

~~[(C)](B)~~ each counterweight is durably and legibly labeled or marked with the identification of the manufacturer and the statement: "UNAUTHORIZED ALTERATIONS PROHIBITED",

~~[(D)](C)~~ The requirements specified in Subsections R313-19-13(1)(c)(v)~~[(B)](A)~~ and ~~[(C)](B)~~ need not be met by counterweights manufactured prior to December 31, 1969, provided that such counterweights were manufactured under a specific license issued by the Atomic Energy Commission and were[are] impressed with the legend, "CAUTION - RADIOACTIVE MATERIAL - URANIUM", as previously required by the rules in effect on June 30, 1969, and

(E) the exemption contained in Subsection R313-19-13(1)(c)(v) shall not be deemed to authorize the chemical, physical, or metallurgical treatment or processing of any such counterweights other than repair or restoration of any plating or other covering;

(vi) natural or depleted uranium metal used as shielding constituting part of a shipping container which is conspicuously and legibly impressed with the legend "CAUTION - RADIOACTIVE SHIELDING - URANIUM" and the uranium metal is encased in mild steel or equally fire resistant metal of minimum wall thickness of one eighth inch (3.2 mm);

(vii) thorium or uranium contained in or on finished optical lenses and mirrors, provided that each lens or mirror does not contain

more than 10 percent by weight thorium or uranium or, for lenses manufactured before October 16, 2017, [does not contain more than] 30 percent by weight of thorium, and that this exemption shall not be deemed to authorize either:

(A) the shaping, grinding, or polishing of a lens or manufacturing processes other than the assembly of such lens into optical systems and devices without alteration of the lens, or

(B) the receipt, possession, use, or transfer of thorium contained in contact lenses, or in spectacles, or in eyepieces in binoculars or other optical instruments;

~~[(viii) uranium contained in detector heads for use in fire detection units, provided that each detector head contains not more than 0.005 microcurie (185.0 Bq) of uranium; or]~~

~~[(ix)](viii) thorium contained in a finished aircraft engine part containing nickel-thoria alloy, provided that:~~

(A) the thorium is dispersed in the nickel-thoria alloy in the form of finely divided thoria (thorium dioxide), and

(B) the thorium content in the nickel-thoria alloy does not exceed four percent by weight.

(ix) No person may initially transfer for sale or distribution a product containing source material to persons exempt under Subsection R313-19-13(1)(c), or equivalent regulations of an Agreement State, unless authorized by a license issued under 10 CFR 40.52 to initially transfer such products for sale or distribution.

(A) A person initially distributing source material in products covered by the exemptions in this Subsection R313-19-13(1)(c) before (Utah effective date to be set by the Board), without specific authorization may continue such distribution for one year beyond this date. Initial distribution may also be continued until the director takes final action on a pending application for license or license amendment to specifically authorize distribution submitted no later than one year beyond this date.

(B) A person authorized to manufacture, process, or produce these materials or products containing source material by an Agreement State, and a person who imports finished products or parts, for sale or distribution must be authorized by a license issued under 10 CFR 40.52 for distribution only and are exempt from the requirements of Rules R313-15 and R313-18 and Subsections R313-22-33(1)(a) and (b).

(d) The exemptions in Subsection R313-19-13(1)(c) do not authorize the manufacture of any of the products described.

(2) Radioactive material other than source material.

(a) Exempt concentrations.

(i) Except as provided in Subsection R313-19-13(2)(a)(iii) a person is exempt from Rules R313-19, R313-21 and R313-22 to the extent that the person receives, possesses, uses, transfers, owns or acquires products or materials containing:

(A) radioactive material introduced in concentrations not in excess of those listed in Section R313-19-70, or

(B) diffuse sources of natural occurring radioactive materials containing less than 15 picocuries per gram radium-226.

(ii) A manufacturer, processor, or producer of a product or material is exempt from the requirements for a license set forth in Rules R313-19, R313-21 and R313-22 and Rules R313-32, R313-34, R313-36, and R313-38 to the extent that the person transfers:

(A) radioactive material contained in a product or material in concentrations not in excess of those specified in R313-19-70; and

(B) introduced into the product or material by a licensee holding a specific license issued by the U.S. Nuclear Regulatory Commission authorizing the introduction.

(C) The exemption in R313-19-13-2(a)(ii)(A) and R313-19-13-2(a)(ii)(B) does not apply to the transfer of radioactive material contained in any food, beverage, cosmetic, drug, or other commodity or product designed for ingestion or inhalation by, or application to, a human being.

(iii) A person may not introduce radioactive material into a product or material knowing or having reason to believe that it will be transferred to persons exempt under Subsection R313-19-13(2)(a)(i) or equivalent regulations of a Licensing State, the U.S. Nuclear Regulatory Commission or an Agreement State, except in accordance with a specific license issued pursuant to Subsection R313-22-75(1).

(b) Exempt quantities.

(i) Except as provided in Subsections R313-19-13(2)(b)(ii) through (iv) a person is exempt from these rules to the extent that the person receives, possesses, uses, transfers, owns, or acquires radioactive material in individual quantities which do not exceed the applicable quantity set forth in Section R313-19-71.

(ii) Subsection R313-19-13(2)(b) does not authorize the production, packaging or repackaging of radioactive material for purposes of commercial distribution, or the incorporation of radioactive material into products intended for commercial distribution.

(iii) A person may not, for purposes of commercial distribution, transfer radioactive material in the individual quantities set forth in Section R313-19-71, knowing or having reason to believe that the quantities of radioactive material will be transferred to persons exempt under Subsection R313-19-13(2)(b) or equivalent regulations of a Licensing State, the U.S. Nuclear Regulatory Commission or an Agreement State, except in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission, pursuant to 10 CFR Part 32 or by the Director pursuant to Subsection R313-22-75(2), which license states that the radioactive material may be transferred by the licensee to persons exempt under Subsection R313-19-13(2)(b) or the equivalent regulations of a Licensing State, the U.S. Nuclear Regulatory Commission or an Agreement State.

(iv) A person who possesses radioactive material received or acquired prior to September 25, 1971, under the general license formerly provided in 10 CFR Part 31.4 or equivalent regulations of a State is exempt from the requirements for a license set forth in Rule R313-19 to the extent that the person possesses, uses, transfers or owns radioactive material. This exemption does not apply for diffuse sources of radium-226.

(v) No person may, for purposes of producing an increased radiation level, combine quantities of radioactive material covered by this exemption so that the aggregate quantity exceeds the limits set forth in R313-19-71, except for radioactive material combined within a device placed in use before May 3, 1999, or as otherwise provided by these rules.

(c) Exempt items.

(i) Certain items containing radioactive material. Except for persons who apply radioactive material to, or persons who incorporate radioactive material into the following products, a person is exempt from these rules to the extent that person receives, possesses, uses, transfers, owns or acquires the following products:

(A) Timepieces or hands or dials containing not more than the following specified quantities of radioactive material and not exceeding the following specified levels of radiation:

(I) 25 millicuries (925.0 MBq) of tritium per timepiece;

(II) five millicuries (185.0 MBq) of tritium per hand;

(III) 15 millicuries (555.0 MBq) of tritium per dial. Bezels when used shall be considered as part of the dial;

(IV) 100 microcuries (3.7 MBq) of promethium-147 per watch or 200 microcuries (7.4 MBq) of promethium-147 per any other timepiece;

(V) 20 microcuries (0.74 MBq) of promethium-147 per watch hand or 40 microcuries (1.48 MBq) of promethium-147 per other timepiece hand;

(VI) 60 microcuries (2.22 MBq) of promethium-147 per watch dial or 120 microcuries (4.44 MBq) of promethium-147 per other timepiece dial. Bezels when used shall be considered as part of the dial;

(VII) the radiation dose rate from hands and dials containing promethium-147 will not exceed, when measured through 50 milligrams per square centimeter of absorber:

for wrist watches, 0.1 millirad (1.0 uGy) per hour at ten centimeters from any surface;

for pocket watches, 0.1 millirad (1.0 uGy) per hour at one centimeter from any surface;

for other timepieces, 0.2 millirad (2.0 uGy) per hour at ten centimeters from any surface;

(VIII) one microcurie (37.0 kBq) of radium-226 per timepiece in timepieces manufactured prior to November 30, 2007.

(B)(I) Static elimination devices which contain, as sealed source or sources, radioactive material consisting of a total of not more than 18.5 MBq (500 uCi) of polonium-210 per device.

(II) Ion generating tubes designed for ionization of air that contain, as a sealed source or sources, byproduct material consisting of a total of not more than 18.5 MBq (500 uCi) of polonium-210 per device or of a total of not more than 1.85 GBq (50 mCi) of hydrogen-3 (tritium) per device.

(III) Such devices authorized before October 23, 2012 for use under the general license then provided in 10 CFR 31.3 (January 1, 2012) or equivalent regulations of the Commission or an Agreement State and manufactured, tested, and labeled by the manufacturer in accordance with the specifications contained in a specific license issued by the Commission or Agreement State.

(C) Precision balances containing not more than one millicurie (37.0 MBq) of tritium per balance or not more than 0.5 millicurie (18.5 MBq) of tritium per balance part manufactured before June 9, 2010.

(D) Marine compasses containing not more than 750 millicuries (27.8 GBq) of tritium gas and other marine navigational instruments containing not more than 250 millicuries (9.25 GBq) of tritium gas manufactured before June 9, 2010.

(E) Ionization chamber smoke detectors containing not more than 1 microcurie (37 kBq) of americium-241 per detector in the form of a foil and designed to protect life and property from fires.

(F) Electron tubes, including spark gap tubes, power tubes, gas tubes including glow lamps, receiving tubes, microwave tubes, indicator tubes, pick-up tubes, radiation detection tubes, and other completely sealed tubes that are designed to conduct or control electrical currents; provided that each tube does not contain more than one of the following specified quantities of radioactive material:

(I) 150 millicuries (5.55 GBq) of tritium per microwave receiver protector tube or ten millicuries (370.0 MBq) of tritium per any other electron tube;

(II) one microcurie (37.0 kBq) of cobalt-60;

(III) five microcuries (185.0 kBq) of nickel-63;

(IV) 30 microcuries (1.11 MBq) of krypton-85;

(V) five microcuries (185.0 kBq) of cesium-137;

(VI) 30 microcuries (1.11 MBq) of promethium-147;

(VII) one microcurie (37.0 kBq) of radium-226;

and provided further, that the radiation dose rate from each electron tube containing radioactive material will not exceed one millirad (10.0 uGy) per hour at one centimeter from any surface when measured through seven milligrams per square centimeter of absorber.

(G) Ionizing radiation measuring instruments containing, for purposes of internal calibration or standardization, one or more sources of radioactive material, provided that:

(I) each source contains no more than one exempt quantity set forth in Section R313-19-71; and

(II) each instrument contains no more than ten exempt quantities. For purposes of this requirement, an instrument's source(s) may contain either one type or different types of radionuclides and an individual exempt quantity may be composed of fractional parts of one or more of exempt quantities in Section R313-19-71, provided that the sum of the fractions shall not exceed unity;

(III) for purposes of Subsection R313-19-13(2)(c)(i)(G), 0.05 microcurie (1.85 kBq) of americium-241 is considered an exempt quantity under Section R313-19-71.

(ii) Self-luminous products containing radioactive material.

(A) Except for persons who manufacture, process, produce, or initially transfer for sale or distribution self-luminous products containing tritium, krypton-85, or promethium-147, and except as provided in R313-19-13(2)(c)(ii)(C), any person is exempt from the regulations in R313-15, R313-19, R313-21, R313-22, R313-32, R313-34, R313-36, and R313-38 to the extent that such a person receives, possesses, uses, transfers, owns, or acquires tritium, krypton-85, or promethium-147 in self-luminous products manufactured, processed, produced, or initially transferred in accordance with a specific license issued pursuant to 10 CFR 32.22 (2015), which license authorizes the initial transfer of the product for use.

(B) Any person who desires to manufacture, process, or produce, or initially transfer for sale or distribution self-luminous products containing tritium, krypton-85, or promethium-147 for use under R313-19-13(2)(c)(ii)(A), should apply for a license under 10 CFR 32.22 (2015) and for a certificate of registration in accordance with 10 CFR 32.210 (2015).

(C) The exemption in R313-19-13(2)(c)(ii)(A) does not apply to tritium, krypton-85, or promethium-147 used in products primarily for frivolous purposes or in toys or adornments.

(D) Radium-226. A person is exempt from these rules, to the extent that such person receives, possesses, uses, transfers, or owns articles containing less than 0.1 microcurie (3.7 kBq) of radium-226 which were acquired prior to the effective date of these rules.

(iii) Gas and aerosol detectors containing radioactive material.

(A) Except for persons who manufacture, process, produce, or initially transfer for sale or distribution gas and aerosol detectors containing radioactive material, any person is exempt from the regulations in parts R313-18, R313-15, R313-19, R313-21, R313-22, R313-32, R313-34, R313-36, and R313-38 to the extent that such

person receives, possesses, uses, transfers, owns, or acquires byproduct material in gas and aerosol detectors designed to protect health, safety, or property, and manufactured, processed, produced, or initially transferred in accordance with a specific license issued under 10 CFR 32.26 (2015), which license authorizes the initial transfer of the product for use under this section. This exemption also covers gas and aerosol detectors manufactured or distributed before November 30, 2007, in accordance with a specific license issued by a State under comparable provisions to 10 CFR 32.26 (2015) authorizing distribution to persons exempt from regulatory requirements.

(B) Any person who desires to manufacture, process, or produce gas and aerosol detectors containing byproduct material, or to initially transfer such products for use under paragraph (a) of this section, should apply for a specific license issued by the U.S. Nuclear Regulatory Commission pursuant to 10 CFR Part 32.26 (2015) and for a certificate of registration in accordance with R313-22-210 or equivalent regulations of an Agreement State.

(iv) Capsules containing carbon-14 urea for "in vivo" diagnostic use for humans.

(A) Except as provided in Subsection R313-19-13(2)(c)(iv) (B), any person is exempt from the requirements in Rules R313-19 and R313-32 provided that the person receives, possesses, uses, transfers, owns, or acquires capsules containing 37 kBq (1 uCi) carbon-14 urea (allowing for nominal variation that may occur during the manufacturing process) each, for "in vivo" diagnostic use for humans.

(B) Any person who desires to use the capsules for research involving human subjects shall apply for and receive a specific license pursuant to Rule R313-32.

(C) Nothing in Subsection R313-19-13(2)(c)(iv) relieves persons from complying with applicable United States Food and Drug Administration, other Federal, and State requirements governing receipt, administration, and use of drugs.

(v) Certain industrial devices.

(A) Except for persons who manufacture, process, produce, or initially transfer for sale or distribution industrial devices containing radioactive material designed and manufactured for the purpose of detecting, measuring, gauging or controlling thickness, density, level, interface location, radiation, leakage, or qualitative or quantitative chemical composition, or for producing an ionized atmosphere, any person is exempt from the regulations in parts R313-18, R313-15, R313-18, R313-15, R313-19, R313-21, R313-22, R313-32, R313-34, R313-36, and R313-38 to the extent that such person receives, possesses, uses, transfers, owns, or acquires radioactive material, in these certain detecting, measuring, gauging, or controlling devices and certain devices for producing an ionized atmosphere, and manufactured, processed, produced, or initially transferred in accordance with a specific license issued under 10 CFR 32.30 (2015), which license authorizes the initial transfer of the device for use under this rule. This exemption does not cover sources not incorporated into a device, such as calibration and reference sources.

(B) Any person who desires to manufacture, process, produce, or initially transfer for sale or distribution industrial devices containing byproduct material for use under R313-19-13(2)(c)(v)(A), should apply for a license under 10 CFR 32.30 (2015) and for a certificate of registration in accordance with R313-22-210.

(vi) With respect to Subsections R313-19-13(2)(b)(iii), R313-19-13(2)(c)(i), (iii) and (iv), the authority to transfer possession or control by the manufacturer, processor, or producer of equipment, devices, commodities, or other products containing byproduct material

whose subsequent possession, use, transfer, and disposal by other persons is exempted from regulatory requirements may be obtained only from the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

### **R313-19-50. Reporting Requirements.**

(1) Licensees shall notify the Director as soon as possible but not later than four hours after the discovery of an event that prevents immediate protective actions necessary to avoid exposures to radiation or radioactive materials that could exceed regulatory limits or releases of licensed material that could exceed regulatory limits. Events may include fires, explosions, toxic gas releases, etc.

(2) The following events involving licensed material require notification of the Director by the licensee within 24 hours:

(a) an unplanned contamination event that:

(i) requires access to the contamination area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area;

(ii) involves a quantity of material greater than five times the lowest annual limit on intake specified in Appendix B of 10 CFR 20.1001 through 20.2402 [~~(2010)~~](2017), which is incorporated by reference, for the material; and

(iii) has access to the area restricted for a reason other than to allow radionuclides with a half-life of less than 24 hours to decay prior to decontamination; or

(b) an event in which equipment is disabled or fails to function as designed when:

(i) the equipment is required by rule or license condition to prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident;

(ii) the equipment is required by rule or license condition to be available and operable; and

(iii) no redundant equipment is available and operable to perform the required safety function; or

(c) an event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body; or

(d) an unplanned fire or explosion damaging licensed material or a device, container, or equipment containing licensed material when:

(i) the quantity of material involved is greater than five times the lowest annual limit on intake specified in Appendix B of 10 CFR 20.1001 through 20.2402 [~~(2010)~~](2017), which is incorporated by reference, for the material; and

(ii) the damage affects the integrity of the licensed material or its container.

(3) Preparation and submission of reports. Reports made by licensees in response to the requirements of Section R313-19-50 must be made as follows:

(a) For radioactive materials, other than special nuclear material, licensees shall make reports required by Subsections R313-19-50(1) and (2) by telephone to the Director. To the extent that the information is available at the time of notification, the information provided in these reports must include:

(i) the caller's name and call back telephone number;

(ii) a description of the event, including date and time;

(iii) the exact location of the event;

(iv) the radionuclides, quantities, and chemical and physical form of the licensed material involved; and

(v) available personnel radiation exposure data.

(b) For special nuclear materials, licensees shall make reports required by Subsections R313-19-50(1) and (2) by telephone to the Director. To the extent that the information is available at the time of notification, the information provided in these reports must include:

(i) the caller's name, position title, and call-back telephone number;

(ii) the date, time, and exact location of the event; and

(iii) a description of the event, including:

(A) radiological or chemical hazards involved, including isotopes, quantities, and chemical and physical form of any material released; and

(B) actual or potential health and safety consequences to the workers, the public, and the environment, including relevant chemical and radiation data for actual personnel exposures to radiation or radioactive materials or hazardous chemicals produced from radioactive materials (e.g., level of radiation exposure, concentration of chemicals, and duration of exposure).

(c) Written report for materials other than special nuclear materials. A licensee who makes a report required by Subsections R313-19-50(1) or (2) shall submit a written follow-up report within 30 days of the initial report. Written reports prepared pursuant to other rules may be submitted to fulfill this requirement if the reports contain all of the necessary information and the appropriate distribution is made. These written reports shall be sent to the Director. The report shall include the following:

(i) A description of the event, including the probable cause and the manufacturer and model number, if applicable, of equipment that failed or malfunctioned;

(ii) the exact location of the event;

(iii) the radionuclides, quantities, and chemical and physical form of the licensed material involved;

(iv) date and time of the event;

(v) corrective actions taken or planned and results of evaluations or assessments; and

(vi) the extent of exposure of individuals to radiation or radioactive materials without identification of individuals by name.

(d) Written report for special nuclear material. A licensee who makes a report required by Subsections R313-19-50(1) or (2) shall submit a written follow-up report within 30 days of the initial report. Written reports prepared pursuant to other rules may be submitted to fulfill this requirement if the reports contain all of the necessary information and the appropriate distribution is made. These written reports shall be sent to the Director. The report shall include the following:

(i) the complete applicable information required by Subsection R313-19-50(3)(b);

(ii) the probable cause of the event, including all factors that contributed to the event and the manufacturer and model number (if applicable) of any equipment that failed or malfunctioned; and

(iii) corrective actions taken or planned to prevent occurrence of similar or identical events in the future and the results of any evaluations or assessments.

**KEY: licenses, reciprocity, transportation, exemptions**

**Date of Enactment or Last Substantive Amendment: ~~June 10, 2016~~ 2017**

**Notice of Continuation: July 1, 2016**

**Authorizing, and Implemented or Interpreted Law: 19-3-104; ~~19-6-107~~ 19-6-104**

## Environmental Quality, Waste Management and Radiation Control, Radiation **R313-21** General Licenses

### NOTICE OF PROPOSED RULE

(Amendment)

DAR FILE NO.: 41993

FILED: 08/01/2017

### RULE ANALYSIS

**PURPOSE OF THE RULE OR REASON FOR THE CHANGE:** The proposed changes incorporate corresponding revisions made by the U.S. Nuclear Regulatory Commission (NRC) in a final rule published in the Federal Register on 05/29/2013 (78 FR 32310) under the title of Distribution of Source Material to Exempt Persons and to General Licensees and Revision of General License and Exemptions. As an Agreement State with the NRC for the radioactive materials program in Utah, the proposed changes are made in order to maintain regulatory compatibility with the federal radioactive materials regulations and our agreement state status with the NRC. Changes are proposed in selected sections of Rules R313-12, R313-19, R313-21, and R313-22 in order to incorporate all of the corresponding revisions issued under NRC's final rule promulgated on 05/29/2013. Additional proposed changes not directly associated with NRC's final rule are being made to update noted references and citations. (EDITOR'S NOTE: A proposed amendment to Rule R313-12 is under Filing No. 41991, a proposed amendment to Rule R313-19 is under Filing No. 41992, and a proposed amendment to Rule R313-22 in under Filing No. 41994 in this issue, August 15, 2017, of the Bulletin.)

**SUMMARY OF THE RULE OR CHANGE:** On 07/13/2017, the Waste Management and Radiation Control Board authorized the proposed changes to be published for public review and comment. Proposed changes to Rules R313-12, R313-19, R313-21, and R313-22 reflect those revisions made by the NRC to selected sections of 10 CFR Part 40, as promulgated on 05/29/2013 (78 FR 32310). The majority of the changes are required to retain regulatory compatibility for the radioactive materials program, other proposed changes provide added clarification or correct textual errors. Specifically, incorporating the revisions promulgated by the NRC into the appropriate sections of Rule R313-21 require the initial distribution of source material to exempt persons or to general licensees be explicitly authorized by a specific license and institute new reporting requirements to provide

timely information on the types and quantities of source material distributed for use either under exemption or by general licensees. In addition, the rule modifies the existing possession and use requirements of the general license for small quantities of source material to better align the requirements with current health and safety standards. The regulatory amendments will create a regulatory framework for the initial distribution of source material to inform the Division, in the event of any manufacturer or distributor of source material becomes licensed in Utah, of what types and quantities of products containing source material are distributed for use under the exemptions from licensing and to identify persons using significant quantities of source material under the general license in Section R313-21-21. It will also ensure that general licensees under Section R313-21-21 are informed of applicable regulations before they obtain source material. Also, the proposed rule changes revise, clarify, or delete certain source material exemptions from licensing to make the exemptions more risk informed. The NRC's final rule and the associated proposed rule changes in the Utah radiation control rules also affect the possession and use of source material under a general license or an applicable license exemption. Proposed changes in Section R313-21-21 are being made to be compatible with the corresponding NRC regulations of 10 CFR 40.22 as promulgated on 05/29/2013 (74 FR 32310) regarding the distribution of certain quantities of source material (radioactive material containing uranium and/or thorium). Additionally, other proposed changes set limits to the amount of radioactive source material in certain physical or chemical forms a general licensee can possess, use, or transfer at any one time or receive in a calendar year. A general licensee exceeding these limits will be required to apply for and receive a specific license in place of a general license. The edition date of the reference to 10 CFR 32.71 in Subsection R313-21-22(9)(d)(i) is updated to 2017.

STATUTORY OR CONSTITUTIONAL AUTHORIZATION FOR THIS RULE: Section 19-3-104 and Section 19-6-104

**ANTICIPATED COST OR SAVINGS TO:**

◆ **THE STATE BUDGET:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no state agencies that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, state academic institutions that may possess or use radioactive source material for research or other academic-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. However, additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No.

ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

◆ **LOCAL GOVERNMENTS:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no local governments that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

◆ **SMALL BUSINESSES:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no small business in Utah that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a small business that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

◆ **PERSONS OTHER THAN SMALL BUSINESSES, BUSINESSES, OR LOCAL GOVERNMENTAL ENTITIES:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no other entities in Utah that currently manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a person that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's

regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

**COMPLIANCE COSTS FOR AFFECTED PERSONS:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no entities in Utah that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a business or person that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific license. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

**COMMENTS BY THE DEPARTMENT HEAD ON THE FISCAL IMPACT THE RULE MAY HAVE ON BUSINESSES:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no entities in Utah that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a business or person that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific license. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

THE FULL TEXT OF THIS RULE MAY BE INSPECTED, DURING REGULAR BUSINESS HOURS, AT:  
ENVIRONMENTAL QUALITY  
WASTE MANAGEMENT AND RADIATION

CONTROL, RADIATION  
SECOND FLOOR  
195 N 1950 W  
SALT LAKE CITY, UT 84116-4880  
or at the Office of Administrative Rules.

DIRECT QUESTIONS REGARDING THIS RULE TO:

- ◆ Rusty Lundberg by phone at 801-536-4257, by FAX at 801-536-0222, or by Internet E-mail at [rlundberg@utah.gov](mailto:rlundberg@utah.gov)
- ◆ Thomas Ball by phone at 801-536-0251, or by Internet E-mail at [tball@utah.gov](mailto:tball@utah.gov)

INTERESTED PERSONS MAY PRESENT THEIR VIEWS ON THIS RULE BY SUBMITTING WRITTEN COMMENTS NO LATER THAN AT 5:00 PM ON 09/15/2017

THIS RULE MAY BECOME EFFECTIVE ON: 10/16/2017

AUTHORIZED BY: Scott Anderson, Director

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**R313. Environmental Quality, Waste Management and Radiation Control, Radiation.**

**R313-21. General Licenses.**

**R313-21-21. General Licenses--Source Material.**

(1) A general license is hereby issued authorizing commercial and industrial firms, research, educational and medical institutions, and state and local government agencies to receive, possess, use and transfer uranium and thorium, in their natural isotopic concentrations and in the form of depleted uranium, [not more than 6.82 kilogram (15 lb) of source material at any one time] for research, development, educational, commercial, or operational purposes in the following forms and quantities: [— A person authorized to use or transfer source material, pursuant to this general license, may not receive more than a total of 68.2 kilogram (150 lb) of source material in any one calendar year.]

(a) No more than 1.5 kg (3.3 lb) of uranium and thorium in dispersible forms, for example, gaseous, liquid, powder, etc., at any one time. Any material processed by the general licensee that alters the chemical or physical form of the material containing source material must be accounted for as a dispersible form. A person authorized to possess, use, and transfer source material under Subsection R313-21-21(1) may not receive more than a total of 7 kg (15.4 lb) of uranium and thorium in any one calendar year. A person possessing source material in excess of these limits as of October 16, 2017, may continue to possess up to 7 kg (15.4 lb) of uranium and thorium at any one time for one year beyond this date, or until the Director takes final action on a pending application submitted on or before October 16, 2017, for a specific license for this material; and receive up to 70 kg (154 lb) of uranium or thorium in any one calendar year until December 31, 2018, or until the Director takes final action on a pending application submitted on or before October 16, 2018, for a specific license for this material; and

(b) No more than a total of 7 kg (15.4 lb) of uranium and thorium at any one time. A person authorized to possess, use, and transfer source material under Subsection R313-21-21(1) may not receive more than a total of 70 kg (154 lb) of uranium and thorium in any one calendar year. A person may not alter the chemical or

physical form of the source material possessed under Subsection R313-21-21(1) unless it is accounted for under the limits of Subsection R313-21-21(1)(a); or

(c) No more than 7 kg (15.4 lb) of uranium, removed during the treatment of drinking water, at any one time. A person may not remove more than 70 kg (154 lb) of uranium from drinking water during a calendar year under Subsection R313-21-21(1)(a); or

(d) No more than 7 kg (15.4 lb) of uranium and thorium at laboratories for the purpose of determining the concentration of uranium and thorium contained within the material being analyzed at any one time. A person authorized to possess, use, and transfer source material under Subsection R313-21-21(1) may not receive more than a total of 70 kg (154 lb) of source material in any one calendar year.

(2) Any person[Persons] who receives, possesses, uses, or transfers source material pursuant to the general license issued in Subsection R313-21-21(1); ~~are exempt from the provisions of R313-15 and R313-18, to the extent that such receipt, possession, use or transfer is within the terms of the general license; provided, however, that this exemption shall not be deemed to apply to a person who is also in possession of source material under a specific license issued pursuant to R313-22.]~~

(a) Is prohibited from administering source material, or the radiation therefrom, either externally or internally, to human beings except as may be authorized by the Director in a specific license.

(b) Shall not abandon this source material. Source material may be disposed of as follows:

(i) A cumulative total of 0.5 kg (1.1 lb) of source material in a solid, non-dispersible form may be transferred each calendar year, by a person authorized to receive, possess, use, and transfer source material under this general license to persons receiving the material for permanent disposal. The recipient of source material transferred under the provisions of Subsection R313-21-21(2) is exempt from the requirements to obtain a license under Rule R313-22 to the extent the source material is permanently disposed. This provision does not apply to any person who is in possession of source material under a specific license issued under Rules R313-19, and R313-22; or

(ii) In accordance with Section R313-15-1001.

(c) Is subject to the provisions in 10 CFR 40.2a through 40.4, 10 CFR 40.41(c), 10 CFR 40.46, and 10 CFR 40.61(a) and (b), which are incorporated by reference in Section R313-24-4, Section R313-12-3, Section R313-19-5, Section R313-19-34, Subsection R313-22-34(2), Section R313-19-41, Section R313-19-50, Section R313-15-1111, Sections R313-12-51 through R313-12-53, Section R313-19-61, Rule R313-14, 10 CFR 40.41(d), 10 CFR 40.41(e)(1) and (e)(3), 10 CFR 40.51(b)(6), and 10 CFR 40.56.

(d) Shall respond to written requests from the Director to provide information relating to the general license within 30 calendar days of the date of the request, or other time specified in the request. If the person cannot provide the requested information within the allotted time, the person shall, within that same time period, request a longer period to supply the information by providing the Director a written justification using the method stated in Section R313-12-110.

(e) Shall not export such source material except in accordance with 10 CFR Part 110 (2017).

(3) Any person who receives, possesses, uses, or transfers source material in accordance with Subsection R313-21-21(1) shall

conduct activities so as to minimize contamination of the facility and the environment. When activities involving such source material are permanently ceased at any site, if evidence of significant contamination is identified, the general licensee shall notify the Director using the method stated in Section R313-12-110 about such contamination and may consult with the Director as to the appropriateness of sampling and restoration activities to ensure that any contamination or residual source material remaining at the site where source material was used under this general license is not likely to result in exposures that exceed the limits in Section R313-15-402.

~~[(3) Persons who receive, possess, use, or transfer source material pursuant to the general license in R313-21-21(1) are prohibited from administering source material, or the radiation therefrom, either externally or internally, to human beings except as may be authorized by the Director in a specific license.]~~

(4) Any person who receives, possesses, uses, or transfers source material in accordance with the general license granted in Subsection R313-21-21(1) is exempt from the provisions of Rules R313-15 and R313-18 to the extent that such receipt, possession, use, and transfer are within the terms of this general license, except that such person shall comply with the provisions of Sections R313-15-402 and R313-15-1001 to the extent necessary to meet the provisions of Subsections R313-21-21(2)(b) and R313-21-21(3). However, this exemption does not apply to any person who also holds a specific license issued under Rules R313-19 and R313-22.

(5) No person may initially transfer or distribute source material to persons generally licensed under Subsection R313-21-21(1)(a) or R313-21-21(1)(b), or paragraphs (a)(1) or (a)(2) of 10 CFR 40.22 for a non-Agreement State, or equivalent regulations of an Agreement State, unless authorized by a specific license issued in accordance with Subsection R313-22-54 or 10 CFR 40.54 for a non-Agreement State or equivalent provisions of an Agreement State. This prohibition does not apply to analytical laboratories returning processed samples to the client who initially provided the sample. Initial distribution of source material to persons generally licensed by Subsection R313-21-21(1) before October 16, 2017, without specific authorization may continue for one year beyond this date. Distribution may also be continued until the Director takes final action on a pending application for license or license amendment to specifically authorize distribution submitted on or before October 16, 2018.

~~[(4)](6) A general license is hereby issued authorizing the receipt of title to source material without regard to quantity. This general license does not authorize a person to receive, possess, deliver, use, or transfer source material.~~

~~[(5)](7) Depleted uranium in industrial products and devices.~~

(a) A general license is hereby issued to receive, acquire, possess, use, or transfer, in accordance with the provisions of R313-21-21~~(5)~~(7)(b), (c), (d), and (e), depleted uranium contained in industrial products or devices for the purpose of providing a concentrated mass in a small volume of the product or device.

(b) The general license in R313-21-21~~(5)~~(7)(a) applies only to industrial products or devices which have been manufactured or initially transferred, either in accordance with a specific license issued to the manufacturer of the products or devices pursuant to R313-22-75(11) or in accordance with a specific license issued to the manufacturer by the Nuclear Regulatory Commission, an Agreement

State, or a Licensing State which authorizes manufacture of the products or devices for distribution to persons generally licensed by the Nuclear Regulatory Commission, an Agreement State, or a Licensing State.

(c)(i) Persons who receive, acquire, possess, or use depleted uranium pursuant to the general license established by R313-21-21[(5)](7)(a) shall file form DWMRC-12 "Registration Form-Use of Depleted Uranium Under General License," with the Director. The form shall be submitted within 30 days after the first receipt or acquisition of depleted uranium. The registrant shall furnish on form DWMRC-12 the following information and other information as may be required by that form:

(A) name and address of the registrant;

(B) a statement that the registrant has developed and will maintain procedures designed to establish physical control over the depleted uranium described in R313-21-21[(5)](7)(a) and designed to prevent transfer of such depleted uranium in any form, including metal scrap, to persons not authorized to receive the depleted uranium; and

(C) name and title, address, and telephone number of the individual duly authorized to act for and on behalf of the registrant in supervising the procedures identified in R313-21-21[(5)](7)(c)(i)(B).

(ii) The registrant possessing or using depleted uranium under the general license established by R313-21-21[(5)](7)(a) shall report in writing to the Director any changes in information previously furnished on form DWMRC-12 "Registration Form - Use of Depleted Uranium Under General License." The report shall be submitted within 30 days after the effective date of the change.

(d) A person who receives, acquires, possesses, or uses depleted uranium pursuant to the general license established by R313-21-21(5)(a):

(i) shall not introduce depleted uranium, in any form, into a chemical, physical, or metallurgical treatment or process, except a treatment or process for repair or restoration of any plating or other covering of the depleted uranium;

(ii) shall not abandon depleted uranium;

(iii) shall transfer or dispose of depleted uranium only by transfer in accordance with the provisions of R313-19-41. In the case where the transferee receives the depleted uranium pursuant to the general license established by R313-21-21[(5)](7)(a), the transferor shall furnish the transferee a copy of R313-21 and a copy of form DWMRC-12. In the case where the transferee receives the depleted uranium pursuant to a general license contained in the Nuclear Regulatory Commission's or Agreement State's regulation equivalent to R313-21-21[(5)](7)(a), the transferor shall furnish the transferee a copy of this rule and a copy of form DWMRC-12 accompanied by a note explaining that use of the product or device is regulated by the Nuclear Regulatory Commission or Agreement State under requirements substantially the same as those in R313-21;

(iv) within 30 days of any transfer, shall report in writing to the Director the name and address of the person receiving the depleted uranium pursuant to the transfer;

(v) shall not export depleted uranium except in accordance with a license issued by the Nuclear Regulatory Commission pursuant to 10 CFR Part 110; and

(vi) shall pay annual fees pursuant to R313-70.

(e) Any person receiving, acquiring, possessing, using, or transferring depleted uranium pursuant to the general license established by R313-21-21[(5)](7)(a) is exempt from the requirements

of R313-15 and R313-18 of these rules with respect to the depleted uranium covered by that general license.

### **R313-21-22. General Licenses\*--Radioactive Material Other Than Source Material.**

NOTE: \*Different general licenses are issued in this section, each of which has its own specific conditions and requirements.

(1) RESERVED.

(2) Certain items and self-luminous products containing radium-226.

(a) A general license is hereby issued to a person to acquire, receive, possess, use, or transfer, in accordance with the provisions of Subsections R313-21-22(2)(b), R313-21-22(2)(c), and R313-21-22(2)(d), radium-226 contained in the following products manufactured prior to November 30, 2007.

(i) Antiquities originally intended for use by the general public. For the purposes of Subsection R313-21-22(2)(a), antiquities mean products originally intended for use by the general public and distributed in the late 19th and early 20th centuries, such as radium emanator jars, revigators, radium water jars, radon generators, refrigerator cards, radium bath salts, and healing pads.

(ii) Intact timepieces containing greater than 37 kilobecquerels (1 uCi), nonintact timepieces, and timepiece hands and dials no longer installed in timepieces.

(iii) Luminous items installed in air, marine, or land vehicles.

(iv) All other luminous products provided that no more than 100 items are used or stored at the same location at one time.

(v) Small radium sources containing no more than 37 kilobecquerels (1 uCi) of radium-226. For the purposes of Subsection R313-21-22(2)(a), "small radium sources" means discrete survey instrument check sources, sources contained in radiation measuring instruments, sources used in educational demonstrations such as cloud chambers and spinthariscopes, electron tubes, static eliminators, or as designated by the Director.

(b) Persons who acquire, receive, possess, use, or transfer radioactive material under the general license issued in Subsection R313-21-22(2)(a) are exempt from the provisions of Rules R313-15, R313-18, and Sections R313-12-51 and R313-19-50, to the extent that the receipt, possession, use, or transfers of radioactive material is within the terms of the general license; provided, however, that this exemption shall not be deemed to apply to a person specifically licensed under Rule R313-22.

(c) A person who acquires, receives, possesses, uses, or transfers radioactive material in accordance with the general license in Subsection R313-21-22(2)(a):

(i) Shall notify the Director should there be an indication of possible damage to the product so that it appears it could result in a loss of the radioactive material. A report containing a brief description of the event, and the remedial action taken, must be furnished to the Director within 30 days.

(ii) Shall not abandon products containing radium-226. The product, and radioactive material from the product, may only be disposed of according to Section R313-15-1008 or by transfer to a person authorized by a specific license to receive the radium-226 in the product or as otherwise approved by the Director.

(iii) Shall not export products containing radium-226 except in accordance with 10 CFR Part 110.

(iv) Shall dispose of products containing radium-226 at a disposal facility authorized to dispose of radioactive material in accordance with Federal or State solid or hazardous waste laws, including the Solid Waste Disposal Act, as authorized under the Energy Policy Act of 2005, by transfer to a person authorized to receive radium-226 under Rule R313-22 or equivalent regulations of the U.S. Nuclear Regulatory Commission or an Agreement State or as otherwise approved by the Director.

(v) Shall respond to written requests from the Director to provide information relating to the general license within 30 calendar days of the date of the request, or other time specified in the request. If the general licensee cannot provide the requested information within the allotted time, it shall, within that same time period, request a longer period to supply the information by providing the Director a written justification using the method stated in Section R313-12-110.

(d) The general license in R313-21-22(2)(a) does not authorize the manufacture, assembly, disassembly, repair, or import of products containing radium-226, except that timepieces may be disassembled and repaired.

(3) RESERVED.

(4) Certain detecting, measuring, gauging or controlling devices and certain devices for producing light or an ionized atmosphere.\*

NOTE: \*Persons possessing radioactive material in devices under a general license in R313-21-22(4) before January 15, 1975, may continue to possess, use, or transfer that material in accordance with the labeling requirements of R313-21-22(4) in effect on January 14, 1975.

(a) A general license is hereby issued to commercial and industrial firms and research, educational and medical institutions, individuals in the conduct of their business, and state or local government agencies to own, acquire, receive, possess, use or transfer, in accordance with the provisions of R313-21-22(4)(b), (c) and (d), radioactive material, excluding special nuclear material, contained in devices designed and manufactured for the purpose of detecting, measuring, gauging or controlling thickness, density, level, interface location, radiation, leakage, or qualitative or quantitative chemical composition, or for producing light or an ionized atmosphere.

(b)(i) The general license in R313-21-22(4)(a) applies only to radioactive material contained in devices which have been manufactured or initially transferred and labeled in accordance with the specifications contained in:

(A) a specific license issued by the Director pursuant to R313-22-75(4); or

(B) an equivalent specific license issued by the Nuclear Regulatory Commission or an Agreement State; or

(C) An equivalent specific license issued by a State with provisions comparable to R313-22-75.\*

NOTE: \*Regulations under the Federal Food, Drug, and Cosmetic Act authorizing the use of radioactive control devices in food production require certain additional labeling thereon which is found in 21 CFR 179.21.

(ii) The devices must have been received from one of the specific licensees described in R313-21-22(4)(b)(i) or through a transfer made under R313-21-22(4)(c)(ix).

(c) Any person who owns, acquires, receives, possesses, uses or transfers radioactive material in a device pursuant to the general license in R313-21-22(4)(a):

(i) shall assure that all labels affixed to the device at the time of receipt and bearing a statement that removal of the label is prohibited are maintained thereon and shall comply with all instructions and precautions provided by the labels;

(ii) shall assure that the device is tested for leakage of radioactive material and proper operation of the on-off mechanism and indicator, if any, at no longer than six-month intervals or at other intervals as are specified in the label; however:

(A) Devices containing only krypton need not be tested for leakage of radioactive material, and

(B) Devices containing only tritium or not more than 3.7 megabecquerel (100 uCi) of other beta, gamma, or both, emitting material or 0.37 megabecquerel (10 uCi) of alpha emitting material and devices held in storage in the original shipping container prior to initial installation need not be tested for any purpose;

(iii) shall assure that other testing, installation, servicing, and removal from installation involving the radioactive materials, its shielding or containment, are performed:

(A) in accordance with the instructions provided by the labels; or

(B) by a person holding a specific license pursuant to R313-22 or from the Nuclear Regulatory Commission, an Agreement State, or a Licensing State to perform such activities;

(iv) shall maintain records showing compliance with the requirements of R313-21-22(4)(c)(ii) and (iii). The records shall show the results of tests. The records also shall show the dates of performance of, and the names of persons performing, testing, installation, servicing, and removal from the installation the radioactive material and its shielding or containment. The licensee shall retain these records as follows:

(A) Each record of a test for leakage of radioactive material required by R313-21-22(4)(c)(ii) shall be retained for three years after the next required leak test is performed or until the sealed source is transferred or disposed of;

(B) Each record of a test of the on-off mechanism and indicator required by R313-21-22(4)(c)(ii) shall be retained for three years after the next required test of the on-off mechanism and indicator is performed or until the sealed source is transferred or disposed of;

(C) Each record that is required by R313-21-22(4)(c)(iii) shall be retained for three years from the date of the recorded event or until the device is transferred or disposed of;

(v) shall immediately suspend operation of the device if there is a failure of, or damage to, or any indication of a possible failure of or damage to, the shielding of the radioactive material or the on-off mechanism or indicator, or upon the detection of 185 becquerel (0.005 uCi) or more removable radioactive material. The device may not be operated until it has been repaired by the manufacturer or other person holding a specific license to repair the device that was issued by the Director, the Nuclear Regulatory Commission, an Agreement State, or a Licensing State. The device and any radioactive material from the device may only be disposed of by transfer to a person authorized by a specific license to receive the radioactive material in the device or as otherwise approved by the Director, the Nuclear Regulatory Commission, an Agreement State, or a Licensing State. A report containing a brief description of the event and the remedial action taken; and, in the case of detection of 185 becquerel (0.005 uCi) or more removable radioactive material or failure of or damage to a source likely to result in contamination of the premises or the environs,

a plan for ensuring that the premises and environs are acceptable for unrestricted use, must be furnished to the Director within 30 days. Under these circumstances, the criteria set out in R313-15-402 may be applicable, as determined by the Director on a case-by-case basis;

(vi) shall not abandon the device containing radioactive material;

(vii) shall not export the device containing radioactive materials except in accordance with 10 CFR 110;

(viii)(A) shall transfer or dispose of the device containing radioactive material only by export as provided by R313-21-22(4)(c) (vii), by transfer to another general licensee as authorized in R313-21-22(4)(c)(ix), to a person authorized to receive the device by a specific license issued under R313-22, to an authorized waste collector under R313-25, or equivalent regulations of the Nuclear Regulatory Commission, an Agreement State, or a Licensing State, or as otherwise approved under R313-21-22(4)(c)(viii)(C);

(B) shall furnish a report to the Director within 30 days after transfer of a device to a specific licensee or export. The report must contain:

(I) the identification of the device by manufacturer's or initial transferor's name, model number, and serial number;

(II) the name, address, and license number of the person receiving the device, the license number is not applicable if exported; and

(III) the date of the transfer;

(C) shall obtain written approval from the Director before transferring the device to any other specific licensee not specifically identified in R313-21-22(4)(c)(viii)(A); however, a holder of a specific license may transfer a device for possession and use under its own specific license without prior approval, if the holder:

(I) verifies that the specific license authorizes the possession and use, or applies for and obtains an amendment to the license authorizing the possession and use;

(II) removes, alters, covers, or clearly and unambiguously augments the existing label (otherwise required by R313-21-22(4)(c) (i)) so that the device is labeled in compliance with R313-15-904; however, the manufacturer, model number, and serial number must be retained;

(III) obtains the manufacturer's or initial transferor's information concerning maintenance that would be applicable under the specific license (such as leak testing procedures); and

(IV) reports the transfer under R313-21-22(4)(c)(viii)(B);

(ix) shall transfer the device to another general licensee only if:

(A) the device remains in use at a particular location. In this case, the transferor shall give the transferee a copy of R313-21-22(4), R313-12-51, R313-15-1201, and R313-15-1202, and any safety documents identified in the label of the device. Within 30 days of the transfer, the transferor shall report to the Director:

(I) the manufacturer's or initial transferor's name;

(II) the model number and serial number of the device transferred;

(III) the transferee's name and mailing address for the location of use; and

(IV) the name, title, and phone number of the responsible individual identified by the transferee in accordance with R313-21-22(4)(c)(xii) to have knowledge of and authority to take actions to ensure compliance with the appropriate regulations and requirements; or

(B) the device is held in storage by an intermediate person in the original shipping container at its intended location of use prior to initial use by a general licensee;

(x) shall comply with the provisions of R313-15-1201 and R313-15-1202 for reporting radiation incidents, theft or loss of licensed material, but shall be exempt from the other requirements of R313-15 and R313-18;

(xi) shall respond to written requests from the Director to provide information relating to the general license within 30 calendar days of the date of the request, or other time specified in the request. If the general licensee cannot provide the requested information within the allotted time, it shall, within that same time period, request a longer period to supply the information by submitting a letter to the Director and provide written justification as to why it cannot comply;

(xii) shall appoint an individual responsible for having knowledge of the appropriate regulations and requirements and the authority for taking required actions to comply with appropriate regulations and requirements. The general licensee, through this individual, shall ensure the day-to-day compliance with appropriate regulations and requirements. This appointment does not relieve the general licensee of any of its responsibility in this regard;

(xiii)(A) shall register, in accordance with R313-21-22(4)(c) (xiii)(B) and (C), devices containing at least 370 megabecquerel (ten mCi) of cesium-137, 3.7 megabecquerel (0.1 mCi) of strontium-90, 37 megabecquerel (one mCi) of cobalt-60, 3.7 megabecquerel (0.1 mCi) of radium-226, or 37 megabecquerel (one mCi) of americium-241 or any other transuranic, (elements with atomic number greater than uranium-92), based on the activity indicated on the label. Each address for a location of use, as described under R313-21-22(4)(c) (xiii)(C)(IV) represents a separate general licensee and requires a separate registration and fee;

(B) if in possession of a device meeting the criteria of R313-21-22(4)(c)(xiii)(A), shall register these devices annually with the Director and shall pay the fee required by R313-70. Registration shall include verifying, correcting, or adding, as appropriate, to the information provided in a request for registration received from the Director. The registration information must be submitted to the Director within 30 days of the date of the request for registration or as otherwise indicated in the request. In addition, a general licensee holding devices meeting the criteria of R313-21-22(4)(c)(xiii)(A) is subject to the bankruptcy notification requirement in R313-19-34(5) and (6);

(C) in registering devices, the general licensee shall furnish the following information and any other information specifically requested by the Director:

(I) name and mailing address of the general licensee;

(II) information about each device: the manufacturer or initial transferor, model number, serial number, the radioisotope and activity as indicated on the label;

(III) name, title, and telephone number of the responsible person designated as a representative of the general licensee under R313-21-22(4)(c)(xii);

(IV) address or location at which the device(s) are used, stored, or both. For portable devices, the address of the primary place of storage;

(V) certification by the responsible representative of the general licensee that the information concerning the device(s) has been verified through a physical inventory and checking of label information; and

(VI) certification by the responsible representative of the general licensee that they are aware of the requirements of the general license; and

(D) persons generally licensed by the Nuclear Regulatory Commission, an Agreement State, or Licensing State with respect to devices meeting the criteria in R313-21-22(4)(c)(xiii)(A) are not subject to registration requirements if the devices are used in areas subject to Division jurisdiction for a period less than 180 days in any calendar year. The Director will not request registration information from such licensees;

(xiv) shall report changes to the mailing address for the location of use, including changes in the name of a general licensee, to the Director within 30 days of the effective date of the change. For a portable device, a report of address change is only required for a change in the device's primary place of storage; and

(xv) may not hold devices that are not in use for longer than 2 years. If devices with shutters are not being used, the shutter must be locked in the closed position. The testing required by R313-21-22(4)(c)(ii) need not be performed during the period of storage only. However, when devices are put back into service or transferred to another person, and have not been tested within the required test interval, they must be tested for leakage before use or transfer and the shutter tested before use. Devices kept in standby for future use are excluded from the two-year time limit if the general licensee performs quarterly physical inventories of these devices while they are in standby.

(d) The general license in R313-21-22(4)(a) does not authorize the manufacture or import of devices containing radioactive material.

(e) The general license provided in R313-21-22(4)(a) is subject to the provisions of R313-12-51 through R313-12-53, R313-12-70, R313-14, R313-19-34, R313-19-41, R313-19-61, and R313-19-100.

(5) Luminous safety devices for aircraft.

(a) A general license is hereby issued to own, receive, acquire, possess and use tritium or promethium-147 contained in luminous safety devices for use in aircraft, provided:

(i) each device contains not more than 370.0 gigabecquerel (10 Ci) of tritium or 11.1 gigabecquerel (300 mCi) of promethium-147; and

(ii) each device has been manufactured, assembled or initially transferred in accordance with a specific license issued by the Director, the Nuclear Regulatory Commission or an Agreement State, or each device has been manufactured or assembled in accordance with the specifications contained in a specific license issued by the Director or an Agreement State to the manufacturer or assembler of the device pursuant to licensing requirements equivalent to those in R313-22-75(5).

(b) Persons who own, receive, acquire, possess or use luminous safety devices pursuant to the general license in R313-21-22(5) are exempt from the requirements of R313-15 and R313-18, except that they shall comply with the provisions of R313-15-1201 and R313-15-1202.

(c) This general license does not authorize the manufacture, assembly, repair, or import of luminous safety devices containing tritium or promethium-147.

(d) This general license does not authorize the export of luminous safety devices containing tritium or promethium-147.

(e) This general license does not authorize the ownership, receipt, acquisition, possession or use of promethium-147 contained in instrument dials.

(f) This general license is subject to the provisions of R313-12-51 through R313-12-70, R313-14, R313-19-34, R313-19-41, R313-19-61, and R313-19-100.

(6) Ownership of radioactive material. A general license is hereby issued to own radioactive material without regard to quantity. Notwithstanding any other provisions of R313-21, this general license does not authorize the manufacture, production, transfer, receipt, possession, use, import, or export of radioactive material except as authorized in a specific license.

(7) Calibration and reference sources.

(a) A general license is hereby issued to own, receive, acquire, possess, use and transfer, in the form of calibration or reference sources, americium-241, plutonium or radium-226 in accordance with the provisions of Subsections R313-21-22(7)(b) and (c), to a person who holds a specific license issued by the Director which authorizes that person to receive, possess, use and transfer radioactive material.

(b) The general license in Subsection R313-21-22(7)(a) applies only to calibration or reference sources which have been manufactured or initially transferred in accordance with the specifications contained in a specific license issued by the Nuclear Regulatory Commission pursuant to 10 CFR 32.57 or 10 CFR 70.39 or which have been manufactured in accordance with the specifications contained in a specific license issued to the manufacturer by the Director, or an Agreement State which authorizes manufacture of the sources for distribution to persons generally licensed, or in accordance with a specific license issued by a State with requirements equivalent to 10 CFR 32.57 or 10 CFR 70.39.

(c) The general license provided in Subsection R313-21-22(7)(a) is subject to the provisions of Sections R313-12-51 through R313-12-53, R313-12-70, and Rules R313-14, R313-19-34, R313-19-41, R313-19-61, R313-19-100, R313-15 and R313-18. In addition, persons who own, receive, acquire, possess, use or transfer one or more calibration or reference sources pursuant to the general license in Subsection R313-21-22(7)(a):

(i) shall not possess at any one time, at any one location of storage or use, more than 185.0 kilobecquerel (5 uCi) of americium-241, 185.0 kilobecquerel (5 uCi) of plutonium, or 185.0 kilobecquerel (5 uCi) of radium-226 in such sources;

(ii) shall not receive, possess, use or transfer a source unless the source, or the storage container, bears a label which includes one of the following statements or a substantially similar statement which contains the information called for in the following statement:

The receipt, possession, use and transfer of this source, Model No. ...., Serial No. ...., are subject to a general license and the regulations of the United States Nuclear Regulatory Commission or of a state with which the Commission has entered into an agreement for the exercise of regulatory authority. Do not remove this label.

CAUTION - RADIOACTIVE MATERIAL  
 THIS SOURCE CONTAINS (AMERICIUM-241)  
 (PLUTONIUM)(RADIUM-226)\*  
 DO NOT TOUCH RADIOACTIVE PORTION OF THIS  
 SOURCE.

.....

Typed or printed name of the manufacturer or initial transferor

NOTE: \*Show the name of the appropriate material.

(iii) shall not transfer, abandon, or dispose of a source except by transfer to a person authorized by a license issued by the Director, the Nuclear Regulatory Commission, or an Agreement State to receive the source;

(iv) shall store a source, except when the source is being used, in a closed container adequately designed and constructed to contain americium-241, plutonium, or radium-226 which might otherwise escape during storage; and

(v) shall not use a source for any purpose other than the calibration of radiation detectors or the standardization of other sources.

(d) A general license issued pursuant to Subsection R313-21-22(7)(a) does not authorize the manufacture, import, or export of calibration or reference sources containing americium-241, plutonium, or radium-226.

(8) RESERVED.

(9) General license for use of radioactive material for certain in vitro clinical or laboratory testing.\*

NOTE: \*The New Drug provisions of the Federal Food, Drug and Cosmetic Act also govern the availability and use of any specific diagnostic drug in interstate commerce.

(a) A general license is hereby issued to any physician, veterinarian in the practice of veterinary medicine, clinical laboratory or hospital to receive, acquire, possess, transfer or use, for the following stated tests, in accordance with the provisions of R313-21-22(9) (b), (c), (d), (e), and (f) the following radioactive materials in prepackaged units for use in in-vitro clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to human beings or animals:

(i) iodine-125, in units not exceeding 370.0 kilobecquerel (10 uCi) each;

(ii) iodine-131, in units not exceeding 370.0 kilobecquerel (10 uCi) each;

(iii) carbon-14, in units not exceeding 370.0 kilobecquerel (10 uCi) each;

(iv) hydrogen-3 (tritium), in units not exceeding 1.85 megabecquerel (50 uCi) each;

(v) iron-59, in units not exceeding 740.0 kilobecquerel (20 uCi) each;

(vi) cobalt-57, in units not exceeding 370.0 kilobecquerel (10 uCi) each;

(vii) selenium-75, in units not to exceed 370.0 kilobecquerel (10 uCi) each; or

(viii) mock iodine-125, reference or calibration sources, in units not exceeding 1.85 kilobecquerel (0.05 uCi) of iodine-129 and 185.0 becquerel (0.005 uCi) of americium-241 each.

(b) A person shall not receive, acquire, possess, use or transfer radioactive material pursuant to the general license established by R313-21-22(9)(a) until that person has filed form DWMRC-07, "Registration Form-In Vitro Testing with Radioactive Material Under General License," with the Director and received a Certificate of Registration signed by the Director, or until that person has been authorized pursuant to R313-32 to use radioactive material under the general license in R313-21-22(9). The physician, veterinarian, clinical laboratory or hospital shall furnish on form DWMRC-07 the following information and other information as may be required by that form:

(i) name and address of the physician, veterinarian, clinical laboratory or hospital;

(ii) the location of use; and

(iii) a statement that the physician, veterinarian, clinical laboratory or hospital has appropriate radiation measuring instruments to carry out in vitro clinical or laboratory tests with radioactive material as authorized under the general license in Subsection R313-21-22(9)(a) and that the tests will be performed only by personnel competent in the use of radiation measuring instruments and in the handling of the radioactive material.

(c) A person who receives, acquires, possesses or uses radioactive material pursuant to the general license established by Subsection R313-21-22(9)(a) shall comply with the following:

(i) The general licensee shall not possess at any one time, pursuant to the general license in Subsection R313-21-22(9)(a) at any one location of storage or use, a total amount of iodine-125, iodine-131, selenium-75, iron-59, cobalt-57, or any combination, in excess of 7.4 megabecquerel (200 uCi).

(ii) The general licensee shall store the radioactive material, until used, in the original shipping container or in a container providing equivalent radiation protection.

(iii) The general licensee shall use the radioactive material only for the uses authorized by Subsection R313-21-22(9)(a).

(iv) The general licensee shall not transfer the radioactive material except to a person authorized to receive it pursuant to a license issued by the Director, the Nuclear Regulatory Commission, an Agreement State or Licensing State, nor transfer the radioactive material in a manner other than in the unopened, labeled shipping container as received from the supplier.

(v) The general licensee shall dispose of the Mock Iodine-125 reference or calibration sources described in Subsection R313-21-22(9)(a)(viii) as required by Section R313-15-1001.

(vi) The general licensee shall pay annual fees pursuant to Rule R313-70.

(d) The general licensee shall not receive, acquire, possess, or use radioactive material pursuant to Subsection R313-21-22(9)(a):

(i) Except as prepackaged units which are labeled in accordance with the provision of a specific license issued pursuant to R313-22-75(7) or in accordance with the provisions of a specific license issued by the Nuclear Regulatory Commission, or an Agreement State, or before November 30, 2007, in accordance with the provisions of a specific license issued by a State with comparable provisions to 10 CFR 32.71 ([2010]2017) which authorizes the manufacture and distribution of iodine-125, iodine-131, carbon-14, hydrogen-3(tritium), iron-59, selenium-75, cobalt-57, or Mock Iodine-125 to persons generally licensed under Subsection R313-21-22(9) or its equivalent, and

(ii) Unless the following statement, or a substantially similar statement which contains the information called for in the following statement, appears on a label affixed to each prepackaged unit or appears in a leaflet or brochure which accompanies the package:

"This radioactive material shall be received, acquired, possessed and used only by physicians, veterinarians in the practice of veterinary medicine, clinical laboratories or hospitals and only for in vitro clinical or laboratory tests not involving internal or external administration of the material, or the radiation therefrom, to human beings or animals. Its receipt, acquisition, possession, use and transfer are subject to the regulations and a general license of the United States Nuclear Regulatory Commission or of a state with which the

Commission has entered into an agreement for the exercise of regulatory authority.

.....  
Name of Manufacturer"

(e) The physician, veterinarian, clinical laboratory or hospital possessing or using radioactive material under the general license in Subsection R313-21-22(9)(a) shall report in writing to the Director, changes in the information previously furnished in the "Registration Form-In Vitro Testing with Radioactive Material Under General License", form DWMRC[-]-07. The report shall be furnished within 30 days after the effective date of the change.

(f) Any person using radioactive material pursuant to the general license of Subsection R313-21-22(9)(a) is exempt from the requirements of Rules R313-15 and R313-18 with respect to radioactive material covered by that general license, except that persons using the Mock Iodine-125 described in Subsection R313-21-22(9)(a)(viii) shall comply with the provisions of Sections R313-15-1001, R313-15-1201 and R313-15-1202.

(10) Ice Detection Devices.

(a) A general license is hereby issued to own, receive, acquire, possess, use and transfer strontium-90 contained in ice detection devices, provided each device contains not more than 1.85 megabecquerel (50 uCi) of strontium-90 and each device has been manufactured or initially transferred in accordance with a specific license issued by the Nuclear Regulatory Commission, or each device has been manufactured in accordance with the specifications contained in a specific license issued by the Director, an Agreement State, or a Licensing State to the manufacturer of the device pursuant to licensing requirements equivalent to those in 10 CFR 32.61.

(b) Persons who own, receive, acquire, possess, use or transfer strontium-90 contained in ice detection devices pursuant to the general license in Subsection R313-21-22(10)(a):

(i) shall, upon occurrence of visually observable damage, such as a bend or crack or discoloration from over-heating to the device, discontinue use of the device until it has been inspected, tested for leakage and repaired by a person holding a specific license from the Director, the Nuclear Regulatory Commission, an Agreement State, or a Licensing State to manufacture or service the device; or shall dispose of the device pursuant to the provisions of Section R313-15-1001;

(ii) shall assure that all labels affixed to the device at the time of receipt, and which bear a statement which prohibits removal of the labels, are maintained thereon; and

(iii) are exempt from the requirements of Rules R313-15 and R313-18 except that the persons shall comply with the provisions of Sections R313-15-1001, R313-15-1201 and R313-15-1202.

(c) This general license does not authorize the manufacture, assembly, disassembly, repair, or import of strontium-90 in ice detection devices.

(d) This general license is subject to the provision of Sections R313-12-51 through R313-12-53, R313-12-70, R313-14, R313-19-34, R313-19-41, R313-19-61, and R313-19-100 of these rules.

**KEY: radioactive materials, general licenses, source materials**  
**Date of Enactment or Last Substantive Amendment: [~~August 26, 2015~~2017]**  
**Notice of Continuation: October 4, 2013**

**Authorizing, and Implemented or Interpreted Law: 19-3-104; 19-6-104**

**Environmental Quality, Waste  
Management and Radiation Control,  
Radiation  
R313-22  
Specific Licenses**

**NOTICE OF PROPOSED RULE  
(Amendment)  
DAR FILE NO.: 41994  
FILED: 08/01/2017**

**RULE ANALYSIS**

**PURPOSE OF THE RULE OR REASON FOR THE CHANGE:** The proposed changes incorporate corresponding revisions made by the U.S. Nuclear Regulatory Commission (NRC) in a final rule published in the Federal Register on 05/29/2013 (78 FR 32310) under the title of Distribution of Source Material to Exempt Persons and to General Licensees and Revision of General License and Exemptions. As an Agreement State with the NRC for the radioactive materials program in Utah, the proposed changes are made in order to maintain regulatory compatibility with the federal radioactive materials regulations and our agreement state status with the NRC. Changes are proposed in selected sections of Rules R313-12, R313-19, R313-21, and R313-22 in order to incorporate all of the corresponding revisions issued under NRC's final rule promulgated on 05/29/2013. Additional proposed changes not directly associated with NRC's final rule are being made to update noted references and citations. (EDITOR'S NOTE: A proposed amendment to Rule R313-12 is under Filing No. 41991, a proposed amendment to Rule R313-19 is under Filing No. 41992, and a proposed amendment to Rule R313-21 in under Filing No. 41993 in this issue, August 15, 20017, of the Bulletin.)

**SUMMARY OF THE RULE OR CHANGE:** On 07/13/2017, the Waste Management and Radiation Control Board authorized the proposed changes to be published for public review and comment. Proposed changes to Rules R313-12, R313-19, R313-21, and R313-22 reflect those revisions made by the NRC to selected sections of 10 CFR Part 40, as promulgated on 05/29/2013 (78 FR 32310). The majority of the changes are required to retain regulatory compatibility for the radioactive materials program, other proposed changes provide added clarification or correct textual errors. Specifically, incorporating the revisions promulgated by the NRC into the appropriate sections of Rule R313-22 require the initial distribution of source material to exempt persons or to general licensees be explicitly authorized by a specific license and institute new reporting requirements to provide timely information on the types and quantities of source

material distributed for use either under exemption or by general licensees. In addition, the rule modifies the existing possession and use requirements of the general license for small quantities of source material to better align the requirements with current health and safety standards. The regulatory amendments will create a regulatory framework for the initial distribution of source material to inform the Division, in the event of any manufacturer or distributor of source material becomes licensed in Utah, of what types and quantities of products containing source material are distributed for use under the exemptions from licensing and to identify persons using significant quantities of source material under the general license in Section R313-21-21. It will also ensure that general licensees under Section R313-21-21 are informed of applicable regulations before they obtain source material. Also, the proposed rule changes revise, clarify, or delete certain source material exemptions from licensing to make the exemptions more risk informed. The NRC's final rule and the associated proposed rule changes in the Utah radiation control rules also affect the possession and use of source material under a general license or an applicable license exemption. The edition date of the reference to Appendix E of 10 CFR Part 20 in Section R313-22-4 is updated to 2017. Proposed changes in Section R313-22-33 are being made to be compatible with the corresponding NRC regulations of 10 CFR 40.32 as promulgated on 05/29/2013 (78 FR 32310) regarding the distribution of certain quantities of source material (radioactive material containing uranium and/or thorium). Two new subsections are being added in Sections R313-22-54 and R313-22-55 to be compatible with the corresponding NRC regulations of 10 CFR 40.54 and 10 CFR 40.55, respectively, as promulgated on 05/29/2013 (78 FR 32310) regarding the distribution, possession, use, or transfer of certain quantities of source material. Revised references in Subsection R313-22-75(11) in order to match renumbered paragraphs in Section R313-21-21.

STATUTORY OR CONSTITUTIONAL AUTHORIZATION FOR THIS RULE: Section 19-3-104 and Section 19-6-104

**MATERIALS INCORPORATED BY REFERENCE:**

- ◆ Updates 10 CFR Part 20, Appendix E, published by Government Printing Office, 01/01/2017

**ANTICIPATED COST OR SAVINGS TO:**

◆ **THE STATE BUDGET:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no state agencies that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, state academic institutions that may possess or use radioactive source material for research or other academic-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. However,

additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

◆ **LOCAL GOVERNMENTS:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no local governments that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

◆ **SMALL BUSINESSES:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no small business in Utah that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a small business that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

◆ **PERSONS OTHER THAN SMALL BUSINESSES, BUSINESSES, OR LOCAL GOVERNMENTAL ENTITIES:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no other entities in Utah that currently manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a person that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific licenses. Any costs associated with the specific license application process and subsequent implementation

procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

**COMPLIANCE COSTS FOR AFFECTED PERSONS:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no entities in Utah that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a business or person that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific license. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

**COMMENTS BY THE DEPARTMENT HEAD ON THE FISCAL IMPACT THE RULE MAY HAVE ON BUSINESSES:** The primary focus of the proposed rule changes is directed to manufacturers and distributors of radioactive source material (containing by definition a certain quantity of uranium or thorium). There are no entities in Utah that manufacture or distribute radioactive source material to either entities exempt from radioactive materials licensing requirements or to radioactive materials general licensees. However, a business or person that may possess or use radioactive source material for commercial, operational, research, development, or other business-related purposes beyond the proposed quantity limit may need to apply for and receive a specific license. Any costs associated with the specific license application process and subsequent implementation procedures are unique to each licensing action and are therefore not quantifiable. Additional information regarding a cost-benefit analysis associated with the NRC's final rule issued on 05/29/2013 (74 FR 32310) can be found in NRC's regulatory analysis document for this final rule (ADAMS Accession No. ML13079A302). A copy of this analysis is available from the Division of Waste Management and Radiation Control Web site at <https://deq.utah.gov/Divisions/dwmrc/index.htm>.

THE FULL TEXT OF THIS RULE MAY BE INSPECTED, DURING REGULAR BUSINESS HOURS, AT:  
 ENVIRONMENTAL QUALITY  
 WASTE MANAGEMENT AND RADIATION  
 CONTROL, RADIATION  
 SECOND FLOOR  
 195 N 1950 W  
 SALT LAKE CITY, UT 84116-4880  
 or at the Office of Administrative Rules.

**DIRECT QUESTIONS REGARDING THIS RULE TO:**  
 ♦ Rusty Lundberg by phone at 801-536-4257, by FAX at 801-536-0222, or by Internet E-mail at [rlundberg@utah.gov](mailto:rlundberg@utah.gov)  
 ♦ Thomas Ball by phone at 801-536-0251, or by Internet E-mail at [tball@utah.gov](mailto:tball@utah.gov)

INTERESTED PERSONS MAY PRESENT THEIR VIEWS ON THIS RULE BY SUBMITTING WRITTEN COMMENTS NO LATER THAN AT 5:00 PM ON 09/15/2017

THIS RULE MAY BECOME EFFECTIVE ON: 10/16/2017

AUTHORIZED BY: Scott Anderson, Director

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**R313. Environmental Quality, Waste Management and Radiation Control, Radiation.**

**R313-22. Specific Licenses.**

**R313-22-4. Definitions.**

"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 off-site response organizations to protect persons off-site.

"Nationally tracked source" is a sealed source containing a quantity equal to or greater than Category 1 or Category 2 levels of any radioactive material listed in Appendix E of 10 CFR 20.1001 to 20.2402 (~~[2010]~~2017), which is incorporated by reference. In this context a sealed source is defined as radioactive material that is sealed in a capsule or closely bonded, in a solid form and which is not exempt from regulatory control. It does not mean material encapsulated solely for disposal, or nuclear material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet. Category 1 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 1 threshold. Category 2 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 2 threshold but less than the Category 1 threshold.

"Principal activities" 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.

"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 off-site response organizations to protect persons off-site.

**R313-22-33. General Requirements for the Issuance of Specific Licenses.**

(1) A license application shall be approved if the Director determines that:

(a) the applicant and all personnel who will be handling the radioactive material are qualified by reason of training and experience to use the material in question for the purpose requested in accordance with these rules in a manner as to minimize danger to public health and safety or the environment;

(b) the applicant's proposed equipment, facilities, and procedures are adequate to minimize danger to public health and safety or the environment;

(c) the applicant's facilities are permanently located in Utah, otherwise the applicant shall seek reciprocal recognition as required by Section R313-19-30;

(d) the issuance of the license will not be inimical to the health and safety of the public;

(e) the applicant satisfies applicable special requirements in Sections R313-22-50, R313-22-54, and R313-22-75, and Rules R313-24, R313-25, R313-32, R313-34, R313-36, or R313-38; and

(f) in the case of an application for a license to receive and possess radioactive material for commercial waste disposal by land burial, or for the conduct of other activities which the Director determines will significantly affect the quality of the environment, the Director, before commencement of construction of the plant or facility in which the activity will be conducted, has concluded, after weighing the environmental, economic, technical and other benefits against environmental costs and considering available alternatives, that the action called for is the issuance of the proposed license, with any appropriate conditions to protect environmental values. The Director shall respond to the application within 60 days. Commencement of construction prior to a response and conclusion shall be grounds for denial of a license to receive and possess radioactive material in the plant or facility.

**R313-22-34. Issuance of Specific Licenses.**

(1) Upon a determination that an application meets the requirements of the Act and the rules of the Board, the Director will issue a specific license authorizing the proposed activity in a form and containing conditions and limitations as the Director deems appropriate or necessary.

(a) Specific licenses for a new license application shall have an expiration date five years from the end of the month in which it is issued.

(b) Specific licenses for a renewed license shall expire ten years after the expiration date of the previous version of the license.

(c) Notwithstanding R313-22-34(1)(b), if during the review of the license renewal application, the Director determines issues that need to be reassessed sooner than the ten year renewal interval, the Director may shorten the renewal interval on a case by case basis. Examples of issues that may result in a shortened renewal interval includes new technologies, new company management, poor regulatory compliance, or other situations that would warrant increased attention.

(2) The Director may incorporate in licenses at the time of issuance, or thereafter, additional requirements and conditions with respect to the licensee's receipt, possession, use and transfer of radioactive material subject to Rule R313-22 as the Director deems appropriate or necessary in order to:

(a) minimize danger to public health and safety or the environment;

(b) require reports and the keeping of records, and to provide for inspections of activities under the license as may be appropriate or necessary; and

(c) prevent loss or theft of material subject to Rule R313-22.

**R313-22-54. Requirements for a Specific License to Initially Transfer Source Material for Use Under Section R313-21-21.**

(1) An application for a specific license to initially transfer source material for use under Section R313-21-21, or 10 CFR 40.22 for a non-Agreement State, or equivalent regulations of an Agreement State, will be approved if:

(a) The applicant satisfies the general requirements specified in Section R313-22-33; and

(b) The applicant submits adequate information on, and the Director approves the methods to be used for quality control, labeling, and providing safety instructions to recipients.

**R313-22-55. Conditions of Specific Licenses to Initially Transfer Source Material for Use Under Section R313-21-21.**

(1)(a) Each person licensed under Section R313-22-54 shall label the immediate container of each quantity of source material with the type of source material and quantity of material and the words, "radioactive material."

(b) Each person licensed under Section R313-22-54 shall ensure that the quantities and concentrations of source material are as labeled and indicated in any transfer records.

(c) Each person licensed under Section R313-22-54 shall provide the information specified in Subsections R313-22-55(1)(c)(i) and (c)(ii) to each person to whom source material is transferred for use under Section R313-21-21 or 10 CFR 40.22 for non-Agreement States or equivalent provisions in Agreement State regulations. This information must be transferred before the source material is transferred for the first time in each calendar year to the particular recipient. The required information includes:

(i) A copy of Sections R313-21-21 and R313-19-41, or relevant equivalent regulations of the Agreement State.

(ii) Appropriate radiation safety precautions and instructions relating to handling, use, storage, and disposal of the material.

(d) Each person licensed under Section R313-22-54 shall report transfers as follows:

(i) File a report with the Director. The report shall include the following information:

(A) The name, address, and license number of the person who transferred the source material;

(B) For each general licensee under Section R313-21-21 or 10 CFR 40.22 for non-Agreement States or equivalent Agreement State provisions to whom greater than 50 grams (0.11 pounds) of source material has been transferred in a single calendar quarter, the name and address of the general licensee to whom source material is distributed; a responsible agent, by name or position or both and phone number, of the general licensee to whom the material was sent; and the type, physical form, and quantity of source material transferred; and

(C) The total quantity of each type and physical form of source material transferred in the reporting period to all such generally licensed recipients.

(ii) File a report with:  
(A) Each responsible Agreement State agency that identifies all persons, operating under provisions equivalent to 10 CFR 40.22 (2016), to whom greater than 50 grams (0.11 pounds) of source material has been transferred within a single calendar quarter; or  
(B) The U.S. Nuclear Regulatory Commission for non-Agreement States, that identifies all persons, operating under 10 CFR 40.22 (2016), to whom greater than 50 grams (0.11 pounds) of source material has been transferred within a single calendar quarter.  
(C) The report shall include the following information specific to those transfers made to the Agreement State being reported to:  
(I) The name, address, and license number of the person who transferred the source material; and  
(II) The name and address of the general licensee to whom source material was distributed; a responsible agent, by name and/or position and phone number, of the general licensee to whom the material was sent; and the type, physical form, and quantity of source material transferred.  
(III) The total quantity of each type and physical form of source material transferred in the reporting period to all such generally licensed recipients within the Agreement State or non-Agreement State.  
(iii) Submit each report by January 31 of each year covering all transfers for the previous calendar year. If no transfers were made to persons generally licensed under Section R313-21-21 or 10 CFR 40.22, or equivalent Agreement State provisions during the current period, a report shall be submitted to the Director indicating so. If no transfers have been made to general licensees in a particular Agreement State or non-Agreement State during the reporting period, this information shall be reported to the responsible Agreement State agency or the U.S. Nuclear Regulatory Commission upon request of the agency or Commission.  
(e) Each person licensed under Section R313-22-54 shall maintain all information that supports the reports required by Section R313-22-55 concerning each transfer to a general licensee for a period of one year after the event is included in a report to the Director.

**R313-22-75. Special Requirements for a Specific License to Manufacture, Assemble, Repair, or Distribute Commodities, Products, or Devices Which Contain Radioactive Material.**

(1) Licensing the introduction of radioactive material in exempt concentrations into products or materials, and transfer of ownership or possession of the products and materials.  
 (a) The authority to introduce radioactive material in exempt concentrations into equipment, devices, commodities or other products may be obtained only from the Nuclear Regulatory Commission, Washington, D.C. 20555; and  
 (b) The manufacturer, processor or producer of equipment, devices, commodities or other products containing exempt concentrations of radioactive materials may obtain the authority to transfer possession or control of the equipment, devices, commodities, or other products containing exempt concentrations to persons who are exempt from regulatory requirements only from the Nuclear Regulatory Commission, Washington, D.C. 20555.

(2) Licensing the distribution of radioactive material in exempt quantities. Authority to transfer possession or control by the manufacturer, processor or producer of equipment, devices, commodities or other products containing byproduct material whose subsequent possession, use, transfer, and disposal by other persons who are exempted from regulatory requirements may be obtained only from the Nuclear Regulatory Commission, Washington, D.C. 20555.

(3) Reserved  
 (4) Licensing the manufacture and distribution of devices to persons generally licensed under Subsection R313-21-22(4).

(a) An application for a specific license to manufacture or distribute devices containing radioactive material, excluding special nuclear material, to persons generally licensed under Subsection R313-21-22(4) or equivalent regulations of the Nuclear Regulatory Commission, an Agreement State or a Licensing State will be approved if:

- (i) the applicant satisfies the general requirements of Section R313-22-33;
- (ii) the applicant submits sufficient information relating to the design, manufacture, prototype testing, quality control, labels, proposed uses, installation, servicing, leak testing, operating and safety instructions, and potential hazards of the device to provide reasonable assurance that:

(A) the device can be safely operated by persons not having training in radiological protection,

(B) under ordinary conditions of handling, storage and use of the device, the radioactive material contained in the device will not be released or inadvertently removed from the device, and it is unlikely that a person will receive in one year, a dose in excess of ten percent of the annual limits specified in Subsection R313-15-201(1), and

(C) under accident conditions, such as fire and explosion, associated with handling, storage and use of the device, it is unlikely that a person would receive an external radiation dose or dose commitment in excess of the following organ doses:

TABLE

Whole body; head and trunk; active blood-forming organs; gonads; or lens of eye	150.0 mSv (15 rems)
Hands and forearms; feet and ankles; localized areas of skin averaged over areas no larger than one square centimeter	2.0 Sv (200 rems)
Other organs	500.0 mSv (50 rems); and

(iii) each device bears a durable, legible, clearly visible label or labels approved by the Director, which contain in a clearly identified and separate statement:

(A) instructions and precautions necessary to assure safe installation, operation and servicing of the device; documents such as operating and service manuals may be identified in the label and used to provide this information,

(B) the requirement, or lack of requirement, for leak testing, or for testing an "on-off" mechanism and indicator, including the maximum time interval for testing, and the identification of radioactive material by radionuclide, quantity of radioactivity, and date of determination of the quantity, and

(C) the information called for in one of the following statements, as appropriate, in the same or substantially similar form:

(I) "The receipt, possession, use and transfer of this device, Model No. ...., Serial No. ...., are subject to a general license or the equivalent, and the regulations of the Nuclear Regulatory Commission or a state with which the Nuclear Regulatory Commission has entered into an agreement for the exercise of regulatory authority. This label shall be maintained on the device in a legible condition. Removal of this label is prohibited." The label shall be printed with the words "CAUTION -RADIOACTIVE MATERIAL" and the name of the manufacturer or distributor shall appear on the label. The model, serial number, and name of the manufacturer or distributor may be omitted from this label provided the information is elsewhere specified in labeling affixed to the device.

(II) "The receipt, possession, use and transfer of this device, Model No. ...., Serial No. ...., are subject to a general license or the equivalent, and the regulations of a Licensing State. This label shall be maintained on the device in a legible condition. Removal of this label is prohibited." The label shall be printed with the words "CAUTION - RADIOACTIVE MATERIAL" and the name of the manufacturer or distributor shall appear on the label. The model, serial number, and name of the manufacturer or distributor may be omitted from this label provided the information is elsewhere specified in labeling affixed to the device.

(iv) Each device having a separable source housing that provides the primary shielding for the source also bears, on the source housing, a durable label containing the device model number and serial number, the isotope and quantity, the words, "Caution-Radioactive Material," the radiation symbol described in Section R313-15-901, and the name of the manufacturer or initial distributor.

(v) Each device meeting the criteria of Subsection R313-21-22(4)(c)(xiii)(A), bears a permanent label, for example, embossed, etched, stamped, or engraved, affixed to the source housing if separable, or the device if the source housing is not separable, that includes the words, "Caution-Radioactive Material," and, if practicable, the radiation symbol described in Section R313-15-901.

(vi) The device has been registered in the Sealed Source and Device Registry.

(b) In the event the applicant desires that the device be required to be tested at intervals longer than six months, either for proper operation of the "on-off" mechanism and indicator, if any, or for leakage of radioactive material or for both, the applicant shall include in the application sufficient information to demonstrate that a longer interval is justified by performance characteristics of the device or similar devices and by design features which have a significant bearing on the probability or consequences of leakage of radioactive material from the device or failure of the "on-off" mechanism and indicator. In determining the acceptable interval for the test for leakage of radioactive material, the Director will consider information which includes, but is not limited to:

- (i) primary containment, or source capsule;
- (ii) protection of primary containment;
- (iii) method of sealing containment;
- (iv) containment construction materials;
- (v) form of contained radioactive material;
- (vi) maximum temperature withstood during prototype tests;
- (vii) maximum pressure withstood during prototype tests;

- (viii) maximum quantity of contained radioactive material;
- (ix) radiotoxicity of contained radioactive material; and
- (x) operating experience with identical devices or similarly

designed and constructed devices.

(c) In the event the applicant desires that the general licensee under Subsection R313-21-22(4), or under equivalent regulations of the Nuclear Regulatory Commission, an Agreement State or a Licensing State be authorized to install the device, collect the sample to be analyzed by a specific licensee for leakage of radioactive material, service the device, test the "on-off" mechanism and indicator, or remove the device from installation, the applicant shall include in the application written instructions to be followed by the general licensee, estimated calendar quarter doses associated with this activity or activities, and basis for these estimates. The submitted information shall demonstrate that performance of this activity or activities by an individual untrained in radiological protection, in addition to other handling, storage, and use of devices under the general license, is unlikely to cause that individual to receive a dose in excess of ten percent of the annual limits specified in Subsection R313-15-201(1).

(d)(i) If a device containing radioactive material is to be transferred for use under the general license contained in Subsection R313-21-22(4), each person that is licensed under Subsection R313-22-75(4) shall provide the information specified in Subsections R313-22-75(4)(d)(i)(A) through (E) to each person to whom a device is to be transferred. This information must be provided before the device may be transferred. In the case of a transfer through an intermediate person, the information must also be provided to the intended user prior to initial transfer to the intermediate person. The required information includes:

(A) a copy of the general license contained in Subsection R313-21-22(4); if Subsections R313-21-22(4)(c)(ii) through (iv) or R313-21-22(4)(c)(xiii) do not apply to the particular device, those paragraphs may be omitted;

(B) a copy of Sections R313-12-51, R313-15-1201, and R313-15-1202;

(C) a list of services that can only be performed by a specific licensee;

(D) Information on acceptable disposal options including estimated costs of disposal; and

(E) An indication that the Director's policy is to issue civil penalties for improper disposal.

(ii) If radioactive material is to be transferred in a device for use under an equivalent general license of the Nuclear Regulatory Commission, an Agreement State, or Licensing State, each person that is licensed under Subsection R313-22-75(4) shall provide the information specified in Subsections R313-22-75(4)(d)(ii)(A) through (D) to each person to whom a device is to be transferred. This information must be provided before the device may be transferred. In the case of a transfer through an intermediate person, the information must also be provided to the intended user prior to initial transfer to the intermediate person. The required information includes:

(A) A copy of an Agreement State's or Licensing State's regulations equivalent to Sections R313-12-51, R313-15-1201, R313-15-1202, and Subsection R313-21-22(4) or a copy of 10 CFR 31.5, 10 CFR 31.2, 10 CFR 30.51, 10 CFR 20.2201, and 10 CFR 20.2202. If a copy of the Nuclear Regulatory Commission regulations is provided to a prospective general licensee in lieu of the Agreement State's or Licensing State's regulations, it shall be accompanied by a note

explaining that use of the device is regulated by the Agreement State or Licensing State; if certain paragraphs of the regulations do not apply to the particular device, those paragraphs may be omitted;

(B) A list of services that can only be performed by a specific licensee;

(C) Information on acceptable disposal options including estimated costs of disposal; and

(D) The name or title, address, and phone number of the contact at the Nuclear Regulatory Commission, Agreement State, or Licensing State from which additional information may be obtained.

(iii) An alternative approach to informing customers may be proposed by the licensee for approval by the Director.

(iv) Each device that is transferred after February 19, 2002 must meet the labeling requirements in Subsection R313-22-75(4)(a)(iii).

(v) If a notification of bankruptcy has been made under Section R313-19-34 or the license is to be terminated, each person licensed under Subsection R313-22-75(4) shall provide, upon request, to the Director, the Nuclear Regulatory Commission, or an appropriate Agreement State or Licensing State, records of final disposition required under Subsection R313-22-75(4)(d)(vii)(H).

(vi) Each person licensed under Subsection R313-22-75(4) to initially transfer devices to generally licensed persons shall comply with the requirements of Subsections R313-22-75(4)(d)(vi) and (vii).

(A) The person shall report all transfers of devices to persons for use under the general license under Subsection R313-21-22(4) and all receipts of devices from persons licensed under Subsection R313-21-22(4) to the Director. The report must be submitted on a quarterly basis on Form 653, "Transfers of Industrial Devices Report" as prescribed by the Nuclear Regulatory Commission, or in a clear and legible report containing all of the data required by the form.

(B) The required information for transfers to general licensees includes:

(I) The identity of each general licensee by name and mailing address for the location of use; if there is no mailing address for the location of use, an alternative address for the general licensee shall be submitted along with information on the actual location of use.

(II) The name, title, and phone number of the person identified by the general licensee as having knowledge of and authority to take required actions to ensure compliance with the appropriate regulations and requirements;

(III) The date of transfer;

(IV) The type, model number, and serial number of device transferred; and

(V) The quantity and type of radioactive material contained in the device.

(C) If one or more intermediate persons will temporarily possess the device at the intended place of use before its possession by the user, the report must include the same information for both the intended user and each intermediate person, and clearly designate the intermediate persons.

(D) For devices received from a Subsection R313-21-22(4) general licensee, the report must include the identity of the general licensee by name and address, the type, model number, and serial number of the device received, the date of receipt, and, in the case of devices not initially transferred by the reporting licensee, the name of the manufacturer or initial transferor.

(E) If the licensee makes changes to a device possessed by a Subsection R313-21-22(4) general licensee, such that the label must be changed to update required information, the report must identify the general licensee, the device, and the changes to information on the device label.

(F) The report must cover each calendar quarter, must be filed within 30 days of the end of the calendar quarter, and must clearly indicate the period covered by the report.

(G) The report must clearly identify the specific licensee submitting the report and include the license number of the specific licensee.

(H) If no transfers have been made to or from persons generally licensed under Subsection R313-21-22(4) during the reporting period, the report must so indicate.

(vii) The person shall report all transfers of devices to persons for use under a general license in the Nuclear Regulatory Commission's, an Agreement State's, or Licensing State's regulations that are equivalent to Subsection R313-21-22(4) and all receipts of devices from general licensees in the Nuclear Regulatory Commission's, Agreement State's, or Licensing State's jurisdiction to the Nuclear Regulatory Commission, or to the responsible Agreement State or Licensing State agency. The report must be submitted on Form 653, "Transfers of Industrial Devices Report" as prescribed by the Nuclear Regulatory Commission, or in a clear and legible report containing all of the data required by the form.

(A) The required information for transfers to general licensee includes:

(I) The identity of each general licensee by name and mailing address for the location of use; if there is no mailing address for the location of use, an alternative address for the general licensee shall be submitted along with information on the actual location of use.

(II) The name, title, and phone number of the person identified by the general licensee as having knowledge of and authority to take required actions to ensure compliance with the appropriate regulations and requirements;

(III) The date of transfer;

(IV) The type, model number, and serial number of the device transferred; and

(V) The quantity and type of radioactive material contained in the device.

(B) If one or more intermediate persons will temporarily possess the device at the intended place of use before its possession by the user, the report must include the same information for both the intended user and each intermediate person, and clearly designate the intermediate persons.

(C) For devices received from a general licensee, the report must include the identity of the general licensee by name and address, the type, model number, and serial number of the device received, the date of receipt, and, in the case of devices not initially transferred by the reporting licensee, the name of the manufacturer or initial transferor.

(D) If the licensee makes changes to a device possessed by a general licensee, such that the label must be changed to update required information, the report must identify the general licensee, the device, and the changes to information on the device label.

(E) The report must cover each calendar quarter, must be filed within 30 days of the end of the calendar quarter, and must clearly indicate the period covered by the report.

(F) The report must clearly identify the specific licensee submitting the report and must include the license number of the specific licensee.

(G) If no transfers have been made to or from a Nuclear Regulatory Commission licensee, or to or from a particular Agreement State or Licensing State licensee during the reporting period, this information shall be reported to the Nuclear Regulatory Commission or the responsible Agreement State or Licensing State agency upon request of the agency.

(H) The person shall maintain all information concerning transfers and receipts of devices that supports the reports required by Subsection R313-22-75(4)(d)(vii). Records required by Subsection R313-22-75(4)(d)(vii)(H) must be maintained for a period of three years following the date of the recorded event.

(5) Special requirements for the manufacture, assembly or repair of luminous safety devices for use in aircraft. An application for a specific license to manufacture, assemble or repair luminous safety devices containing tritium or promethium-147 for use in aircraft for distribution to persons generally licensed under Subsection R313-21-22(5) will be approved if:

(a) the applicant satisfies the general requirements of Section R313-22-33; and

(b) the applicant satisfies the requirements of 10 CFR 32.53 through 32.56 (2015) or their equivalent.

(6) Special requirements for license to manufacture or initially transfer calibration sources containing americium-241, plutonium or radium-226 for distribution to persons generally licensed under Subsection R313-21-22(7). An application for a specific license to manufacture calibration and reference sources containing americium-241, plutonium or radium-226 to persons generally licensed under Subsection R313-21-22(7) will be approved if:

(a) the applicant satisfies the general requirements of Section R313-22-33; and

(b) the applicant satisfies the requirements of 10 CFR 32.57 through 32.59, and 10 CFR 70.39 (2015), or their equivalent.

(7) Manufacture and distribution of radioactive material for certain in vitro clinical or laboratory testing under general license. An application for a specific license to manufacture or distribute radioactive material for use under the general license of Subsection R313-21-22(9) will be approved if:

(a) the applicant satisfies the general requirements specified in Section R313-22-33;

(b) the radioactive material is to be prepared for distribution in prepackaged units of:

(i) iodine-125 in units not exceeding 370 kilobecquerel (ten uCi) each;

(ii) iodine-131 in units not exceeding 370 kilobecquerel (ten uCi) each;

(iii) carbon-14 in units not exceeding 370 kilobecquerel (ten uCi) each;

(iv) hydrogen-3 (tritium) in units not exceeding 1.85 megabecquerel (50 uCi) each;

(v) iron-59 in units not exceeding 740.0 kilobecquerel (20 uCi) each;

(vi) cobalt-57 in units not exceeding 370 kilobecquerel (ten uCi) each;

(vii) selenium-75 in units not exceeding 370 kilobecquerel (ten uCi) each; or

(viii) mock iodine-125 in units not exceeding 1.85 kilobecquerel (0.05 uCi) of iodine-129 and 1.85 kilobecquerel (0.05 uCi) of americium-241 each;

(c) prepackaged units bear a durable, clearly visible label:

(i) identifying the radioactive contents as to chemical form and radionuclide, and indicating that the amount of radioactivity does not exceed 370 kilobecquerel (ten uCi) of iodine-125, iodine-131, carbon-14, cobalt-57, or selenium-75; 1.85 megabecquerel (50 uCi) of hydrogen-3 (tritium); 740.0 kilobecquerel (20 uCi) of iron-59; or Mock Iodine-125 in units not exceeding 1.85 kilobecquerel (0.05 uCi) of iodine-129 and 1.85 kilobecquerel (0.05 uCi) of americium-241 each; and

(ii) displaying the radiation caution symbol described in Section R313-15-901 and the words, "CAUTION, RADIOACTIVE MATERIAL", and "Not for Internal or External Use in Humans or Animals";

(d) one of the following statements, as appropriate, or a substantially similar statement which contains the information called for in one of the following statements, appears on a label affixed to each prepackaged unit or appears in a leaflet or brochure which accompanies the package:

(i) "This radioactive material shall be received, acquired, possessed and used only by physicians, veterinarians, clinical laboratories or hospitals and only for in vitro clinical or laboratory tests not involving internal or external administration of the material, or the radiation therefrom, to human beings or animals. Its receipt, acquisition, possession, use and transfer are subject to the regulations and a general license of the Nuclear Regulatory Commission or of a state with which the Nuclear Regulatory Commission has entered into an agreement for the exercise of regulatory authority.

.....  
Name of Manufacturer"

(ii) "This radioactive material shall be received, acquired, possessed and used only by physicians, veterinarians, clinical laboratories or hospitals and only for in vitro clinical or laboratory tests not involving internal or external administration of the material, or the radiation therefrom, to human beings or animals. Its receipt, acquisition, possession, use and transfer are subject to the regulations and a general license of a Licensing State.

.....  
Name of Manufacturer"

(e) the label affixed to the unit, or the leaflet or brochure which accompanies the package, contains adequate information as to the precautions to be observed in handling and storing radioactive material. In the case of the Mock Iodine-125 reference or calibration source, the information accompanying the source shall also contain directions to the licensee regarding the waste disposal requirements set out in Section R313-15-1001.

(8) Licensing the manufacture and distribution of ice detection devices. An application for a specific license to manufacture and distribute ice detection devices to persons generally licensed under Subsection R313-21-22(10) will be approved if:

(a) the applicant satisfies the general requirements of Section R313-22-33; and

(b) the criteria of 10 CFR 32.61, 32.62, 2015 ed. are met.

(9) Manufacture, preparation, or transfer for commercial distribution of radioactive drugs containing radioactive material for medical use under R313-32.

(a) An application for a specific license to manufacture and distribute radiopharmaceuticals containing radioactive material for use by persons licensed pursuant to Rule R313-32 will be approved if:

(i) the applicant satisfies the general requirements specified in Section R313-22-33;

(ii) the applicant submits evidence that the applicant is at least one of the following:

(A) registered with the U.S. Food and Drug Administration (FDA) as the owner or operator of a drug establishment that engages in the manufacture, preparation, propagation, compounding, or processing of a drug under 21 CFR 207.20(a);

(B) registered or licensed with a state agency as a drug manufacturer;

(C) licensed as a pharmacy by a State Board of Pharmacy;

(D) operating as a nuclear pharmacy within a medical institution; or

(E) registered with a State Agency as a Positron Emission Tomography (PET) drug production facility.

(iii) the applicant submits information on the radionuclide; the chemical and physical form; the maximum activity per vial, syringe, generator, or other container of the radioactive drug; and the shielding provided by the packaging to show it is appropriate for the safe handling and storage of the radioactive drugs by medical use licensees; and

(iv) the applicant satisfies the following labeling requirements:

(A) A label is affixed to each transport radiation shield, whether it is constructed of lead, glass, plastic, or other material, of a radioactive drug to be transferred for commercial distribution. The label must include the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL" or "DANGER, RADIOACTIVE MATERIAL"; the name of the radioactive drug or its abbreviation; and the quantity of radioactivity at a specified date and time. For radioactive drugs with a half life greater than 100 days, the time may be omitted.

(B) A label is affixed to each syringe, vial, or other container used to hold a radioactive drug to be transferred for commercial distribution. The label must include the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL" or "DANGER, RADIOACTIVE MATERIAL" and an identifier that ensures that the syringe, vial, or other container can be correlated with the information on the transport radiation shield label.

(b) A licensee described by Subsections R313-22-75(9)(a)(ii)(C) or (D):

(i) May prepare radioactive drugs for medical use, as defined in Rule R313-32 (incorporating 10 CFR 35.2 by reference), provided that the radioactive drug is prepared by either an authorized nuclear pharmacist, as specified in Subsections R313-22-75(9)(b)(ii) and (iv), or an individual under the supervision of an authorized nuclear pharmacist as specified in Rule R313-32 (incorporating 10 CFR 35.27 by reference).

(ii) May allow a pharmacist to work as an authorized nuclear pharmacist if:

(A) this individual qualifies as an authorized nuclear pharmacist as defined in Rule R313-32 (incorporating 10 CFR 35.2 by reference);

(B) this individual meets the requirements specified in Rule R313-32 (incorporating 10 CFR 35.55(b) and 10 CFR 35.59 by

reference) and the licensee has received an approved license amendment identifying this individual as an authorized nuclear pharmacist; or

(C) this individual is designated as an authorized nuclear pharmacist in accordance with Subsection R313-22-75(9)(b)(iv).

(iii) The actions authorized in Subsections R313-22-75(9)(b)(i) and (ii) are permitted in spite of more restrictive language in license conditions.

(iv) May designate a pharmacist, as defined in Rule R313-32 (incorporating 10 CFR 35.2 by reference), as an authorized nuclear pharmacist if:

(A) The individual was a nuclear pharmacist preparing only radioactive drugs containing accelerator produced radioactive material, and

(B) The individual practiced at a pharmacy at a Government agency or Federally recognized Indian Tribe before November 30, 2007, or at all other pharmacies before August 8, 2009, or an earlier date as noticed by the NRC.

(v) Shall provide to the Director:

(A) a copy of each individual's certification by a specialty board whose certification process has been recognized by the Nuclear Regulatory Commission or Agreement State as specified in Rule R313-32 (incorporating 10 CFR 35.55(a) by reference) with the written attestation signed by a preceptor as required by Rule R313-32 (incorporating 10 CFR 35.55(b)(2) by reference); or

(B) the Nuclear Regulatory Commission or Agreement State license; or

(C) the permit issued by a licensee or Commission master materials permittee of broad scope or the authorization from a commercial nuclear pharmacy authorized to list its own authorized nuclear pharmacist; or

(D) the permit issued by a U.S. Nuclear Commission master materials licensee; or

(E) documentation that only accelerator produced radioactive materials were used in the practice of nuclear pharmacy at a Government agency or Federally recognized Indian Tribe before November 30, 2007 or at all other locations of use before August 8, 2009, or an earlier date as noticed by the NRC; and

(F) a copy of the state pharmacy licensure or registration, no later than 30 days after the date that the licensee allows, pursuant to Subsections R313-22-75(9)(b)(ii)(A) and R313-22-75(9)(b)(ii)(C), the individual to work as an authorized nuclear pharmacist.

(c) A licensee shall possess and use instrumentation to measure the radioactivity of radioactive drugs. The licensee shall have procedures for use of the instrumentation. The licensee shall measure, by direct measurement or by combination of measurements and calculations, the amount of radioactivity in dosages of alpha-, beta-, or photon-emitting radioactive drugs prior to transfer for commercial distribution. In addition, the licensee shall:

(i) perform tests before initial use, periodically, and following repair, on each instrument for accuracy, linearity, and geometry dependence, as appropriate for the use of the instrument; and make adjustments when necessary; and

(ii) check each instrument for constancy and proper operation at the beginning of each day of use.

(d) Nothing in Subsection R313-22-75(9) relieves the licensee from complying with applicable FDA, or Federal, and State requirements governing radioactive drugs.

(10) Manufacture and distribution of sources or devices containing radioactive material for medical use. An application for a specific license to manufacture and distribute sources and devices containing radioactive material to persons licensed under Rule R313-32 for use as a calibration, transmission, or reference source or for the uses listed in Rule R313-32 (incorporating 10 CFR 35.400, 10 CFR 35.500, 10 CFR 35.600, and 35.1000 by reference) will be approved if:

(a) the applicant satisfies the general requirements in Section R313-22-33;

(b) the applicant submits sufficient information regarding each type of source or device pertinent to an evaluation of its radiation safety, including:

(i) the radioactive material contained, its chemical and physical form and amount,

(ii) details of design and construction of the source or device,

(iii) procedures for, and results of, prototype tests to demonstrate that the source or device will maintain its integrity under stresses likely to be encountered in normal use and accidents,

(iv) for devices containing radioactive material, the radiation profile of a prototype device,

(v) details of quality control procedures to assure that production sources and devices meet the standards of the design and prototype tests,

(vi) procedures and standards for calibrating sources and devices,

(vii) legend and methods for labeling sources and devices as to their radioactive content, and

(viii) instructions for handling and storing the source or device from the radiation safety standpoint, these instructions are to be included on a durable label attached to the source or device or attached to a permanent storage container for the source or device; provided that instructions which are too lengthy for a label may be summarized on the label and printed in detail on a brochure which is referenced on the label;

(c) the label affixed to the source or device, or to the permanent storage container for the source or device, contains information on the radionuclide, quantity and date of assay, and a statement that the source or device is licensed by the Director for distribution to persons licensed pursuant to Rule R313-32 (incorporating 10 CFR 35.18, 10 CFR 35.400, 10 CFR 35.500, and 10 CFR 35.600 by reference) or under equivalent regulations of the Nuclear Regulatory Commission, an Agreement State or a Licensing State; provided that labeling for sources which do not require long term storage may be on a leaflet or brochure which accompanies the source;

(d) the source or device has been registered in the Sealed Source and Device Registry.

(e) in the event the applicant desires that the source or device be required to be tested for leakage of radioactive material at intervals longer than six months, the applicant shall include in the application sufficient information to demonstrate that a longer interval is justified by performance characteristics of the source or device or similar sources or devices and by design features that have a significant bearing on the probability or consequences of leakage of radioactive material from the source; and

(f) in determining the acceptable interval for test of leakage of radioactive material, the Director shall consider information that includes, but is not limited to:

(i) primary containment or source capsule,

(ii) protection of primary containment,

(iii) method of sealing containment,

(iv) containment construction materials,

(v) form of contained radioactive material,

(vi) maximum temperature withstood during prototype tests,

(vii) maximum pressure withstood during prototype tests,

(viii) maximum quantity of contained radioactive material,

(ix) radiotoxicity of contained radioactive material, and

(x) operating experience with identical sources or devices or similarly designed and constructed sources or devices.

(11) Requirements for license to manufacture and distribute industrial products containing depleted uranium for mass-volume applications.

(a) An application for a specific license to manufacture industrial products and devices containing depleted uranium for use pursuant to Subsection R313-21-21[(S)](7) or equivalent regulations of the Nuclear Regulatory Commission or an Agreement State will be approved if:

(i) the applicant satisfies the general requirements specified in Section R313-22-33;

(ii) the applicant submits sufficient information relating to the design, manufacture, prototype testing, quality control procedures, labeling or marking, proposed uses and potential hazards of the industrial product or device to provide reasonable assurance that possession, use or transfer of the depleted uranium in the product or device is not likely to cause an individual to receive a radiation dose in excess of ten percent of the annual limits specified in Subsection R313-15-201(1); and

(iii) the applicant submits sufficient information regarding the industrial product or device and the presence of depleted uranium for a mass-volume application in the product or device to provide reasonable assurance that unique benefits will accrue to the public because of the usefulness of the product or device.

(b) In the case of an industrial product or device whose unique benefits are questionable, the Director will approve an application for a specific license under Subsection R313-22-75(11) only if the product or device is found to combine a high degree of utility and low probability of uncontrolled disposal and dispersal of significant quantities of depleted uranium into the environment.

(c) The Director may deny an application for a specific license under Subsection R313-22-75(11) if the end use of the industrial product or device cannot be reasonably foreseen.

(d) Persons licensed pursuant to Subsection R313-22-75(11) (a) shall:

(i) maintain the level of quality control required by the license in the manufacture of the industrial product or device, and in the installation of the depleted uranium into the product or device;

(ii) label or mark each unit to:

(A) identify the manufacturer of the product or device and the number of the license under which the product or device was manufactured, the fact that the product or device contains depleted uranium, and the quantity of depleted uranium in each product or device; and

(B) state that the receipt, possession, use and transfer of the product or device are subject to a general license or the equivalent and the regulations of the Nuclear Regulatory Commission or an Agreement State;

(iii) assure that the uranium before being installed in each product or device has been impressed with the following legend clearly legible through a plating or other covering: "Depleted Uranium";

(iv) furnish to each person to whom depleted uranium in a product or device is transferred for use pursuant to the general license contained in Subsection R313-21-21(5) or its equivalent:

(A) a copy of the general license contained in Subsection R313-21-21[(5)](7) and a copy of form DWMRC-12; or

(B) a copy of the general license contained in the Nuclear Regulatory Commission's or Agreement State's regulation equivalent to Subsection R313-21-21[(5)](7) and a copy of the Nuclear Regulatory Commission's or Agreement State's certificate, or alternatively, furnish a copy of the general license contained in Subsection R313-21-21[(5)](7) and a copy of form DWMRC-12 with a note explaining that use of the product or device is regulated by the Nuclear Regulatory Commission or an Agreement State under requirements substantially the same as those in Subsection R313-21-21[(5)](7);

(v) report to the Director all transfers of industrial products or devices to persons for use under the general license in Subsection R313-21-21[(5)](7). The report shall identify each general licensee by name and address, an individual by name or position who may constitute a point of contact between the Director and the general licensee, the type and model number of device transferred, and the quantity of depleted uranium contained in the product or device. The report shall be submitted within thirty days after the end of the calendar quarter in which the product or device is transferred to the generally licensed person. If no transfers have been made to persons generally licensed under Subsection R313-21-21[(5)](7) during the reporting period, the report shall so indicate;

(vi) provide certain other reports as follows:

(A) report to the Nuclear Regulatory Commission all transfers of industrial products or devices to persons for use under the Nuclear Regulatory Commission general license in 10 CFR 40.25 (2010);

(B) report to the responsible state agency all transfers of devices manufactured and distributed pursuant to Subsection R313-22-75(11) for use under a general license in that state's regulations equivalent to Subsection R313-21-21[(5)](7),

(C) reports shall identify each general licensee by name and address, an individual by name or position who may constitute a point of contact between the agency and the general licensee, the type and model number of the device transferred, and the quantity of depleted uranium contained in the product or device. The report shall be submitted within thirty days after the end of each calendar quarter in which a product or device is transferred to the generally licensed person,

(D) if no transfers have been made to Nuclear Regulatory Commission licensees during the reporting period, this information shall be reported to the Nuclear Regulatory Commission, and

(E) if no transfers have been made to general licensees within a particular Agreement State during the reporting period, this information shall be reported to the responsible Agreement State agency upon the request of that agency; and

(vii) records shall be kept showing the name, address and point of contact for each general licensee to whom the person transfers depleted uranium in industrial products or devices for use pursuant to the general license provided in Subsection R313-21-21[(5)](7) or equivalent regulations of the Nuclear Regulatory Commission or an

Agreement State. The records shall be maintained for a period of two years and shall show the date of each transfer, the quantity of depleted uranium in the product or device transferred, and compliance with the report requirements of Subsection R313-22-75(11).

**KEY: specific licenses, decommissioning, broad scope, radioactive materials**

**Date of Enactment or Last Substantive Amendment: ~~June 10, 2016~~ 2017**

**Notice of Continuation: July 1, 2016**

**Authorizing, and Implemented or Interpreted Law: 19-3-104; ~~19-6-107~~ 19-6-104**

**WASTE MANAGEMENT AND RADIATION CONTROL BOARD**  
**Executive Summary**  
**Public Comment - Proposed Rule Changes**  
**UAC R313-25, License Requirements for Land Disposal of Radioactive Waste**  
October 12, 2017

<p><b>What is the issue before the Board?</b></p>	<p>Approval from the Board to proceed with formal rulemaking and public comment by filing with the Office of Administrative Rules and publishing in the <i>Utah State Bulletin</i> proposed changes to UAC R313-25 that incorporate rule changes required by §19-3-104, as amended by S.B. 173 (2015 Gen. Session) and S.B. 79 (2017 Gen. Session), regarding (i) financial assurance for the closure and post closure care of a low-level radioactive waste disposal facility; and (ii) modifications to facility definitions.</p>
<p><b>What is the historical background or context for this issue?</b></p>	<p>During the 2015 General Session, the Legislature passed S.B. 173 that affected portions of UAC R313-25. However, rulemaking was deferred because the Nuclear Regulatory Commission (NRC) determined that certain provisions of S.B. 173 were incompatible with federal law. These incompatibility issues were not finally resolved until 2017.</p> <p>During the 2017 General Session, the Legislature passed and the governor signed S.B. 79 that requires the Board to promulgate rules regarding financial assurance requirements for the closure and post closure care of a low-level radioactive waste disposal facility. S.B. 79 also modified certain facility definitions, triggering the need for conforming amendments in the rules.</p> <p>Although financial assurance requirements have existed in R313-25 for several years, the proposed changes are being made in order to meet the prescribed rulemaking direction found in S.B. 79 and to provide the tools and flexibility the Director believes are necessary to implement S.B. 79.</p> <p>While the proposed rule changes apply to any low-level radioactive waste disposal facility, currently there is only one facility to which the rule and the proposed changes apply.</p> <p>The proposed changes to the rule were provided to <i>EnergySolutions</i> as part of the scoping process. Based on comments received, several changes were made and are reflected in this draft.</p> <p>Utah’s administrative rulemaking act requires the Board to initiate rulemaking by filing the proposed rule changes with the Office of Administrative Rules (OAR) within 180 days from the effective date of S.B. 79. S.B. 79 was made effective on May 9, 2017; therefore, the proposed changes must be filed with OAR by November 5, 2017.</p> <p>The proposed changes to UAC R313-25 follow this Executive Summary.</p>

<p><b>What is the governing statutory or regulatory citation?</b></p>	<p>Utah Code , §§ 19-3-104(4) and 19-6-104</p> <p>The proposed rule changes also meet existing DEQ and state rulemaking requirements.</p>
<p><b>Is Board action required?</b></p>	<p>Yes. Board approval is necessary to begin the formal rulemaking process by filing the appropriate documents with the Office of Administrative Rules for publishing the proposed rule changes in the <i>Utah State Bulletin</i> and conducting a public comment period.</p>
<p><b>What is the Division Director’s recommendation?</b></p>	<p>The Director recommends the Board approve proceeding with formal rulemaking and public comment by publishing in the <i>Utah State Bulletin</i> the proposed changes to UAC R313-25 to incorporate the rule changes required by S.B. 79, 2017 General Session, regarding financial assurance for the closure and post closure care of a low-level radioactive waste disposal facility and regarding conforming amendments triggered by statutory changes to “facility” definitions.</p>
<p><b>Where can more information be obtained?</b></p>	<p>Please contact Don Verbica at (801) 536-0206 or <a href="mailto:dverbica@utah.gov">dverbica@utah.gov</a>, Rusty Lundberg at (801) 536-4257 or <a href="mailto:rlundberg@utah.gov">rlundberg@utah.gov</a>, Bret Randall, Assistant Attorney General at (801) 536-0284 or <a href="mailto:bfrandall@agutah.gov">bfrandall@agutah.gov</a>.</p>

State of Utah  
Administrative Rule Analysis

**NOTICE OF PROPOSED RULE**

- \* The agency identified below in box 1 provides notice of proposed rule change pursuant to Utah Code Section 63G-3-301.
- \* Please address questions regarding information on this notice to the agency.
- \* The full text of all rule filings is published in the Utah State Bulletin unless excluded because of space constraints.
- \* The full text of all rule filings may also be inspected at the Division of Administrative Rules.

DAR file no:		Date filed:	
State Admin Rule Filing Id:		Time filed:	
	<b>Agency No.</b>	<b>Rule No.</b>	<b>Section No.</b>
<b>Utah Admin. Code Ref (R no.):</b>	<b>R</b> 313	- 25	-
<b>Changed to Admin. Code Ref. (R no.):</b>	<b>R</b>	-	-

<b>1. Agency:</b>	Waste Management and Radiation Control		
<b>Room no.:</b>	Second Floor		
<b>Building:</b>	MASOB		
<b>Street address 1:</b>	195 North 1950 West		
<b>Street address 2:</b>			
<b>City, state, zip:</b>	Salt Lake City, UT 84116		
<b>Mailing address 1:</b>	PO Box 144880		
<b>Mailing address 2:</b>			
<b>City, state, zip:</b>	Salt Lake City, UT 84114-4880		
<b>Contact person(s):</b>			
<b>Name:</b>	<b>Phone:</b>	<b>Fax:</b>	<b>E-mail:</b>
Rusty Lundberg	801-536-4257	801-536-0222	<a href="mailto:rlundberg@utah.gov">rlundberg@utah.gov</a>
Tom Ball	801-536-0251	801-536-0222	<a href="mailto:tball@utah.gov">tball@utah.gov</a>

(Interested persons may inspect this filing at the above address or at the Division of Administrative Rules during business hours)

<b>2. Title of rule or section (catchline):</b>	License Requirements for Land Disposal of Radioactive Waste – General Provisions
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<b>3. Type of notice:</b>	New ___; Amendment <u>X</u> ; Repeal ___; Repeal and Reenact ___
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**4. Purpose of the rule or reason for the change:**  
 During the 2015 General Session, the Legislature passed S.B. 173 that affected portions of UAC R313-25. However, rulemaking was deferred because the Nuclear Regulatory Commission (NRC) determined that certain provisions of S.B. 173 were incompatible with federal law. These incompatibility issues were not finally resolved until 2017. During the 2017 General Session, the Legislature passed S.B. 79, Waste Management Amendments, which requires the Waste Management and Radiation Control Board to (i) modify financial assurance requirements for the closure and post-closure care of a radioactive waste disposal facility; and (ii) to make conforming and clarifying amendments as to “facility” definitions adopted in S.B. 79.

<b>5.</b>	<p><b>This change is a response to comments from the Administrative Rules Review Committee.</b></p> <p>No <input checked="" type="checkbox"/> ; Yes <input type="checkbox"/></p>
<b>6.</b>	<p><b>Summary of the rule or change:</b></p> <p>During the 2015 General Session, the Legislature passed S.B. 173 that affected portions of UAC R313-25. However, rulemaking was deferred because the Nuclear Regulatory Commission (NRC) determined that certain provisions of S.B. 173 were incompatible with federal law. These incompatibility issues were not finally resolved until 2017. During the 2017 General Session, the Legislature passed and the governor signed S.B. 79 that requires the Board to promulgate rules regarding financial assurance requirements for the closure and post closure care of a low-level radioactive waste disposal facility. S.B. 79 also modified certain facility definitions, triggering the need for conforming amendments in the rules. The current changes reflect both S.B. 173 and S.B. 79.</p> <p>Although financial assurance requirements have existed in UAC R313-25 for several years, the proposed changes are being made in order to meet the prescribed rulemaking direction found in S.B. 79 and to provide the tools and flexibility the Director believes are necessary to implement S.B. 79. More specifically, S.B. 79 allows radioactive waste licensees the opportunity to rely on either (i) RS Means or (ii) a “competitive site-specific estimate” as the basis for calculating financial surety. While RS Means represents a national average of heavy civil construction costs, S.B. 79 did not provide a definition for “competitive site-specific estimate.” Based on the legislative history of S.B. 79, it was apparent to the Director that this undefined term referred to local market costs. Based on the Utah Supreme Court case, <u>Associated General Contractors v. Board of Oil, Gas and Mining</u>, 2001 UT 112, 38 P.3d 291, the Director in this rulemaking proposes to (i) define this term; (ii) provide the Division with access to local market expertise from heavy civil contractors or cost estimators who are familiar with local market construction costs in order to review and validate the information submitted by a licensee; and (iii) provide that the licensee fund such review costs.</p> <p>The proposed changes to UAC R313-25-31 incorporate the mandatory new rule text from S.B. 79. In addition a new section, UAC R313-25-31.5, is being added to include the changes summarized above.</p>
<b>7.</b>	<p><b>Aggregate anticipated cost or savings to:</b></p> <p><b>A) State budget:</b></p> <p><b>Affected:</b> No <input checked="" type="checkbox"/> ; Yes <input type="checkbox"/></p> <p>The proposed rule change allows a radioactive disposal facility applicant or licensee two options in providing a financial assurance cost estimate to the Director for his review. The Director’s review of and action on the cost estimate will be covered by the existing budget and allocation of staff resources unless the applicant or licensee elects to submit a competitive site-specific cost estimate and the Director chooses to engage the services of a contractor or cost estimator to assist the Director in his review, then the applicant or licensee is required to reimburse the agency for the cost of the contractor’s or cost estimator’s review. Therefore, the proposed rule change will be cost neutral to the agency’s budget.</p> <p><b>B) Local government:</b></p> <p><b>Affected:</b> No <input checked="" type="checkbox"/> ; Yes <input type="checkbox"/></p> <p>No local governments own, operate or are licensed to operate a radioactive waste disposal facility; therefore there is no cost or savings impact to local governments.</p> <p><b>C) Small businesses ("small business" means a business employing fewer than 50 persons):</b></p> <p><b>Affected:</b> No <input checked="" type="checkbox"/> ; Yes <input type="checkbox"/></p> <p>The existing radioactive waste disposal facility is not considered a small business and no small businesses in Utah own, operate or are licensed to operate a radioactive waste disposal facility; therefore there is no cost or savings impact to small businesses.</p> <p><b>D) Persons other than small businesses, businesses, or local government entities ("person" means any individual, partnership, corporation, association, governmental entity, or public or private organization of any character other than an agency):</b></p> <p><b>Affected:</b> No <input type="checkbox"/> ; Yes <input checked="" type="checkbox"/></p>

	<p>There is only one facility in Utah that is currently affected by the proposed rule changes. S.B. 79 creates an optional way that a licensee may establish the estimated closure and post-closure costs. If the licensee chooses RS Means as the basis, there is no added cost compared to existing requirements.</p> <p>If the licensee chooses to submit a competitive site-specific estimate, the cost to a licensee to prepare such cost estimate may include the hiring an outside contractor. In addition, the licensee will be required to provide funding if the Director seeks outside assistance from a consultant who is familiar with local market costs to help evaluate the licensee’s submission. Such contractor and consulting costs will be based on the scope of the development of the estimate and the Director’s review. Whether these additional costs are incurred is completely within the licensee’s discretion.</p> <p>Because S.B. 79 and the associated proposed rule changes allow a facility the option to prepare a cost estimate using RS Means data rather than developing a competitive site-specific estimate through an outside contractor, the use of RS Means compared to the competitive site-specific estimate will result in an unspecified cost savings to the licensee.</p> <p>The proposed rule could decrease the estimated cost of closing the facility, by an unspecified amount, by allowing the facility to separate or combine units and use whichever estimate has the lowest closure and post-closure care costs. The proposed rule also allows the facility to reduce closure costs by closing the unit that is not filled to capacity as a smaller unit.</p>													
<p><b>8.</b></p>	<p><b>Compliance costs for affected persons:</b></p> <p>Existing law places the burden on the licensee to demonstrate that its financial surety is sufficient at all times to cover the costs of a third party contractor to complete the required closure and post-closure activities in the event the licensee is unable or unwilling to perform closure and post-closure activities. This serves to protect Utah taxpayers from paying for these activities. S.B. 173, S.B, 79, and the proposed rule changes do not alter the underlying compliance requirement; however, these changes do provide an alternate way in lieu of RS Means for the licensee to demonstrate compliance. The licensee’s potential compliance costs will be similar to the those described above.</p>													
<p><b>9.</b></p>	<p><b>A) Comments by the department head on the fiscal impact the rule may have on businesses:</b></p> <p>There is only one facility in Utah that is currently affected by the proposed rule changes. If the licensee chooses RS Means as the basis, there is no added cost compared to existing requirements. If the licensee chooses to prepare and submit a competitive site-specific estimate, there are undetermined costs due to the variability in the scope of the development of the estimate and the Director’s review. It is important that the Director have access to the expertise of an outside estimator familiar with local market costs to assist in the review and evaluation of the competitive site-specific estimate. The proposed rule changes establish the cost of this assistance should be borne by the licensee.</p> <p><b>B) Name and title of department head commenting on the fiscal impacts:</b></p> <p>Alan Matheson, Executive Director</p>													
<p><b>10.</b></p>	<p><b>This rule change is authorized or mandated by state law, and implements or interprets the following state and federal laws.</b></p> <p><b>State code or constitution citations (required)</b> (e.g., Section 63G-3-402; Subsection 63G-3-601(3); Article IV) :</p> <table border="1" data-bbox="191 1491 1482 1617"> <tr> <td data-bbox="191 1491 836 1533">Section 19-3-104</td> <td data-bbox="836 1491 1482 1533">Subsection 19-6-104(1)</td> </tr> <tr> <td data-bbox="191 1533 836 1575"></td> <td data-bbox="836 1533 1482 1575"></td> </tr> <tr> <td data-bbox="191 1575 836 1617"></td> <td data-bbox="836 1575 1482 1617"></td> </tr> </table>		Section 19-3-104	Subsection 19-6-104(1)										
Section 19-3-104	Subsection 19-6-104(1)													
<p><b>11.</b></p>	<p><b>This rule adds, updates, or removes the following title of materials incorporated by references</b> (a copy of materials incorporated by reference must be submitted to the Division of Administrative Rules; <i>if none, leave blank</i>):</p> <table border="1" data-bbox="191 1680 1482 1894"> <thead> <tr> <th data-bbox="191 1680 633 1732"></th> <th data-bbox="633 1680 1031 1732">First Incorporation</th> <th data-bbox="1031 1680 1482 1732">Second Incorporation</th> </tr> </thead> <tbody> <tr> <td data-bbox="191 1732 633 1806"><b>Official Title of Materials Incorporated (from title page)</b></td> <td data-bbox="633 1732 1031 1806"></td> <td data-bbox="1031 1732 1482 1806"></td> </tr> <tr> <td data-bbox="191 1806 633 1858"><b>Publisher</b></td> <td data-bbox="633 1806 1031 1858"></td> <td data-bbox="1031 1806 1482 1858"></td> </tr> <tr> <td data-bbox="191 1858 633 1894"><b>Date Issued</b></td> <td data-bbox="633 1858 1031 1894"></td> <td data-bbox="1031 1858 1482 1894"></td> </tr> </tbody> </table>			First Incorporation	Second Incorporation	<b>Official Title of Materials Incorporated (from title page)</b>			<b>Publisher</b>			<b>Date Issued</b>		
	First Incorporation	Second Incorporation												
<b>Official Title of Materials Incorporated (from title page)</b>														
<b>Publisher</b>														
<b>Date Issued</b>														

	<b>Issue, or version</b>		
	<b>ISBN Number (optional)</b>		
	<b>ISSN Number (optional)</b>		
	<b>Cost of Incorporated Reference</b>		
	<b>Action: Adds, updates, or removes</b>		
(If this rule incorporates more than two items by reference, please attach additional pages)			
<b>12.</b>	<b>The public may submit written or oral comments to the agency identified in box 1.</b> (The public may also request a hearing by submitting a written request to the agency. The agency is required to hold a hearing if it receives requests from ten interested persons or from an association having not fewer than ten members. Additionally, the request must be received by the agency not more than 15 days after the publication of this rule in the <i>Utah State Bulletin</i> . See Section 63G-3-302 and Rule R15-1 for more information.)		
	<b>A) Comments will be accepted until 5:00 p.m. on (mm/dd/yyyy):</b>	12/01/2017	
	<b>B) A public hearing (optional) will be held:</b>		
	<b>On (mm/dd/yyyy):</b>	<b>At (hh:mm AM/PM):</b>	<b>At (place):</b>
<b>13.</b>	<b>This rule change may become effective on (mm/dd/yyyy):</b>		01/12/2018
	NOTE: The date above is the date on which this rule MAY become effective. It is NOT the effective date. After the date designated in Box 12(A) above, the agency must submit a Notice of Effective Date to the Division of Administrative Rules to make this rule effective. Failure to submit a Notice of Effective Date will result in this rule lapsing and will require the agency to start the rulemaking process over.		
<b>14.</b>	<b>Indexing information -- keywords</b> (maximum of four, in lower case, except for acronyms (e.g., "GRAMA") or proper nouns (e.g., "Medicaid")); may not include the name of the agency:		
	Radiation	Radioactive waste disposal	
	Financial assurance		
<b>15.</b>	<b>Attach an RTF document containing the text of this rule change (filename):</b>		
<b>To the agency:</b> Information requested on this form is required by Sections 63G-3-301, 302, 303, and 402. Incomplete forms will be returned to the agency for completion, possibly delaying publication in the <i>Utah State Bulletin</i> , and delaying the first possible effective date.			
<b>AGENCY AUTHORIZATION</b>			
<b>Agency head or designee, and title:</b>		<b>Date (mm/dd/yyyy):</b>	

**R313. Environmental Quality, Waste Management and Radiation Control, Radiation.**

**R313-25. License Requirements for Land Disposal of Radioactive Waste - General Provisions.**

**R313-25-1. Purpose and Authority.**

(1) The purpose of this rule is to prescribe the requirements for the issuance of licenses for the land disposal of wastes received from other persons.

(2) The rules set forth herein are adopted pursuant to the provisions of Subsections 19-3-104(4), 19-3-104(7), 19-3-104(10), and 19-3-104(11).

(3) The requirements of Rule R313-25 are in addition to, and not in substitution for, other applicable requirements of these rules.

**R313-25-2. Definitions.**

As used in Rule R313-25, the following definitions apply:

"Active maintenance" means significant activity needed during the period of institutional control to maintain a reasonable assurance that the performance objectives in Sections R313-25-20 and R313-25-21 are met. Active maintenance may include the pumping and treatment of water from a disposal unit, the replacement of a disposal unit cover, or other episodic or continuous measures. Active maintenance does not include custodial activities like repair of fencing, repair or replacement of monitoring equipment, revegetation, minor additions to soil cover, minor repair of disposal unit covers, and general disposal site upkeep.

"Approval application" means an application by a radioactive waste facility regulated under Title 19, Chapter 3 or Title 19, Chapter 5, for a permit, permit modification, license, license amendment, or other authorization.

"Buffer zone" means a portion of the disposal site that is controlled by the licensee and that lies under the disposal units and between the disposal units and the boundary of the site.

"Competitive site-specific estimate" means a market-based cost estimate identifying and calculating the reasonable closure costs of a land disposal facility, including the cost of each activity in the closure, post-closure and institutional care of such facility, and market-based overhead(s) provided in sufficient detail to allow the Director to review and approve the same.

"Custodial agency" means an agency of the government designated to act on behalf of the government owner of the disposal site.

"Day" for purposes of this Rule means calendar days.

"Disposal" means the isolation of wastes from the biosphere by placing them in a land disposal facility.

"Disposal site" means that portion of a land disposal facility which is used for disposal of waste. It consists of disposal units and a buffer zone.

"Disposal unit" means a discrete portion of the disposal site into which waste is placed for disposal. For near-surface disposal, the disposal unit may be a trench.

"Engineered barrier" means a man-made structure or device intended to improve the land disposal facility's performance under Rule R313-25.

"Groundwater permit" means a groundwater quality discharge

permit issued under the authority of Title 19, Chapter 5 and Rule R317-6.

"Hydrogeologic unit" means a soil or rock unit or zone that has a distinct influence on the storage or movement of ground water.

"Inadvertent intruder" means a person who may enter the disposal site after closure and engage in activities unrelated to post closure management, such as agriculture, dwelling construction, or other pursuits which could, by disturbing the site, expose individuals to radiation.

"Intruder barrier" means a sufficient depth of cover over the waste that inhibits contact with waste and helps to ensure that radiation exposures to an inadvertent intruder will meet the performance objectives set forth in Rule R313-25, or engineered structures that provide equivalent protection to the inadvertent intruder.

"Land disposal facility" means the land, buildings and structures, and equipment which are intended to be used for the disposal of radioactive waste. Land disposal facility also includes any land, buildings and structures, and equipment adjacent to such land disposal facility used for the receipt, storage, treatment, or processing of radioactive waste.

"Monitoring" means observing and making measurements to provide data to evaluate the performance and characteristics of the disposal site.

"Near-surface disposal facility" means a land disposal facility in which waste is disposed of within approximately the upper 30 meters of the earth's surface.

"Site closure and stabilization" means those actions that are taken upon completion of operations that prepare the disposal site for custodial care, and that assure that the disposal site will remain stable and will not need ongoing active maintenance.

"Stability" means structural stability.

"Surveillance" means monitoring and observation of the disposal site to detect needs for maintenance or custodial care, to observe evidence of intrusion, and to ascertain compliance with other license and regulatory requirements.

"Tolling period," for purposes of this Rule, means a period during which days are not counted toward the deadlines specified in Subsections R313-25-6(3)(c), (4)(c)(i), (5)(b)(i), and (6)(b)(i).

"Treatment" means the stabilization or the reduction in volume of waste by a chemical or a physical process.

"Unlicensed facility" means a structure, road, or property adjacent to, but outside of, a licensed or permitted area and that is not used for waste disposal or management.

"Waste" means those low-level radioactive wastes containing radioactive material that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level radioactive waste means radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in (b), (c), and (d) of the definition for byproduct material found in Section R313-12-3.

### **R313-25-3. Pre-licensing Plan Approval Criteria for Siting of Commercial Radioactive Waste Disposal Facilities.**

(1) Persons proposing to construct or operate commercial radioactive waste disposal facilities, including waste incinerators, shall obtain a plan approval from the Director before applying for a license. Plans shall meet the siting criteria and plan approval requirements of Section R313-25-3.

(2) The siting criteria and plan approval requirements in Section R313-25-3 apply to prelicensing plan approval applications.

(3) Treatment and disposal facilities, including commercial radioactive waste incinerators, shall not be located:

(a) within or underlain by:

(i) national, state, and county parks, monuments, and recreation areas; designated wilderness and wilderness study areas; wild and scenic river areas;

(ii) ecologically and scientifically significant natural areas, including wildlife management areas and habitats for listed or proposed endangered species as designated by federal law;

(iii) 100 year floodplains;

(iv) areas 200 feet distant from Holocene faults;

(v) underground mines, salt domes and salt beds;

(vi) dam failure flood areas;

(vii) areas subject to landslide, mud flow, or other earth movement, unless adverse impacts can be mitigated;

(viii) farmlands classified or evaluated as "prime", "unique", or of "statewide importance" by the U.S. Department of Agricultural Soil Conservation Service under the Prime Farmland Protection Act;

(ix) areas five miles distant from existing permanent dwellings, residential areas, and other habitable structures, including schools, churches, and historic structures;

(x) areas five miles distant from surface waters including intermittent streams, perennial streams, rivers, lakes, reservoirs, and wetlands;

(xi) areas 1000 feet distant from archeological sites to which adverse impacts cannot reasonably be mitigated;

(xii) recharge zones of aquifers containing ground water which has a total dissolved solids content of less than 10,000 mg/l; or

(xiii) drinking water source protection areas designated by the Utah Drinking Water Board;

(b) in areas:

(i) above or underlain by aquifers containing ground water which has a total dissolved solids content of less than 500 mg/l and which aquifers do not exceed state ground water standards for pollutants;

(ii) above or underlain by aquifers containing ground water which has a total dissolved solids content between 3000 and 10,000 mg/l when the distance from the surface to the ground water is less than 100 ft.;

(iii) areas of extensive withdrawal of water, mineral or energy resources.

(iv) above or underlain by weak and unstable soils, including soils that lose their ability to support foundations as a result of hydrocompaction, expansion, or shrinkage;

(v) above or underlain by karst terrains.

(4) Commercial radioactive waste disposal facilities may not be located within a distance to existing drinking water wells and watersheds for public water supplies of five years ground water travel

time plus 1000 feet.

(5) The plan approval siting application shall include hydraulic conductivity and other information necessary to estimate adequately the ground water travel distance.

(6) The plan approval siting application shall include the results of studies adequate to identify the presence of ground water aquifers in the area of the proposed site and to assess the quality of the ground water of all aquifers identified in the area of the proposed site.

(7) Emergency response and safety.

(a) The plan approval siting application shall demonstrate the availability and adequacy of services for on-site emergencies, including medical and fire response. The application shall provide written evidence that the applicant has coordinated on-site emergency response plans with the local emergency planning committee (LEPC).

(b) The plan approval siting application shall include a comprehensive plan for responding to emergencies at the site.

(c) The plan approval siting application shall show proposed routes for transportation of radioactive wastes within the state. The plan approval siting application shall address the transportation means and routes available to evacuate the population at risk in the event of on-site accidents, including spills and fires.

(8) The plan approval siting application shall provide evidence that if the proposed disposal site is on land not owned by state or federal government, that arrangements have been made for assumption of ownership in fee by a state or federal agency.

(9) Siting Authority. The Director recognizes that Titles 10 and 17 of the Utah Code give cities and counties authority for local use planning and zoning. Nothing in Section R313-25-3 precludes cities and counties from establishing additional requirements as provided by applicable state and federal law.

#### **R313-25-4. License Required.**

(1) Persons shall not receive, possess, store, treat, or dispose of waste at a land disposal facility unless authorized by a license issued by the Director pursuant to the Utah Radiation Control Act and Rules R313-25 and R313-22.

(2) Persons shall file an application with the Director pursuant to Section R313-22-32 and obtain a license as provided in Rule R313-25 before commencement of construction of a land disposal facility. Failure to comply with this requirement may be grounds for denial of a license and other penalties established by law and rules.

#### **R313-25-5. Content of Application.**

In addition to the requirements set forth in Section R313-22-33, an application to receive from others, possess, and dispose of wastes shall consist of general information, specific technical information, institutional information, and financial information as set forth in Sections R313-25-7 through R313-25-11.

#### **R313-25-6. Director Review of Application.**

(1) The Director shall review each approval application to determine whether it complies with applicable statutory and regulatory requirements. Approval applications will be categorized as Category

1, 2, 3 and 4 applications, as provided in Subsections R313-25-6(2) through (5).

(2) Category 1 applications.

(a) A Category 1 application is an application that:

- (i) is administrative in nature;
- (ii) requires limited scrutiny by the Director; and
- (iii) does not require public comment.

(b) Examples of a Category 1 application include an application

to:

(i) correct typographical errors;

(ii) Change the name, address, or phone number of persons or agencies identified in the license or permit;

(iii) change the procedures or location for maintaining records; or

(iv) extend the date for compliance with a permit or license requirement by no more than 120 days.

(c) The Director shall review and approve or deny a Category 1 application within 30 days after the day on which the Director Receives the application.

(3) Category 2 applications:

(a) A Category 2 application is one that is not a Category 1, 3 or 4 application.

(b) Examples of a Category 2 application include:

(i) Increase in process, storage, or disposal capacity

(ii) Change engineering design, construction, or process controls;

(iii) Approve a proposed corrective action plan; or

(iv) Transfer direct control of a license or groundwater permit.

(c) (i) The Director shall review and approve or deny a Category 2 application within 180 days after the day on which the Director receives the application.

(ii) The period described in Subsection R313-25-6(3)(c)(i) shall be tolled as provided in Subsection R313-25-6(7).

(4) Category 3 applications.

(a) Category 3 application is an application for:

(i) a radioactive waste license renewal;

(ii) a groundwater permit renewal;

(iii) an amendment to an existing radioactive waste license or groundwater permit to allow a new disposal cell;

(iv) an amendment to an existing radioactive waste license or groundwater permit that would allow the facility to eliminate groundwater monitoring; or

(v) approval of a radioactive waste disposal facility closure plan.

(b) (i) The Director shall review and approve or deny a Category 3 application within 365 days after the day on which the Director receives the application.

(ii) The period described in Subsection R313-25-6(4)(b)(i) shall be tolled as provided in Subsection R313-25-6(7).

(5) Category 4 applications.

(a) A Category 4 application is an application for:

(i) a new radioactive waste license; or

(ii) a new groundwater permit.

(b) (i) The Director shall review and approve or deny a Category

4 application within 540 days after the day on which the Director receives the application.

(ii) The period described in Subsection R313-25-6(5)(b)(i) shall be tolled as provided in Subsection R313-25-6(7).

(6)(a) Within 60 days after the day on which the Director receives a Category 2, 3 or 4 approval application, the Director shall determine whether the application is complete and contains all the information necessary to process it for approval and make a finding by issuance of a written:

(i) notice of completeness to the applicant; or

(ii) notice of deficiency to the applicant, including a list of the additional information necessary to complete the application.

(b) The Director shall review written information submitted in response to a notice of deficiency within 30 days after the day on which the Director receives the supplemental information and shall again follow the procedures specified in Subsection R313-25-6(1)(a).

(c) If a document that is submitted as an application is substantially deficient, the Director may determine that it does not qualify as an application. Any such determination shall be made within 45 days of the document's submission and will include the Director's written findings.

(7) Tolling Periods. The periods specified for the Director's review and approval or denial under Subsections R313-25-6(3)(c)(i), (4)(b)(i), and (5)(b)(i) shall be tolled:

(a) while an owner or operator of a facility responds to the Director's request for information;

(b) during a public comment period; and

(c) while the federal government reviews the application.

(8) The Director shall prepare a detailed written explanation of the technical and regulatory basis for the Director's approval or denial of an approval application.

#### **R313-25-7. General Information.**

The general information shall include the following:

(1) identity of the applicant including:

(a) the full name, address, telephone number, and description of the business or occupation of the applicant;

(b) if the applicant is a partnership, the names and addresses of the partners and the principal location where the partnership does business;

(c) if the applicant is a corporation or an unincorporated association;

(i) the state where it is incorporated or organized and the principal location where it does business; and

(ii) the names and addresses of its directors and principal officers; and

(d) if the applicant is acting as an agent or representative of another person in filing the application, the applicant shall provide, with respect to the other person, information required under Subsection R313-25-7(1).

(2) Qualifications of the applicant shall include the following:

(a) the organizational structure of the applicant, both offsite and onsite, including a description of lines of authority and

assignments of responsibilities, whether in the form of administrative directives, contract provisions, or otherwise;

(b) the technical qualifications, including training and experience of the applicant and members of the applicant's staff, to engage in the proposed activities. Minimum training and experience requirements for personnel filling key positions described in Subsection R313-25-7(2)(a) shall be provided;

(c) a description of the applicant's personnel training program; and

(d) the plan to maintain an adequate complement of trained personnel to carry out waste receipt, handling, and disposal operations in a safe manner.

(3) A description of:

(a) the location of the proposed disposal site;

(b) the general character of the proposed activities;

(c) the types and quantities of waste to be received, possessed, and disposed of;

(d) plans for use of the land disposal facility for purposes other than disposal of wastes; and

(e) the proposed facilities and equipment; and

(4) proposed schedules for construction, receipt of waste, and first emplacement of waste at the proposed land disposal facility.

#### **R313-25-8. Specific Technical Information.**

The application shall include certain technical information. The following information is needed to determine whether or not the applicant or licensee can meet the performance objectives and the applicable technical requirements of Rule R313-25:

(1) A description of the natural and demographic disposal site characteristics shall be based on and determined by disposal site selection and characterization activities. The description shall include geologic, geochemical, geotechnical, hydrologic, ecologic, archaeologic, meteorologic, climatologic, and biotic features of the disposal site and vicinity.

(2) Descriptions of the design features of the land disposal facility and of the disposal units for near-surface disposal shall include those design features related to infiltration of water; integrity of covers for disposal units; structural stability of backfill, wastes, and covers; contact of wastes with standing water; disposal site drainage; disposal site closure and stabilization; elimination to the extent practicable of long-term disposal site maintenance; inadvertent intrusion; occupational exposures; disposal site monitoring; and adequacy of the size of the buffer zone for monitoring and potential mitigative measures.

(3) Descriptions of the principal design criteria and their relationship to the performance objectives.

(4) Descriptions of the natural events or phenomena on which the design is based and their relationship to the principal design criteria.

(5) Descriptions of codes and standards which the applicant has applied to the design, and will apply to construction of the land disposal facilities.

(6) Descriptions of the construction and operation of the land disposal facility. The description shall include as a minimum the

methods of construction of disposal units; waste emplacement; the procedures for and areas of waste segregation; types of intruder barriers; onsite traffic and drainage systems; survey control program; methods and areas of waste storage; and methods to control surface water and ground water access to the wastes. The description shall also include a description of the methods to be employed in the handling and disposal of wastes containing chelating agents or other non-radiological substances which might affect meeting the performance objectives of Rule R313-25

(7) A description of the disposal site closure plan, including those design features which are intended to facilitate disposal site closures and to eliminate the need for active maintenance after closure.

(8) Identification of the known natural resources at the disposal site whose exploitation could result in inadvertent intrusion into the wastes after removal of active institutional control.

(9) Descriptions of the kind, amount, classification and specifications of the radioactive material proposed to be received, possessed, and disposed of at the land disposal facility.

(10) Descriptions of quality assurance programs, tailored to low-level waste disposal, including audit and managerial controls, for the determination of natural disposal site characteristics and for quality control during the design, construction, operation, and closure of the land disposal facility and the receipt, handling, and emplacement of waste.

(11) A description of the radiation safety program for control and monitoring of radioactive effluents to ensure compliance with the performance objective in Section R313-25-20 and monitoring of occupational radiation exposure to ensure compliance with the requirements of Rule R313-15 and to control contamination of personnel, vehicles, equipment, buildings, and the disposal site. The applicant shall describe procedures, instrumentation, facilities, and equipment appropriate to both routine and emergency operations.

(12) A description of the environmental monitoring program to provide data and to evaluate potential health and environmental impacts and the plan for taking corrective measures if migration is indicated.

(13) Descriptions of the administrative procedures that the applicant will apply to control activities at the land disposal facility.

(14) A description of the facility electronic recordkeeping system as required in Section R313-25-33.

#### **R313-25-9. Technical Analyses.**

(1) The licensee or applicant shall conduct a site-specific performance assessment and receive Director approval prior to accepting any radioactive waste if:

(a) the waste was not considered in the development of the limits on Class A waste and not included in the analyses of the Draft Environmental Impact Statement on 10 CFR Part 61 "Licensing Requirements for Land Disposal of Radioactive Waste," NUREG-0782. U.S. Nuclear Regulatory Commission. September 1981, or

(b) the waste is likely to result in greater than 10 percent of the dose limits in Section R313-25-19 during the time period at which

peak dose would occur, or

(c) the waste will result in greater than 10 percent of the total site source term over the operational life of the facility, or

(d) the disposal of the waste would result in an unanalyzed condition not considered in Rule R313-25.

(2) A licensee that has a previously-approved site-specific performance assessment that addressed a radioactive waste for which a site-specific performance assessment would otherwise be required under Subsection R313-25-9(1) shall notify the Director of the applicability of the previously-approved site-specific performance assessment at least 60 days prior to the anticipated acceptance of the radioactive waste.

(3) The licensee shall not accept radioactive waste until the Director has approved the information submitted pursuant to Subsections R313-25-9(1) or (2).

(4) The licensee or applicant shall also include in the specific technical information the following analyses needed to demonstrate that the performance objectives of Rule R313-25 will be met:

(a) Analyses demonstrating that the general population will be protected from releases of radioactivity shall consider the pathways of air, soil, ground water, surface water, plant uptake, and exhumation by burrowing animals. The analyses shall clearly identify and differentiate between the roles performed by the natural disposal site characteristics and design features in isolating and segregating the wastes. The analyses shall clearly demonstrate a reasonable assurance that the exposures to humans from the release of radioactivity will not exceed the limits set forth in Section R313-25-20.

(b) Analyses of the protection of inadvertent intruders shall demonstrate a reasonable assurance that the waste classification and segregation requirements will be met and that adequate barriers to inadvertent intrusion will be provided.

(c) Analysis of the protection of individuals during operations shall include assessments of expected exposures due to routine operations and likely accidents during handling, storage, and disposal of waste. The analysis shall provide reasonable assurance that exposures will be controlled to meet the requirements of Rule R313-15.

(d) Analyses of the long-term stability of the disposal site shall be based upon analyses of active natural processes including erosion, mass wasting, slope failure, settlement of wastes and backfill, infiltration through covers over disposal areas and adjacent soils, surface drainage of the disposal site, and the effects of changing lake levels. The analyses shall provide reasonable assurance that there will not be a need for ongoing active maintenance of the disposal site following closure.

(5)(a) Notwithstanding Subsection R313-25-9(1), any facility that proposes to land dispose of significant quantities of concentrated depleted uranium (more than one metric ton in total accumulation) after June 1, 2010, shall submit for the Director's review and approval a performance assessment that demonstrates that the performance standards specified in 10 CFR Part 61 and corresponding provisions of Utah rules will be met for the total quantities of concentrated depleted uranium and other wastes, including wastes already disposed of and the quantities of concentrated depleted

uranium the facility now proposes to dispose. Any such performance assessment shall be revised as needed to reflect ongoing guidance and rulemaking from NRC. For purposes of this performance assessment, the compliance period shall be a minimum of 10,000 years. Additional simulations shall be performed for the period where peak dose occurs and the results shall be analyzed qualitatively.

(b) No facility may dispose of significant quantities of concentrated depleted uranium prior to the approval by the Director of the performance assessment required in Subsection R313-25-9(5) (a).

(c) For purposes of this Subsection R313-25-9(5) only, "concentrated depleted uranium" means waste with depleted uranium concentrations greater than 5 percent by weight.

#### **R313-25-10. Institutional Information.**

The institutional information submitted by the applicant shall include:

(1) A certification by the federal or state agency which owns the disposal site that the agency is prepared to accept transfer of the license when the provisions of Section R313-25-17 are met and will assume responsibility for institutional control after site closure and for post-closure observation and maintenance.

(2) Evidence, if the proposed disposal site is on land not owned by the federal or a state government, that arrangements have been made for assumption of ownership in fee by the federal or a state agency.

#### **R313-25-11. Financial Information.**

This information shall demonstrate that the applicant is financially qualified to carry out the activities for which the license is sought. The information shall meet other financial assurance requirements of Rule R313-25.

#### **R313-25-12. Requirements for Issuance of a License.**

A license for the receipt, possession, and disposal of waste containing radioactive material will be issued by the Director upon finding that:

(1) the issuance of the license will not constitute an unreasonable risk to the health and safety of the public;

(2) the applicant is qualified by reason of training and experience to carry out the described disposal operations in a manner that protects health and minimizes danger to life or property;

(3) the applicant's proposed disposal site, land disposal facility design, land disposal facility operations, including equipment, facilities, and procedures, disposal site closure, and post-closure institutional control, are adequate to protect the public health and safety as specified in the performance objectives of Section R313-25-20;

(4) the applicant's proposed disposal site, land disposal site facility design, land disposal facility operations, including equipment, facilities, and procedures, disposal site closure, and post-closure institutional control are adequate to protect the public health and safety in accordance with the performance objectives of Section R313-25-21;

(5) the applicant's proposed land disposal facility operations, including equipment, facilities, and procedures, are adequate to

protect the public health and safety in accordance with Rule R313-15;

(6) the applicant's proposed disposal site, land disposal site facility design, land disposal facility operations, disposal site closure, and post-closure institutional control plans are adequate to protect the public health and safety in that they will provide reasonable assurance of the long-term stability of the disposed waste and the disposal site and will eliminate to the extent practicable the need for continued maintenance of the disposal site following closure;

(7) the applicant's demonstration provides reasonable assurance that the requirements of Rule R313-25 will be met;

(8) the applicant's proposal for institutional control provides reasonable assurance that control will be provided for the length of time found necessary to ensure the findings in Subsections R313-25-12(3) through (6) and that the institutional control meets the requirements of Section R313-25-29.

(9) the financial or surety arrangements meet the requirements of Rule R313-25.

### **R313-25-13. Conditions of Licenses.**

(1) A license issued under Rule R313-25, or a right thereunder, may not be transferred, assigned, or disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license to a person, unless the Director finds, after securing full information, that the transfer is in accordance with the provisions of the Radiation Control Act and Rules and gives his consent in writing in the form of a license amendment.

(2) The Director may require the licensee to submit written statements under oath.

(3) The license will be terminated only on the full implementation of the final closure plan, including post-closure observation and maintenance, as approved by the Director.

(4) The licensee shall submit to the provisions of the Act now or hereafter in effect, and to all findings and orders of the Director. The terms and conditions of the license are subject to amendment, revision, or modification, by reason of amendments to, or by reason of rules, and orders issued in accordance with the terms of the Act and these rules.

(5) Persons licensed by the Director pursuant to Rule R313-25 shall confine possession and use of the materials to the locations and purposes authorized in the license.

(6) The licensee shall not dispose of waste until the Director has inspected the land disposal facility and has found it to conform with the description, design, and construction described in the application for a license.

(7) The Director may incorporate, by rule or order, into licenses at the time of issuance or thereafter, additional requirements and conditions with respect to the licensee's receipt, possession, and disposal of waste as the Director deems appropriate or necessary in order to:

(a) protect health or to minimize danger to life or property;

(b) require reports and the keeping of records, and to provide for inspections of licensed activities as the Director deems necessary or appropriate to effectuate the purposes of the Radiation Control Act and Rules.

(8) The authority to dispose of wastes expires on the expiration date stated in the license. An expiration date on a license applies only to the above ground activities and to the authority to dispose of waste. Failure to renew the license shall not relieve the licensee of responsibility for implementing site closure, post-closure observation, and transfer of the license to the site owner.

**R313-25-14. Application for Renewal or Closure.**

(1) An application for renewal or an application for closure under Section R313-25-15 shall be filed at least 90 days prior to license expiration.

(2) Applications for renewal of a license shall be filed in accordance with Sections R313-25-5 and R313-25-7 through 25-11. Applications for closure shall be filed in accordance with Section R313-25-15. Information contained in previous applications, statements, or reports filed with the Director under the license may be incorporated by reference if the references are clear and specific.

(3) If a licensee has filed an application in proper form for renewal of a license, the license shall not expire unless and until the Director has taken final action to deny application for renewal.

(4) In evaluating an application for license renewal, the Director will apply the criteria set forth in Section R313-25-12.

**R313-25-15. Contents of Application for Site Closure and Stabilization.**

(1) Prior to final closure of the disposal site, or as otherwise directed by the Director, the licensee shall submit an application to amend the license for closure. This closure application shall include a final revision and specific details of the land disposal site facility closure plan included in the original license application submitted and approved under Section R313-25-8(7). The plan shall include the following:

(a) additional geologic, hydrologic, or other data pertinent to the long-term containment of emplaced wastes obtained during the operational period;

(b) the results of tests, experiments, or other analyses relating to backfill of excavated areas, closure and sealing, waste migration and interaction with emplacement media, or other tests, experiments, or analyses pertinent to the long-term containment of emplaced waste within the disposal site;

(c) proposed revision of plans for:

(i) decontamination or dismantlement of surface facilities;

(ii) backfilling of excavated areas; or

(iii) stabilization of the disposal site for post-closure care.

(d) Significant new information regarding the environmental impact of closure activities and long-term performance of the disposal site.

(2) Upon review and consideration of an application to amend the license for closure submitted in accordance with Subsection R313-25-15(1), the Director shall issue an amendment authorizing closure if there is reasonable assurance that the long-term performance objectives of Rule R313-25 will be met.

**R313-25-16. Post-Closure Observation and Maintenance.**

The licensee shall observe, monitor, and carry out necessary maintenance and repairs at the disposal site until the site closure is complete and the license is transferred by the Director in accordance with Section R313-25-17. The licensee shall remain responsible for the disposal site for an additional five years. The Director may approve closure plans that provide for shorter or longer time periods of post-closure observation and maintenance, if sufficient rationale is developed for the variance.

**R313-25-17. Transfer of License.**

Following closure and the period of post-closure observation and maintenance, the licensee may apply for an amendment to transfer the license to the disposal site owner. The license shall be transferred when the Director finds:

- (1) that the disposal site was closed according to the licensee's approved disposal site closure plan;
- (2) that the licensee has provided reasonable assurance that the performance objectives of Rule R313-25 have been met;
- (3) that funds for care and records required by Subsections R313-25-33(4) and (5) have been transferred to the disposal site owner;
- (4) that the post-closure monitoring program is operational and can be implemented by the disposal site owner; and
- (5) that the Federal or State agency which will assume responsibility for institutional control of the disposal site is prepared to assume responsibility and ensure that the institutional requirements found necessary under Subsection R313-25-12(8) will be met.

**R313-25-18. Termination of License.**

(1) Following the period of institutional control needed to meet the requirements of Section R313-25-12, the licensee may apply for an amendment to terminate the license.

(2) This application will be reviewed in accordance with the provisions of Section R313-22-32.

- (3) A license shall be terminated only when the Director finds:
- (a) that the institutional control requirements of Subsection R313-25-12(8) have been met;
  - (b) that additional requirements resulting from new information developed during the institutional control period have been met;
  - (c) that permanent monuments or markers warning against intrusion have been installed; and
  - (d) that records required by Subsections R313-25-33(4) and (5) have been sent to the party responsible for institutional control of the disposal site and a copy has been sent to the Director immediately prior to license termination.

**R313-25-19. General Requirement.**

Land disposal facilities shall be sited, designed, operated, closed, and controlled after closure so that reasonable assurance exists that exposures to individuals do not exceed the limits stated in Sections R313-25-20 and 25-23.

**R313-25-20. Protection of the General Population from Releases of Radioactivity.**

Concentrations of radioactive material which may be released to the general environment in ground water, surface water, air, soil, plants or animals shall not result in an annual dose exceeding an equivalent of 0.25 mSv (0.025 rem) to the whole body, 0.75 mSv (0.075 rem) to the thyroid, and 0.25 mSv (0.025 rem) to any other organ of any member of the public. No greater than 0.04 mSv (0.004 rem) committed effective dose equivalent or total effective dose equivalent to any member of the public shall come from groundwater. Reasonable efforts should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable.

**R313-25-21. Protection of Individuals from Inadvertent Intrusion.**

Design, operation, and closure of the land disposal facility shall ensure protection of any individuals inadvertently intruding into the disposal site and occupying the site or contacting the waste after active institutional controls over the disposal site are removed.

**R313-25-22. Protection of Individuals During Operations.**

Operations at the land disposal facility shall be conducted in compliance with the standards for radiation protection set out in Rule R313-15 of these rules, except for release of radioactivity in effluents from the land disposal facility, which shall be governed by Section R313-25-20. Every reasonable effort should be made to maintain radiation exposures as low as is reasonably achievable, ALARA.

**R313-25-23. Stability of the Disposal Site After Closure.**

The disposal facility shall be sited, designed, used, operated, and closed to achieve long-term stability of the disposal site and to eliminate, to the extent practicable, the need for ongoing active maintenance of the disposal site following closure so that only surveillance, monitoring, or minor custodial care are required.

**R313-25-24. Disposal Site Suitability Requirements for Land Disposal - Near-Surface Disposal.**

(1) The primary emphasis in disposal site suitability is given to isolation of wastes and to disposal site features that ensure that the long-term performance objectives are met.

(2) The disposal site shall be capable of being characterized, modeled, analyzed and monitored.

(3) Within the region where the facility is to be located, a disposal site should be selected so that projected population growth and future developments are not likely to affect the ability of the disposal facility to meet the performance objectives of Rule R313-25.

(4) Areas shall be avoided having known natural resources which, if exploited, would result in failure to meet the performance objectives of Rule R313-25.

(5) The disposal site shall be generally well drained and free of areas of flooding or frequent ponding. Waste disposal shall not take place in a 100-year flood plain, coastal high-hazard area or wetland, as defined in Executive Order 11988, "Floodplain Management Guidelines."

(6) Upstream drainage areas shall be minimized to decrease the amount of runoff which could erode or inundate waste disposal units.

(7) The disposal site shall provide sufficient depth to the water table that ground water intrusion, perennial or otherwise, into the waste will not occur. The Director will consider an exception to this requirement to allow disposal below the water table if it can be conclusively shown that disposal site characteristics will result in molecular diffusion being the predominant means of radionuclide movement and the rate of movement will result in the performance objectives being met. In no case will waste disposal be permitted in the zone of fluctuation of the water table.

(8) The hydrogeologic unit used for disposal shall not discharge ground water to the surface within the disposal site.

(9) Areas shall be avoided where tectonic processes such as faulting, folding, seismic activity, vulcanism, or similar phenomena may occur with such frequency and extent to significantly affect the ability of the disposal site to meet the performance objectives of Rule R313-25 or may preclude defensible modeling and prediction of long-term impacts.

(10) Areas shall be avoided where surface geologic processes such as mass wasting, erosion, slumping, landsliding, or weathering occur with sufficient such frequency and extent to significantly affect the ability of the disposal site to meet the performance objectives of Rule R313-25, or may preclude defensible modeling and prediction of long-term impacts.

(11) The disposal site shall not be located where nearby facilities or activities could adversely impact the ability of the site to meet the performance objectives of Rule R313-25 or significantly mask the environmental monitoring program.

#### **R313-25-25. Disposal Site Design for Near-Surface Land Disposal.**

(1) Site design features shall be directed toward long-term isolation and avoidance of the need for continuing active maintenance after site closure.

(2) The disposal site design and operation shall be compatible with the disposal site closure and stabilization plan and lead to disposal site closure that provides reasonable assurance that the performance objectives will be met.

(3) The disposal site shall be designed to complement and improve, where appropriate, the ability of the disposal site's natural characteristics to assure that the performance objectives will be met.

(4) Covers shall be designed to minimize, to the extent practicable, water infiltration, to direct percolating or surface water away from the disposed waste, and to resist degradation by surface geologic processes and biotic activity.

(5) Surface features shall direct surface water drainage away from disposal units at velocities and gradients which will not result in erosion that will require ongoing active maintenance in the future.

(6) The disposal site shall be designed to minimize to the extent practicable the contact of water with waste during storage, the contact of standing water with waste during disposal, and the contact of percolating or standing water with wastes after disposal.

#### **R313-25-26. Near Surface Land Disposal Facility Operation and**

### **Disposal Site Closure.**

(1) Wastes designated as Class A pursuant to Section R313-15-1009 of these rules shall be segregated from other wastes by placing them in disposal units which are sufficiently separated from disposal units for the other waste classes so that any interaction between Class A wastes and other wastes will not result in the failure to meet the performance objectives of Rule R313-25. This segregation is not necessary for Class A wastes if they meet the stability requirements of Subsection R313-15-1009(2)(b).

(2) Wastes designated as Class C pursuant to Section R313-15-1009 shall be disposed of so that the top of the waste is a minimum of five meters below the top surface of the cover or shall be disposed of with intruder barriers that are designed to protect against an inadvertent intrusion for at least 500 years.

(3) Except as provided in Subsection R313-25-1(1), only waste classified as Class A, B, or C shall be acceptable for near-surface disposal. Wastes shall be disposed of in accordance with the requirements of Subsections R313-25-26(4) through 11.

(4) Wastes shall be emplaced in a manner that maintains the package integrity during emplacement, minimizes the void spaces between packages, and permits the void spaces to be filled.

(5) Void spaces between waste packages shall be filled with earth or other material to reduce future subsidence within the fill.

(6) Waste shall be placed and covered in a manner that limits the radiation dose rate at the surface of the cover to levels that at a minimum will permit the licensee to comply with all provisions of Sections R313-15-301 and 302 at the time the license is transferred pursuant to Section R313-25-17.

(7) The boundaries and locations of disposal units shall be accurately located and mapped by means of a land survey. Near-surface disposal units shall be marked in such a way that the boundaries of the units can be easily defined. Three permanent survey marker control points, referenced to United States Geological Survey or National Geodetic Survey control stations, shall be established on the site to facilitate surveys. The United States Geological Survey or National Geodetic Survey control stations shall provide horizontal and vertical controls as checked against United States Geological Survey or National Geodetic Survey record files.

(8) A buffer zone of land shall be maintained between any buried waste and the disposal site boundary and beneath the disposed waste. The buffer zone shall be of adequate dimensions to carry out environmental monitoring activities specified in Subsection R313-25-27(4) and take mitigative measures if needed.

(9) Closure and stabilization measures as set forth in the approved site closure plan shall be carried out as the disposal units are filled and covered.

(10) Active waste disposal operations shall not have an adverse effect on completed closure and stabilization measures.

(11) Only wastes containing or contaminated with radioactive material shall be disposed of at the disposal site.

(12) Proposals for disposal of waste that are not generally acceptable for near-surface disposal because the wastes form and disposal methods shall be different and, in general, more stringent than those specified for Class C waste, may be submitted to the Director

for approval.

**R313-25-27. Environmental Monitoring.**

(1) At the time a license application is submitted, the applicant shall have conducted a preoperational monitoring program to provide basic environmental data on the disposal site characteristics. The applicant shall obtain information about the ecology, meteorology, climate, hydrology, geology, geochemistry, and seismology of the disposal site. For those characteristics that are subject to seasonal variation, data shall cover at least a 12-month period.

(2) During the land disposal facility site construction and operation, the licensee shall maintain an environmental monitoring program. Measurements and observations shall be made and recorded to provide data to evaluate the potential health and environmental impacts during both the construction and the operation of the facility and to enable the evaluation of long-term effects and need for mitigative measures. The monitoring system shall be capable of providing early warning of releases of waste from the disposal site before they leave the site boundary.

(3) After the disposal site is closed, the licensee responsible for post-operational surveillance of the disposal site shall maintain a monitoring system based on the operating history and the closure and stabilization of the disposal site. The monitoring system shall be capable of providing early warning of releases of waste from the disposal site before they leave the site boundary.

(4) The licensee shall have plans for taking corrective measures if the environmental monitoring program detects migration of waste which would indicate that the performance objectives may not be met.

**R313-25-28. Alternative Requirements for Design and Operations.**

The Director may, upon request or on the Director's own initiative, authorize provisions other than those set forth in Sections R313-25-25 and 25-27 for the segregation and disposal of waste and for the design and operation of a land disposal facility on a specific basis, if it finds reasonable assurance of compliance with the performance objectives of Rule R313-25.

**R313-25-29. Institutional Requirements.**

(1) Land Ownership. Disposal of waste received from other persons may be permitted only on land owned in fee by the Federal or a State government.

(2) Institutional Control. The land owner or custodial agency shall conduct an institutional control program to physically control access to the disposal site following transfer of control of the disposal site from the disposal site operator. The institutional control program shall also include, but not be limited to, conducting an environmental monitoring program at the disposal site, periodic surveillance, minor custodial care, and other equivalents as determined by the Director, and administration of funds to cover the costs for these activities. The period of institutional controls will be determined by the Director, but institutional controls may not be relied upon for more than 100 years following transfer of control of the disposal site to the owner.

**R313-25-30. Applicant Qualifications and Assurances.**

The applicant shall show that it either possesses the necessary funds, or has reasonable assurance of obtaining the necessary funds, or by a combination of the two, to cover the estimated costs of conducting all licensed activities over the planned operating life of the project, including costs of construction and disposal.

**R313-25-31. Funding for Disposal Site Closure and Stabilization.**

(1) The applicant shall provide assurances prior to the commencement of operations, and a licensee shall provide assurances annually, that sufficient funds are or will be available to carry out land disposal site facility closure and stabilization, including:

(a) decontamination or dismantlement of land disposal facility structures, and

(b) closure and stabilization of the disposal site so that following transfer of the disposal site to the site owner, the need for ongoing active maintenance is eliminated to the extent practicable and only minor custodial care, surveillance, and monitoring are required. These assurances shall be based on Director approved cost estimates reflecting the Director approved plan for disposal site closure and stabilization. The applicant's or the licensee's cost estimates shall take into account total costs that would be incurred if an independent contractor were hired to perform the closure and stabilization work, in accordance with R313-25-31.5.

(2) In order to avoid unnecessary duplication and expense, the Director will accept financial sureties that have been consolidated with earmarked financial or surety arrangements established to meet requirements of Federal or other State agencies or local governmental bodies for decontamination, closure, and stabilization - as to any unlicensed facility. The Director will accept these arrangements only if they are considered adequate to satisfy the requirements of Section R313-25-31 and if they clearly identify ~~that~~ the portion of the surety which covers the closure of ~~the disposal site is clearly identified~~ such unlicensed facility and is committed for use in accomplishing these activities.

(3) The licensee's financial or surety arrangement shall be submitted annually for review by the Director to assure that sufficient funds will be available for completion of the closure plan.

(4) The amount of the licensee's financial or surety arrangement shall change in accordance with changes in the predicted costs of closure and stabilization. Factors affecting closure and stabilization cost estimates include inflation, increases in the amount of disturbed land, changes in engineering plans, closure and stabilization that have already been accomplished, and other conditions affecting costs. The financial or surety arrangement shall be sufficient at all times to cover the costs of closure and stabilization of the disposal units that are expected to be used before the next license renewal.

(5) The financial or surety arrangement shall be written for a specified period of time and shall be automatically renewed unless the person who issues the surety notifies the Director; the beneficiary, the site owner; and the principal, the licensee, not less than 90 days prior to the renewal date of its intention not to renew. In such a situation, the licensee shall submit a replacement surety within 30

days after notification of cancellation. If the licensee fails to provide a replacement surety acceptable to the Director, the beneficiary may collect on the original surety.

(6) Proof of forfeiture shall not be necessary to collect the surety so that, in the event that the licensee could not provide an acceptable replacement surety within the required time, the surety shall be automatically collected prior to its expiration. The conditions described above shall be clearly stated on surety instruments.

(7) Financial or surety arrangements generally acceptable to the Director include surety bonds, cash deposits, certificates of deposit, deposits of government securities, escrow accounts, irrevocable letters or lines of credit, trust funds, and combinations of the above or other types of arrangements as may be approved by the Director. Self-insurance, or an arrangement which essentially constitutes self-insurance, will not satisfy the surety requirement for private sector applicants.

(8) The licensee's financial or surety arrangement shall remain in effect until the closure and stabilization program has been completed and approved by the Director, and the license has been transferred to the site owner.

(9) The financial assurance shall be based on an annual estimate and shall include closure and post-closure costs in all areas subject to the licensed or permitted portions of the facility;

(10) Financial assurance for an unlicensed facility that supports the operation of a licensed or permitted facility shall include the estimated cost of:

(a) the removal of structures;

(b) the testing of structures, roads, and property to ensure no radiological contamination has occurred outside of the licensed area; and

(c) stabilization and water infiltration control;

(11) Financial assurance cost estimates for a single approved waste disposal unit for which the volume of waste already placed and proposed to be placed in the unit within the surety period is less than the full waste capacity of the unit shall reflect the closure and post-closure costs for a waste disposal unit smaller than the approved waste disposal unit, if the unit could be reduced in size, meet closure requirements, and reduce closure costs;

(12) Financial assurance cost estimates for two approved adjacent waste disposal units that have been approved to be combined into a single unit and for which the combined volume of waste already placed and proposed to be placed in the units within the surety period is less than the combined waste capacity for the two separate units shall reflect either two separate waste disposal units or a single combined unit, whichever has the lowest closure and post-closure costs;

(13) The licensee or permittee shall annually propose closure and post-closure costs upon which financial assurance amounts are based, including costs of potential remediation at the licensed or permitted facility and, notwithstanding the obligations described in Subsection R313-25-31(10), any unlicensed facility;

(14) To provide the information in Subsection R313-25-31(13), the licensee or permittee shall provide:

(a) a proposed annual cost estimate using the current edition of RS Means Facilities Construction Cost Data or using a process, including an indirect cost multiplier, previously agreed to between the licensee or permittee and the Director; or

(b) (i) for an initial financial assurance determination and for each financial assurance determination every five years thereafter, a proposed competitive site-specific estimate for closure and post-closure care of the facility at least once every five years; and

(ii) for each year between a financial assurance determination described in Subsection R313-25-31(14) (b) (i), a proposed financial assurance estimate that accounts for current site conditions and that includes an annual inflation adjustment to the financial assurance determination using the Gross Domestic Product Implicit Price Deflator of the Bureau of Economic Analysis, United States Department of Commerce, calculated by dividing the latest annual deflator by the deflator for the previous year; and

(15) The Director shall:

(a) annually review the licensee's or permittee's proposed closure and postclosure estimate; and

(b) approve the estimate if the Director determines that the estimate would be sufficient to provide for closure and post-closure costs.

#### **R313-25-31.5. Calculation of Closure Costs.**

(1) In order to demonstrate the adequacy of closure, stabilization, post-closure, and institutional control funding in compliance with Section 19-3-104 and Subsection R313-25-31(1) (b), the applicant or licensee shall establish the level of costs that an independent contractor would incur by reliance on one of two methods, as follows:

(a) using the current edition of RS Means Facility Construction Cost Data; or

(b) using a competitive site-specific estimate.

(2) Any proposed competitive site-specific estimate submitted pursuant to Subsection R313-25-31(14) (b) (i) shall:

(a) be certified by a professional engineer or geologist licensed in Utah; and

(b) include sufficient detail so that the Director can determine that the cost estimate would be sufficient to provide for closure, post closure costs, and institutional control costs in compliance with Chapter 19-3 and Section R313-25-31.

(3) In the event that an applicant or licensee submits a competitive site-specific estimate, the Director may engage the services of a contractor or cost estimator who is familiar with competitive, site-specific construction costs in order to assist the Director in his review. In that event, the applicant or licensee shall reimburse the costs of the contractor or cost estimator's review.

(4) In the intervening four years following Director approval of a competitive site-specific estimate, a proposed cost estimate that accounts for current site conditions or changes to site conditions under Subsection R313-25-31(14) (b) (ii) shall be submitted by using either:

(a) the current edition of RS Means Facility Construction

Cost Data; or

(b) the cost estimating rationale developed in the approved competitive site-specific estimate.

**R313-25-32. Financial Assurances for Institutional Controls.**

(1) Prior to the issuance of the license, the applicant shall provide for Director approval, a binding arrangement, between the applicant and the disposal site owner that ensures that sufficient funds will be available to cover the costs of monitoring and required maintenance during the institutional control period. The binding arrangement shall be reviewed annually by the Director to ensure that changes in inflation, technology, and disposal facility operations are reflected in the arrangements.

(2) Subsequent changes to the binding arrangement specified in Subsection R313-25-32(1) relevant to institutional control shall be submitted to the Director for prior approval.

**R313-25-33. Maintenance of Records, Reports, and Transfers.**

(1) Licensees shall maintain records and make reports in connection with the licensed activities as may be required by the conditions of the license or by the rules and orders of the Director.

(2) Records which are required by these rules or by license conditions shall be maintained for a period specified by the appropriate rules or by license condition. If a retention period is not otherwise specified, these records shall be maintained and transferred to the officials specified in Subsection R313-25-33(4) as a condition of license termination unless the Director otherwise authorizes their disposition.

(3) Records which shall be maintained pursuant to Rule R313-25 may be the original or a reproduced copy or microfilm if this reproduced copy or microfilm is capable of producing copy that is clear and legible at the end of the required retention period.

(4) Notwithstanding Subsections R313-25-33(1) through (3), copies of records of the location and the quantity of wastes contained in the disposal site shall be transferred upon license termination to the chief executive of the nearest municipality, the chief executive of the county in which the facility is located, the county zoning board or land development and planning agency, the State Governor, and other state, local, and federal governmental agencies as designated by the Director at the time of license termination.

(5) Following receipt and acceptance of a shipment of waste, the licensee shall record the date that the shipment is received at the disposal facility, the date of disposal of the waste, a traceable shipment manifest number, a description of any engineered barrier or structural overpack provided for disposal of the waste, the location of disposal at the disposal site, the condition of the waste packages as received, discrepancies between the materials listed on the manifest and those received, the volume of any pallets, bracing, or other shipping or onsite generated materials that are contaminated, and are disposed of as contaminated or suspect materials, and evidence of leakage or damaged packages or radiation or contamination levels in excess of limits specified in U.S. Department of Transportation and Director regulations or rules. The licensee shall briefly describe repackaging operations of the waste packages included in the shipment,

plus other information required by the Director as a license condition.

(6) Licensees authorized to dispose of waste received from other persons shall file a copy of their financial report or a certified financial statement annually with the Director in order to update the information base for determining financial qualifications.

(7) (a) Licensees authorized to dispose of waste received from other persons, pursuant to Rule R313-25, shall submit annual reports to the Director. Reports shall be submitted by the end of the first calendar quarter of each year for the preceding year.

(b) The reports shall include:

(i) specification of the quantity of each of the principal contaminants released to unrestricted areas in liquid and in airborne effluents during the preceding year;

(ii) the results of the environmental monitoring program;

(iii) a summary of licensee disposal unit survey and maintenance activities;

(iv) a summary, by waste class, of activities and quantities of radionuclides disposed of;

(v) instances in which observed site characteristics were significantly different from those described in the application for a license; and

(vi) other information the Director may require.

(c) If the quantities of waste released during the reporting period, monitoring results, or maintenance performed are significantly different from those predicted, the report shall cover this specifically.

(8) In addition to the other requirements in Section R313-25-33, the licensee shall store, or have stored, manifest and other information pertaining to receipt and disposal of radioactive waste in an electronic recordkeeping system.

(a) The manifest information that must be electronically stored is:

(i) that required in Appendix G of 10 CFR 20.1001 to 20.2402, (2006), which is incorporated into these rules by reference, with the exception of shipper and carrier telephone numbers and shipper and consignee certifications; and

(ii) that information required in Subsection R313-25-33(5).

(b) As specified in facility license conditions, the licensee shall report the stored information, or subsets of this information, on a computer-readable medium.

#### **R313-25-34. Tests on Land Disposal Facilities.**

Licensees shall perform, or permit the Director to perform, any tests the Director deems appropriate or necessary for the administration of the rules in Rule R313-25, including, but not limited to, tests of;

(1) wastes;

(2) facilities used for the receipt, storage, treatment, handling or disposal of wastes;

(3) radiation detection and monitoring instruments; or

(4) other equipment and devices used in connection with the receipt, possession, handling, treatment, storage, or disposal of waste.

**R313-25-35. Director Inspections of Land Disposal Facilities.**

(1) Licensees shall afford to the Director, at reasonable times, opportunity to inspect waste not yet disposed of, and the premises, equipment, operations, and facilities in which wastes are received, possessed, handled, treated, stored, or disposed of.

(2) Licensees shall make available to the Director for inspection, upon reasonable notice, records kept by it pursuant to these rules. Authorized representatives of the Director may copy and take away copies of, for the Director's use, any records required to be kept pursuant to Rule R313-25.

**KEY: radiation, radioactive waste disposal, depleted uranium**

**Date of Enactment or Last Substantive Amendment: October 21, 2014**

**Notice of Continuation: July 1, 2016**

**Authorizing, and Implemented or Interpreted Law: 19-3-104; 19-6-107**

WASTE MANAGEMENT AND RADIATION CONTROL BOARD

Executive Summary

Clean Harbors Grassy Mountain, LLC

October 12, 2017

<p><b>What is the issue before the Board?</b></p>	<p>Clean Harbors Grassy Mountain, LLC has requested a site-specific treatment variance from the Utah Hazardous Waste Management Rules. The Grassy Mountain Facility seeks authorization to stabilize a High Mercury – Subcategory Inorganic waste stream that has the characteristic waste code D009. The treated waste will then be disposed in a hazardous waste cell at the facility.</p>
<p><b>What is the historical background or context for this issue?</b></p>	<p>The Grassy Mountain Facility proposes to stabilize and dispose of a mercury waste stream that is generated at the Clean Harbors Aragonite Facility and carries the waste code for High Mercury-Inorganic Subcategory. The waste stream, profile number AGGM912669HHGB, is generated from the baghouse in the air pollution control system at the Aragonite Facility.</p> <p>The technology-based treatment code for this material is RMERC (roasting/retorting followed by recovery). The RMERC process generates a secondary waste stream. Secondary waste streams, when greater than, or equal to, 260 mg/kg total mercury, are required to be further stabilized to a level of 0.20 mg/l using the toxicity characteristic leaching procedure (TCLP). Secondary waste streams, when less than 260 mg/kg total mercury, are required to be treated to 0.025 mg/l TCLP. The Grassy Mountain Facility proposes to treat all of the waste, regardless of the initial concentration of mercury, to the more restrictive standard of 0.025 mg/L, based on the TCLP.</p> <p>The Grassy Mountain Facility is proposing to treat the waste directly with a stabilization method rather than going through the initial retorting or roasting of the waste. The hardship for Clean Harbors is that there currently is no alternative for the company to dispose of this waste. Facilities that can retort the waste stream are not permitted to treat waste that has waste codes not associated with mercury and this particular waste stream has numerous codes in addition to the code for mercury.</p> <p>The Grassy Mountain Facility has conducted a treatability study on the waste stream. The treatment formula developed for this waste stream resulted in mercury concentrations below the requested concentration of 0.025 mg/L TCLP. In addition, LDR compliance will be met with all other waste codes associated with the waste prior to disposal.</p> <p>The Board has approved identical site-specific treatment variances in March 2009, November 2010, June 2013 and November 2015.</p>

	<p>A notice for public comment was published in the July 27, 2017 issues of <i>The Salt Lake Tribune</i>, <i>The Deseret News</i> and <i>The Tooele Transcript Bulletin</i>. The comment period began on July 27, 2017 and concluded on August 28, 2017. No comments were received.</p> <p>This variance, if granted, will be valid until October 12, 2018.</p>
<b>What is the governing statutory or regulatory citation?</b>	<p>Variances are provided for in 19-6-111 of the Utah Solid and Hazardous Waste Act and R315-260-19 of the Utah Administrative Code. This is a site-specific variance from an applicable treatment standard as allowed by R315-268-44(h)(2).</p>
<b>Is Board action required?</b>	<p>Yes, this is an action item.</p>
<b>What is the Division Director's recommendation?</b>	<p>It is the Division Director's recommendation that the Board approve this request for the site-specific treatment variance for the high mercury waste stream.</p>
<b>Where can more information be obtained?</b>	<p>For technical questions, please call Ed Costomiris (801) 536-0219. For legal questions, please call Raymond Wixom at (801) 536-0290.</p> <p><b>A copy of the Request for a Site-Specific Treatment Variance for High Mercury – Inorganic Subcategory (DSHW-2017-005229) was enclosed in the August 10, 2017 Board Packet.</b></p>

WASTE MANAGEMENT AND RADIATION CONTROL BOARD  
 Executive Summary  
 REQUEST FOR A SITE-SPECIFIC TREATMENT VARIANCE  
 EnergySolutions LLC  
 October 12, 2017

<p><b>What is the issue before the Board?</b></p>	<p>On September 27, 2017, EnergySolutions LLC submitted a request for a site-specific treatment variance from the Utah Administrative Code to treat by stabilization, waste containing High- Subcategory Mercury.</p>
<p><b>What is the historical background or context for this issue?</b></p>	<p>EnergySolutions requests approval to receive and dispose, in its Mixed Waste Landfill Cell, waste containing the D009 or U151 for High Mercury-Organic Subcategory and High Mercury-Inorganic Subcategory hazardous waste codes that has been treated using stabilization/amalgamation technologies.</p> <p>Furthermore, EnergySolutions will perform the stabilization/amalgamation treatment on D009 and U151 High Mercury Subcategory waste streams that have not been treated prior to arrival at the EnergySolutions Clive facility. All actions will be performed in accordance with EnergySolutions' State-issued Part B Permit.</p> <p>The listed treatment technology in UAC R315-268.40 for the D009 High Mercury-Organic Subcategory is either incineration (IMERC) or retorting/roasting for mercury recovery (RMERC). The listed treatment technology for the D009 High Mercury-Inorganic Subcategory and for U151 is RMERC.</p> <p>The need and justification for this action are as follows:</p> <p>The intent of the RMERC treatment process is to recover elemental mercury for recycling. However, radioactive mercury cannot be recycled and the RMERC process generates secondary waste (radioactive elemental mercury) which requires additional treatment by amalgamation (a stabilization technology) prior to disposal.</p> <p>The IMERC technology is also intended to be a mercury recovery technology where the waste is incinerated and the mercury recovered in the ash or in a specific off-gas control system. For radioactive mercury, both the ash and the control equipment/media will require further treatment. Furthermore, IMERC involves an extra handling step for the radioactive residue.</p> <p>Successful chemical stabilization of High Mercury-Inorganic Subcategory wastes has been demonstrated to achieve a measure of performance equivalent to the required methods which require two treatment methods (RMERC and stabilization) with no detrimental effect</p>

	<p>to human health or the environment.</p> <p>The U.S. Environmental Protection Agency (US EPA) has issued a Determination of Equivalent Treatment (DET) for these High Mercury Subcategory wastes that were chemically stabilized. In the EPA’s determination, the agency concluded that for waste streams that are radioactive and contain mercury, the recovery portion of RMERC may not be appropriate and that alternative treatment processes should be pursued.</p> <p>The EPA has reviewed the treatment of mercury-bearing waste in a Federal Register Notice (68 FR 4481). In this notice, the EPA concluded that treatment of mercury waste is possible and it is suggested that stakeholders should use the site specific treatment variance process to achieve approval for the treatment of high subcategory mercury wastes. The notice specifically designates an example of when this would be appropriate as the case of a high mercury subcategory waste that is also radioactive.</p> <p>This variance request consists of waste that may be shipped to EnergySolutions over the next year. To date, EnergySolutions has disposed of approximately 10,600 cubic feet of treated High Mercury Subcategory waste. From knowledge of the current market of High Mercury Subcategory Waste requiring treatment or disposal and from past experience receiving this type of waste, EnergySolutions anticipates less than 500 cubic feet of additional High Mercury Subcategory waste for disposal in the next year under this treatment variance.</p> <p>A notice for public comment was published in the <i>Salt Lake Tribune</i>, the <i>Deseret News</i> and the <i>Tooele County Transcript Bulletin</i> on October 5, 2017. The comment period began October 5, 2017, and will end November 6, 2017.</p>
<p><b>What is the governing statutory or regulatory citation?</b></p>	<p>Variations are provided for in 19-6-111 of the Utah Solid and Hazardous Waste Act. This is a one-time site-specific variance from an applicable treatment standard as allowed by UAC R315-268.44.</p>
<p><b>Is Board action required?</b></p>	<p>No. This is an informational item before the Board.</p>
<p><b>What is the Division/Director’s recommendation?</b></p>	<p>The Director will provide a recommendation at the next Board meeting.</p>
<p><b>Where can more information be obtained?</b></p>	<p>For technical questions, please contact Otis Willoughby (801) 536-0220. For legal questions, please contact Bret Randall at (801) 536-0284.</p>

SEP 27 2017

**ENERGYSOLUTIONS**

DSHW-2017-008186

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SEP 27 2017

DEPARTMENT OF  
ENVIRONMENTAL QUALITY

CD17-0223

September 27, 2017

Mr. Scott T. Anderson  
Director  
Division of Waste Management and Radiation Control  
195 North 1950 West  
Salt Lake City, UT 84114-4880

Subject: EPA ID Number UTD982598898 ✓ Request for a Site-Specific Treatment  
Variance for Wastes Containing High-Subcategory Mercury

Dear Mr. Anderson:

EnergySolutions hereby requests a variance to receive an exemption from Utah Administrative Code (UAC) R315-268-40(a)(3) for wastes that are characterized with hazardous waste codes D009 or U151, High Mercury-Organic Subcategory or High Mercury-Inorganic Subcategory. This request is submitted in accordance with the requirements of UAC R315-260-19.

The regulatory requirement authorizing this request is found in UAC R315-268-44 which allows a site-specific variance from an applicable treatment standard provided that the following condition is met:

*UAC R315-268-44(h)(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible.*

EnergySolutions requests approval to receive and dispose, in EnergySolutions' Mixed Waste Landfill Cell, waste containing the D009 or U151 High Mercury-Organic Subcategory and High Mercury-Inorganic Subcategory hazardous waste codes that have been treated using stabilization/amalgamation technologies. EnergySolutions will perform the stabilization/amalgamation treatment on D009 and U151 High Mercury Subcategory waste streams that have not been treated prior to arrival at the EnergySolutions Clive facility. At the time of disposal, the waste will be verified to have a mercury concentration less than 0.2 mg/L using the Toxicity Characteristic Leaching Procedure (TCLP) or less than 0.25 mg/L TCLP if the waste is a soil matrix. All actions will be performed in accordance with EnergySolutions' state-issued Part B Permit.

The D009 High Mercury-Organic Subcategory is described in the “Treatment Standards for Hazardous Waste” table in 40 CFR 268.40 (incorporated into UAC R315-268-40 by reference). The description is as follows:

*Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that also contain organics and are not incinerator residues. (High Mercury-Organic Subcategory)*

Likewise, the D009 High Mercury-Inorganic Subcategory’s description is as follows:

*Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues and residues from RMERC. (High Mercury-Inorganic Subcategory)*

The U151 hazardous waste code does not delineate between organic or inorganic; the description simply states the following:

*U151 (mercury) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.*

The listed treatment technology in 40 CFR 268.40 for the D009 High Mercury-Organic Subcategory is either incineration (IMERC) or retorting/roasting for mercury recovery (RMERC). The listed treatment technology for the D009 High Mercury-Inorganic Subcategory and for U151 is RMERC.

The need and justification for this action are as follows:

- The intent of the RMERC treatment process is to recover elemental mercury for recycling. However, radioactive mercury cannot be recycled and the RMERC process generates secondary waste (radioactive elemental mercury) which requires additional treatment by amalgamation (a stabilization technology) prior to disposal.
- The IMERC technology is also intended to be a mercury recovery technology where the waste is incinerated and the mercury recovered in the ash or in a

specific off-gas control system. For radioactive mercury, both the ash and the control equipment/media will require further treatment. Furthermore, IMERC involves an extra handling step for the radioactive residue.

- Both IMERC and RMERC are described in Table 1 of UAC R315-268-42. Both descriptions state that

*[A]ll wastewater and nonwastewater residues derived from this process must then comply with the corresponding treatment standards per waste code with consideration of any applicable subcategories (e.g., High or Low Mercury Subcategories).*

For RMERC, this treatment standard is explained as an additional D009 subcategory:

*[N]onwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain less than 260 mg/kg total mercury and that are residues from RMERC only.*

The Land Disposal Restriction (LDR) treatment standard for this subcategory is 0.2 mg/L TCLP (or 0.25 mg/L TCLP alternative treatment standard for contaminated soil described in UAC R315-268-49). For IMERC, the ash and/or control equipment media will be a newly generated hazardous waste and would therefore be required to meet the LDR treatment standard for mercury of 0.2 mg/L. The disposal standard proposed by EnergySolutions meets the LDR TCLP concentration in a single step.

- Successful chemical stabilization of High Mercury-Inorganic Subcategory wastes has been demonstrated to achieve a measure of performance equivalent to the required methods which require two treatment methods (RMERC and stabilization) with no detrimental effect to human health or the environment. The U.S. Environmental Protection Agency (US EPA) has issued a Determination of Equivalent Treatment (DET) for these High Mercury Subcategory wastes that were chemically stabilized. In the EPA's determination, they concluded that for waste streams that are radioactive and contain mercury, the recovery portion of RMERC may not be appropriate and that alternative treatment processes should be pursued. A copy of this letter is attached for reference.

- The US EPA has reviewed the treatment of mercury-bearing waste in a Federal Register Notice (68 FR 4481). In this notice, the US EPA concluded that treatment of mercury waste is possible and it is suggested that stakeholders should use the site specific treatment variance process to achieve approval for the treatment of high subcategory mercury wastes. The notice specifically designates an example of when this would be appropriate as the case of a high mercury subcategory waste that is also radioactive.
- EnergySolutions has requested similar site-specific treatment variances for High Mercury Subcategory waste in letters dated November 21, 2001; October 21, 2003; April 28, 2004; November 8, 2004; November 29, 2005; December 20, 2006; January 25, 2008; January 20, 2009; January 27, 2010; February 15, 2011; March 21, 2012; March 7, 2013; March 4, 2014; and April 21, 2016. These variance requests were approved on January 8, 2002; December 11, 2003; June 10, 2004; January 13, 2005; January 12, 2006; February 8, 2007; March 13, 2008; March 12, 2009; April 8, 2010; May 12, 2011; May 10, 2012; April 11, 2013; April 10, 2014; and June 9, 2016, respectively.
- Over the years that this variance has been granted, EnergySolutions and generators have consistently been successful at treating high subcategory mercury to LDR compliant levels.

This variance request consists of waste that is expected to be disposed by EnergySolutions over the next year. To date, EnergySolutions has disposed of approximately 10,600 cubic feet of treated High Mercury Subcategory waste. From knowledge of the current market of High Mercury Subcategory Waste requiring treatment or disposal, and from past experience receiving this type of waste, EnergySolutions anticipates less than 500 cubic feet of additional High Mercury Subcategory waste for disposal in the next year under this treatment variance.

EnergySolutions requests that a variance be granted to allow the receipt and disposal of High Mercury Subcategory waste that has been treated either to the 0.2 mg/L TCLP standard for hazardous waste or the 0.25 mg/L TCLP standard for contaminated soil.

The name, phone number, and address of the person who should be contacted to notify EnergySolutions of decisions by the Director is:



Mr. Scott T. Anderson  
CD17-0223  
September 27, 2017  
Page 5 of 5

Mr. Vern Rogers  
Manager, Compliance and Permitting  
EnergySolutions LLC  
299 South Main Street, Suite 1700  
Salt Lake City, UT 84111  
(801) 649-2000

Should there be any questions to this request, please contact me at (801) 649-2144.

Sincerely,

A handwritten signature in black ink, appearing to read "Timothy L. Orton". The signature is fluid and cursive.

Timothy L. Orton, P.E.  
Environmental Engineer

cc: Don Verbica, DWMRC

enclosure

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Generator: Brookhaven National Laboratory  
Generator # / Waste Stream #: ~~8000-22~~ 2016-21 JZ4  
Waste Stream Name: BNL Treated Mercury Soil

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

OFFICE OF  
SOLID WASTE AND EMERGENCY  
RESPONSE

Mr. George J. Malosh  
U.S. Department of Energy  
Brookhaven Group Building 464  
Upton, NY 11973-5000

Dear Mr. Malosh:

EPA has reviewed your request for a determination of equivalent treatment as authorized by 40 CFR 268.40(b) for the mercury contaminated waste from your facility that will be the subject of treatability studies.

Based on the information provided in your application and conversations between your staff and mine, EPA is approving the request for a determination of equivalent treatment. EPA agrees that RMERC is not appropriate for this waste, due to the generation of elemental mercury that is contaminated with radioactive materials and that has no current use via recycling. Instead, the facility will need to meet a replacement concentration-based treatment standard for this waste, which is detailed in the enclosed determination. This standard does not replace any other applicable federal, state, or local requirements as specified in the facility's waste analysis plan. Additionally, all wastes subject to this determination must be disposed at a facility permitted to accept the radioactive elements present in the waste following treatment.

Enclosed you will find our determination on your request. If you need further assistance, please contact John Austin, Waste Treatment Branch (703/308-0436).

Sincerely yours,

Elizabeth A.  
Cotsworth, Acting  
Director  
Office of Solid  
Waste

Enclosure

cc: Jim Thompson, OWPE  
RCRA Hotline

Generator: Brookhaven National Laboratory  
Generator # / Waste Stream #: ~~8444-24-614~~ 724  
Waste Stream Name: BNL Treated Mercury Soil  
Determination of Equivalent Treatment  
40 CFR 268.42(b)  
Notification of Acceptance

Notification Number: OSW-DE016-0698

Requesting Facility: Brookhaven National Laboratory

Facility Address: U. S. Department of Energy  
Brookhaven Group Building 464  
Upton, NY 11973-5000

EPA Facility ID #: NY7890008975

Facility Representatives: Gail Penny, Project Manager  
(516)344-3229; Email: gpenny@bnl.gov

Glen Todzia, Project Engineer  
(516)344-7488

Date of Request: July 1, 1998

Waste Description for Which Replacement Standard is Sought:

The subject wastes consist of (a) treatability samples totaling 4990 kg of RCRA characteristic mercury- and radioactive-contaminated soils and (b) an unspecified amount of residues and newly generated wastes resulting from multiple treatability studies on these samples. The treatability samples are soils that are mostly sand but contain some gravel. Approximately 5% of the treatability sample wastes consists of pieces of glass, metal, and plastic. A summary waste description is given in Table 1.

The subject waste soils were excavated in 1997 from a former land disposal area ("Chemical Holes Area") for miscellaneous laboratory wastes at Brookhaven National Laboratory, in Long Island, New York. The retrieval was performed as a CERCLA removal action. Segregation of the excavated waste into two waste streams was performed by sieving with a 2-inch sieve as the waste was excavated. Only materials that passed through the 2-inch sieve are the subject of the planned treatability studies.

Basis of Request:

The subject mercury-contaminated waste soils (above 260 ppm mercury) are also contaminated with low levels of radioactive materials. The LDR technology specific treatment standard for this waste is RMERC (retorting or roasting with recovery of the mercury for reuse). Retorting or

roasting of the waste is inappropriate because any mercury recovered would still be contaminated with radioactive materials, which would prohibit its recycle or reuse as elemental mercury. The

Table 1. Initial Waste Descriptions

Waste Container ID	Approximate Volume (yd <sup>3</sup> )	Approximate Weight (kg)	Total Mercury Concentration (mg/kg)	TCLP Mercury Concentration (mg/l)	Primary Mercury Species	Other RCRA Constituents that exceed TC Regulatory Levels or are Listed Wastes	Waste Description and Treatment/Regulatory Subcategory	Assigned EPA Waste Code	Applicable LDR Treatment Standard
Bin 1	2	2495	16750	3.56	Elemental*	None Identified	Nonwastewater, High Mercury Subcategory*	D009	RMERC
Bin 2	2	2495	18,000	0.263	Elemental*	None Identified	Nonwastewater, High Mercury Subcategory*	D009	RMERC 1. Determined by visual inspection.

2. Nonwaste waters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW 846 Method 1310; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including residues from RMERC.

elemental mercury would therefore require further treatment (amalgamation) prior to its ultimate disposal. The subject wastes are proposed to be treated by a variety of methods as part of a treatability study to evaluate treatment options for other legacy wastes within the U. S. Department of Energy (DOE) complex.

DOE has requested a Determination of Equivalent Treatment for the treated treatability study samples and any newly generated >260 ppm Hg wastes that may result from these treatability studies (i.e., treatment residues). The proposed waste disposal location for the treatability study wastes that meet the assigned substitute treatment standard (and any other applicable LDR waste treatment standards) is the Envirocare of Utah, Clive, Utah, low level radioactive waste landfill. Alternatively, the DOE Hanford Site, Richland, Washington low level radioactive waste landfill

Generator: Brookhaven National Laboratory  
 Generator # / Waste Stream #: ~~8446-00~~ 2076 01 JLN  
 Waste Stream Name: BNL Treated Mercury Soil

may be used. Other landfills that become available in the future and that meet all EPA and other agency requirements (e.g., NRC, DOE, or State) for disposal of such waste may also be considered. In the absence of the requested DET replacement standard, all treatment residues would have to be re-treated by retorting or roasting. Any recovered mercury would have to be amalgamated prior to disposal as low level radioactive waste.

EPA is requested to assign a replacement mercury treatment standard of 0.2 mg/kg TCLP to these treated treatability samples and any resulting newly generated treatment residues. The treated samples and newly generated wastes from the treatability study would still be required to meet applicable existing LDR treatment standards for underlying hazardous constituents other than mercury.

Previously Applicable Treatment Standard for Which Equivalency is Granted:

Waste codes of concern			Nonwastewater
D009	Non wastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues from RMERC (High Mercury Inorganic Subcategory	Mercury	RMERC

3

Replacement Treatment Standards:

Waste codes of concern			Nonwastewater
D009	Non wastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including	Mercury	0.20 mg L TCLP

Generator: Brookhaven National Laboratory  
Generator # / Waste Stream #: 0408-22 6246-01  
Waste Stream Name: BNL Treated Mercury Soil

incinerator residues from RMERC (High  
Mercury Inorganic Subcategory

Compliance with these standards, as approved below, does not relieve the facility from compliance with any other applicable treatment standards associated with these wastes. This standard does not replace any other applicable federal, state, or local requirements as specified in the facility's waste analysis plan. Additionally, all wastes subject to this determination must be disposed at a facility permitted to accept the radioactive elements present in the waste.

#### Authorities and References:

A Determination of Equivalent Treatment is governed by 40 CFR 268.42(b), which states: "(b) Any person may submit an application to the Administrator demonstrating that an alternative treatment method can achieve a measure of performance equivalent to that achieved by methods specified in paragraphs (a), (c), and (d) of this section.... The applicant must submit information demonstrating that his treatment method is in compliance with federal, state, and local requirements and is protective of human health and the environment. On the basis of such information and any other available information, the Administrator may approve the use of the alternative treatment method if he finds that the alternative treatment method provides a measure of performance equivalent to that achieved by methods specified in paragraphs (a), (c), and (d) of this section. Any approval must be stated in writing and may contain such provisions and conditions as the Administrator deems appropriate. The person to whom such approval is issued must comply with all limitations contained in such a determination."

The above provision was further clarified in the preamble for the Land Disposal Restriction for Third Third Scheduled Wastes: Final Rule. 55 FR at 22536, (June 1, 1990) as follows: "when EPA requires the use of a technology (or technologies), a generator or treater may demonstrate that an alternative treatment method can achieve the equivalent level of

4

performance as that of the specified treatment method [40 CFR 268.42(b)]. This demonstration is typically both waste-specific and site-specific and may be based on: (1) the development of a concentration based standard that utilized a surrogate or indicator compound that guarantees effective treatment of the hazardous constituents; (2) the development of a new analytical method for quantifying the hazardous constituents, and (3) other demonstrations of equivalence for an alternative method of treatment based on a statistical comparison of technologies, including a comparison of specific design and operating parameters."

Justification for the Equivalent Treatment Standard:

In the context of this treatability study situation, roasting or retorting and recovery of mercury (RMERC) from High Mercury-Inorganic nonwastewater wastes does not appear to be an appropriate treatment method if the wastes are also radioactive. This is because the recovered mercury is expected to be still classified as radioactive material and as such will not be recyclable but will require further treatment prior to its ultimate disposal. Therefore, the earlier recovery step appears not to serve a useful purpose in this particular mixed waste context, and would involve additional waste handling with the attendant concerns about potential exposure to radionuclides. The requested replacement standard for the limited quantity of waste to be subject to the treatability studies is the current LDR concentration-based treatment standard for Low Mercury-Inorganic nonwastewaters that have undergone RMERC, 0.20 mg/L TCLP. Therefore, the wastes will be subject to treatment standards equivalent to those for the residues of the RMERC process, but without having to first undergo a non-useful RMERC step. This is an appropriate measure of equivalent performance and is sufficiently protective of human health and the environment in this particular situation.

Based upon the information submitted, the factors identified above, and the conditions for treatment and disposal set out above, I have determined that the petition for Determination of Equivalent Treatment submitted by DCE on May 20, 1998 is hereby granted, effective upon my signature.

Dated:

Elizabeth A. Cotsworth, Acting Director  
 Office & Solid Waste

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Attachment I - Analytical Data for Wastes to be Subjected to the Treatability Studies

B-25 Container #1

Parameter	Concentration
Mercury (total)	6750 mg/kg
Mercury (TCLP)	5.56 mg/L
Gross Alpha	4560 pCi/g
Gross Beta	525 pCi/g
Plutonium - 238	72.6 pCi/g
Plutonium - 239/240	19.7 pCi/g

Generator: Brookhaven National Laboratory J-4  
 Generator # / Waste Stream #: ~~8008-23~~ / ~~10~~ / ~~01~~  
 Waste Stream Name: BNL Treated Mercury Soil

Americium - 241	7140 pCi/g
Strontium - 90	2.15 pCi/g

B-25 Container #2

Parameter	Concentration
Mercury (total)	18,000 mg/kg
Mercury (TCLP)	0.263 mg/L
Gross Alpha	24.9 pCi/g
Gross Beta	35.9 pCi/g
Plutonium - 238	7.06 pCi/g
Plutonium - 239/240	5.87 pCi/g
Americium - 241	28.67 pCi/g
Strontium - 90	35.5 pCi/g

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Attachment 2- DOE Description of Treatment Technologies to be Included in Treatability Studies

The DOE Mixed Waste Focus Area (MWFA) Mercury Contamination Product Line Mercury Working Group (HgWG) is sponsoring demonstrations of alternative advanced technologies for treating toxicity characteristic mixed waste containing more than 260 ppm total mercury concentrations to determine which technologies can produce stable products for disposal that are acceptably protective of human health and the environment. The initial wastes and the final waste forms are to be tested using TCLP to determine if the final waste forms are no longer toxicity characteristic hazardous waste, meet the applicable replacement LDR treatment standard for mercury, and meet any other LDR waste treatment standards determined to be applicable for this waste. Informational testing to provide additional data for use by EPA will also be conducted, including measurement of mercury vapor pressure over the final waste forms, and selected additional leaching tests to be determined in coordination with EPA Office of Solid Waste. EPA's contractor Professor David Kosson (Rutgers University), Brookhaven National Laboratory (BNL), and the MWFA/HgWG.

### Mercury Stabilization

A BNL sulfur polymer cement process will be one of the mercury stabilization processes demonstrated.

Commercial vendors will also be contracted to perform stabilization demonstrations. These vendors will be selected by the HgWG through an open bidding process. Each stabilization process will have been previously demonstrated on wastes or surrogates with less than 260 ppm total mercury concentration.

### Mercury Separation

A mercury separation technology may be included in the demonstration tests. A candidate process uses a potassium iodide/iodine leaching solution to solubilize and remove mercury. The mercury is recovered as elemental mercury and amalgamated for disposal. The extractants are recovered and recycled. This process has already been demonstrated for mercury levels below 260 ppm.

### Mercury Retort and Amalgamation

For comparison with the results of the advanced separation and stabilization technologies, an additional feasibility study will be performed using a mobile commercial vacuum retort unit to thermally desorb mercury. The recovered mercury will be amalgamated for disposal. This will be the baseline technology to satisfy the existing LDR treatment standard (RMERC) for High Mercury Inorganic Subcategory waste and the amalgamation (AMALG) treatment standard for radioactive elemental mercury waste. Amalgamation will be by commercially available processes or by an advanced sulfur-polymer-cement process developed and used at BNL.

WASTE MANAGEMENT AND RADIATION CONTROL BOARD  
 Executive Summary  
 REQUEST FOR A SITE-SPECIFIC TREATMENT VARIANCE  
 EnergySolutions LLC  
 October 12, 2017

<p>What is the issue before the Board?</p>	<p>On September 27, 2017, EnergySolutions LLC submitted a request for a one-time site-specific treatment variance from the Utah Administrative Code. EnergySolutions seeks authorization receive Cemented Uranium Extraction Process Residues for disposal.</p>
<p>What is the historical background or context for this issue?</p>	<p>The Mixed Waste Facility proposes to receive up to 1,000 cubic feet of cemented monoliths containing enriched uranium residuals.</p> <p>This material retains hazardous waste codes for barium, cadmium, chromium, lead and spent solvents. The generator has encapsulated the waste in concrete for security reasons.</p> <p>EnergySolutions proposes to receive this waste for macroencapsulation in the Mixed Waste Landfill Cell rather than chemical stabilization, as required. This request is based on the fact that the waste has already been encapsulated in concrete at the generator’s site. Treating this waste by the required method would mean grinding the waste and potentially exposing workers to unnecessary contamination.</p> <p>The proposed treatment will further encapsulate the waste and protect it from contact with precipitation, thereby decreasing the potential of leaching.</p> <p>A notice for public comment was published in the <i>Salt Lake Tribune</i>, the <i>Deseret News</i> and the <i>Tooele County Transcript Bulletin</i> on October 5, 2017. The comment period began October 5, 2017, and will end November 6, 2017.</p>
<p>What is the governing statutory or regulatory citation?</p>	<p>Variances are provided for in 19-6-111 of the Utah Solid and Hazardous Waste Act. This is a one-time site-specific variance from an applicable treatment standard as allowed by UAC R315-268.44.</p>
<p>Is Board action required?</p>	<p>No, this is an information item before the Board.</p>
<p>What is the Division/Director’s recommendation?</p>	<p>The Director will provide a recommendation at the next Board meeting.</p>
<p>Where can more information be obtained?</p>	<p>For technical questions, please contact Otis Willoughby (801) 536-0220. For legal questions, please contact Bret Randall at (801) 536-0284.</p>

SEP 27 2017

  
ENERGYSOLUTIONS

DSHW-2017-008188

September 27, 2017

RECEIVED

CD17-0226

SEP 27 2017

DEPARTMENT OF  
ENVIRONMENTAL QUALITYMr. Scott T. Anderson  
DirectorDivision of Waste Management and Radiation Control  
195 North 1950 West  
Salt Lake City, UT 84114-4880Subject: EPA ID Number UTD982598898 - Request for a Site-Specific Treatment  
Variance for Cemented Uranium Extraction Process Residues

Dear Mr. Anderson:

EnergySolutions hereby requests an exemption from the treatment standards described in Utah Administrative Code (UAC) R315-40(a)(2) for uranium extraction process residuals that retain the hazardous waste codes D005 (barium); D006 (cadmium); D007 (chromium); D008 (lead); D030 (2,4-dinitrotoluene); D032 (hexachlorobenzene) and F001, F002, and F005 (spent solvents) and are encased in cement. This exemption is requested for the purposes of safety, security, and transportation of the radioactive waste. This request is submitted in accordance with the requirements of UAC R315-260-19.

The regulatory requirement authorizing this request is found in UAC R315-268-44 which allows a site-specific variance from an applicable treatment standard provided the following condition is met:

*UAC R315-268-44(h)(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard, or by the method specified as the treatment standard, even though such treatment is technically possible.*

This variance is being requested for approximately 1,000 cubic feet of cemented uranium extraction process residuals from EnergySolutions generator 9061-06. The waste is generated as part of a uranium recovery process that involves creating an enriched uranium contaminated ash through a thermal process and then recovering the enriched uranium through an organic solvent extraction process. The residual waste from this extraction system is collected in small cans (~ 2 ½ gallons each) and stored at the generator's facility. The process residuals within these cans are in the form of an ash generated through this process. The process residuals within the cans have been characterized through a random sampling and analysis process. At the beginning of this

campaign, approximately 2,000 cans of process residues were collected and stored by the generator. The process is ongoing and additional cans are being generated every year. Further, due to safety concerns, some of the cans are being split prior to the repackaging process described below; thereby generating more total material for disposal than originally anticipated.

F-listed solvent codes within this waste are derived from rags that are burned in a furnace in order to recover the uranium present within them. None of the F-listed constituents were present above Universal Treatment Standard (UTS) concentrations within the random characterization samples of the process residues. The random characterization samples were also analyzed for metals using the Toxicity Characteristic Leaching Procedure (TCLP). These samples detected elevated concentrations of barium (up to 6,740 mg/L TCLP), cadmium (up to 16.4 mg/L TCLP), chromium (up to 15.2 mg/L TCLP), and lead (up to 10.5 mg/L TCLP). Based on these elevated metal concentrations, the characteristic waste codes D005, D006, D007, and D008 were applied to the process residue. Slightly elevated concentrations of 2,4-dinitrotoluene (D030) and hexachlorobutadiene (D032) were also detected in separate analyses. The residue may potentially contain these codes also.

The uranium content within the process residues is enriched. From a health and safety standpoint, the enrichment makes the waste more hazardous to employees managing the waste. Further, enriched material has increased security concerns and must be managed appropriately. To ensure the enriched uranium concentration limits required for worker safety, security, and transportation of this waste are met, appropriate packaging procedures were created and are currently being utilized at the generator's facility. These packaging procedures include repackaging the cans into 16-gallon drums and filling the void spaces with cement; formal treatment for the elevated metals concentrations is not performed during this process. The generator has assessed other options, including treatment for the hazardous constituents; however, additional processing introduced unacceptable hazards from a health and safety, and security viewpoint. Additionally, the waste within the cans is inherently safe from a criticality aspect and the generator concluded that it is unwise to perform extra processing that could potentially change this aspect. Furthermore, encasing enriched uranium within concrete is the preferred method of stabilization as recommended by the Nuclear Regulatory Commission (NRC). The waste material packaged in these 16-gallon monolithic forms is inherently safe and is the form that will be shipped and received at the EnergySolutions Clive facility.

The characteristic hazardous waste codes associated with the process residues has numerical concentration-based treatment standards based upon the leachability of the

contaminants. Treatment of the monolithic form for these concentration-based treatment standards would entail a process that includes shredding of the monolith followed by mixing with a stabilizing reagent in a permitted mixer. Both of these steps could mobilize the enriched uranium and possibly cause airborne contamination, increasing the potential for releases to the environment as well as the potential for personnel exposure; thereby violating radiation protection (ALARA) principles. Also, the shredding of the solidified uranium ash results in a more accessible form of enriched uranium with potential security ramifications.

EnergySolutions proposes to macroencapsulate the waste, thereby isolating the waste from potential leaching media. Macroencapsulation is a permitted process utilized at the Clive facility that significantly reduces the potential for migration (leaching) of waste. Macroencapsulation requires less handling of the waste and creates a waste form for disposal that is protective of human health and the environment. Macroencapsulation also adds a further level of security restricting access to the enriched uranium.

In summary, a variance should be granted based upon three considerations:

1. for both health and security reasons, enriched uranium concentration within the waste precludes actual treatment of the waste;
2. processing this waste in preparation for stabilization treatment would increase worker exposures and the potential for releases to the environment; and
3. the leachability of the waste would be significantly reduced through macroencapsulation, thereby protecting human health and the environment.

EnergySolutions requested this same variance for this generator in letters dated July 20, 2007; July 28, 2008; July 15, 2009; July 15, 2010; July 28, 2011; August 13, 2012; July 15, 2013; July 25, 2015; November 4, 2015; and October 27, 2016. These previous requests were approved on September 13, 2007; September 13, 2008; September 10, 2009; September 9, 2010; September 8, 2011; September 13, 2012; September 12, 2013; August 14, 2014; December 10, 2015; and January 12, 2017, respectively.

Shipments began in April, 2008 and have been relatively continuous since that time. Since the last variance was approved, EnergySolutions has received approximately 850 cubic feet of this waste (the 16-gallon monoliths). EnergySolutions has received approximately 7,450 cubic feet of this waste since the first variance approval in 2008.



Mr. Scott T. Anderson  
CD17-0226  
September 27, 2017  
Page 4 of 4

This variance request is for the ongoing processing and disposal of additional uranium extraction process residues created by the generator.

EnergySolutions requests that a variance be granted to allow the receipt, macroencapsulation treatment and disposal of approximately 1,000 cubic feet of cemented uranium extraction process residuals that retain hazardous waste codes. Upon approval of this variance, the monolithic waste will be managed as debris.

The name, phone number, and address of the person who should be contacted to notify EnergySolutions of decisions by the Director is:

Mr. Vern C. Rogers  
Manager, Compliance and Permitting  
EnergySolutions LLC  
299 South Main Street, Suite 1700  
Salt Lake City, UT 84111  
(801) 649-2000

Should there be any questions to this request, please contact me at 801-649-2144.

Sincerely,

A handwritten signature in black ink, appearing to read "Timothy L. Orton". The signature is fluid and cursive.

Timothy L. Orton, P.E.  
Environmental Engineer and Manager

cc: Don Verbica, DWMRC

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WASTE MANAGEMENT AND RADIATION CONTROL BOARD  
 Executive Summary  
 REQUEST FOR A SITE-SPECIFIC TREATMENT VARIANCE  
 EnergySolutions LLC  
 October 12, 2017

<p><b>What is the issue before the Board?</b></p>	<p>On September 27, 2017, EnergySolutions LLC submitted a request for a site-specific treatment variance from the Utah Administrative Code to dispose of waste containing hazardous constituents and PCBs as Underlying Hazardous Constituents.</p>
<p><b>What is the historical background or context for this issue?</b></p>	<p>This variance is being requested for up to approximately 50 tons of waste generated at the Clive Mixed Waste Facility (site-generated waste) that may be circumstantially contaminated with PCBs from operations at the site.</p> <p>Examples of site-generated wastes include baghouse dust, sump clean-out material and decontamination sludges. Site activities involving PCBs include, but are not limited to, repackaging waste containers and shredding PCB capacitors.</p> <p>Analysis of site-generated waste over the last year has detected PCB concentrations up to 27 ppm (mg/kg). The UTS concentration for PCBs is 10 mg/kg. Over the past several years, approximately 13 tons of this type of waste was generated and treated at the Clive Facility. Analytical data demonstrated that all contaminants, except PCBs, met treatment standards in these treatment runs. EnergySolutions has for many years' data demonstrated that the treatment formulas developed for site-generated waste have successfully treated the wastes.</p> <p>PCB waste generated at the site which is greater than 50 ppm is regulated by the Environmental Protection Agency (EPA) as PCB remediation waste. The EPA has clarified the disposal of PCB remediation waste with a concentration greater than 50 ppm PCBs in 40 CFR 761.61 (a)(5)(i)(B)(2)(iii) as follows:</p> <p>“Bulk PCB remediation wastes with a PCB concentration &gt;50 ppm shall be disposed of in a hazardous waste landfill permitted by EPA under section 3004 of RCRA, or by a State authorized under section 3006 of RCRA”</p> <p>The mixed waste landfill is a hazardous waste landfill permitted by the State of Utah. Consequently, if the PCB waste did not contain hazardous waste codes, but contained the same PCB concentrations, it could be disposed in the mixed waste landfill without additional treatment. Therefore, treatment of the PCBs within this waste stream is technically not required for final disposal of the waste form.</p>

	A notice for public comment was published in the <i>Salt Lake Tribune</i> , the <i>Deseret News</i> and the <i>Tooele County Transcript Bulletin</i> on October 5, 2017. The comment period began October 5, 2017, and will end November 6, 2017.
<b>What is the governing statutory or regulatory citation?</b>	Variances are provided for in 19-6-111 of the Utah Solid and Hazardous Waste Act. This is a one-time site-specific variance from an applicable treatment standard as allowed by UAC R315-268.44.
<b>Is Board action required?</b>	No. This is an informational item before the Board.
<b>What is the Division/Director's recommendation?</b>	The Director will provide a recommendation at the next Board meeting.
<b>Where can more information be obtained?</b>	For technical questions, please contact Otis Willoughby (801) 536-0220. For legal questions, please contact Bret Randall at (801) 536-0284.

SEP 27 2017

  
ENERGYSOLUTIONS

DSHW-2017-008187

September 27, 2017

CD17-0225

Mr. Scott T. Anderson  
Director  
Division of Waste Management and Radiation Control  
195 North 1950 West  
Salt Lake City, UT 84114-4880

RECEIVED  
SEP 27 2017  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

Subject: EPA ID Number UTD982598898 ✓ – Request for a Site-Specific Treatment  
Variance for Mixed Waste Requiring Treatment with a PCB Underlying  
Hazardous Constituent

Dear Mr. Anderson:

EnergySolutions hereby requests a variance to receive an exemption from Utah Administrative Code (UAC) R315-268-40(a)(3) for waste generated at the Clive facility that carries characteristic and listed hazardous waste codes and also contains Polychlorinated Biphenyls (PCBs) as an Underlying Hazardous Constituent (UHC). This request is submitted in accordance with the requirements of UAC R315-260-19.

The regulatory requirement authorizing this request is found in UAC R315-268-44 which allows a site-specific variance from an applicable treatment standard provided that the following condition is met:

*40 CFR 268.44(h)(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible.*

EnergySolutions requests approval to treat waste containing hazardous contaminants and PCBs and dispose of the treated residual in EnergySolutions' Clive Facility Mixed Waste Landfill Cell (MWLC). The concentration of PCBs within the treated residual will not meet the Universal Treatment Standards (UTS) described in R315-13-1 (40 CFR 268.48 incorporated by reference). All actions requested in this variance will be performed in accordance with EnergySolutions' state-issued Part B Permit.

This variance is being requested for up to approximately 50 tons of waste generated at the Clive Mixed Waste Facility (site-generated waste) that may be circumstantially contaminated with PCBs from operations at the site. Examples of site-generated wastes

include baghouse dust, sump clean-out material, and decontamination sludges. Site activities involving PCBs include, but are not limited to, repackaging waste containers and shredding PCB capacitors. Analysis of site-generated waste over the last year has detected PCB concentrations up to 27 ppm (mg/kg). The UTS concentration for PCBs is 10 mg/kg.

Over the past several years, approximately 13 tons of this type of waste was generated and treated at the Clive Facility. Analytical data demonstrated that all contaminants, except PCBs, met treatment standards in these treatment runs. EnergySolutions has many years' data demonstrating that the treatment formulas developed for site-generated waste has successfully treated the waste.

PCB waste generated at the site which is greater than 50 ppm is regulated by the Environmental Protection Agency (EPA) as PCB remediation waste. The EPA has clarified the disposal of PCB remediation waste with a concentration greater than 50 ppm PCBs in 40 CFR 761.61(a)(5)(i)(B)(2)(iii) as follows:

*Bulk PCB remediation wastes with a PCB concentration  $\geq 50$  ppm shall be disposed of in a hazardous waste landfill permitted by EPA under section 3004 of RCRA, or by a State authorized under section 3006 of RCRA.*

The MWLC is a regulated hazardous waste landfill permitted by the State of Utah. Consequently, if the PCB waste did not contain RCRA hazardous waste codes, but contained the same PCB concentrations, it could be disposed in the MWLC without additional treatment. Therefore, treatment of the PCBs within this waste stream is technically inappropriate and not required for final disposal of the waste form.

This variance was previously requested in letters dated November 17, 2011; March 7, 2013; March 4, 2015; and April 21, 2016. These variance requests were approved on February 9, 2012; April 11, 2013; April 10, 2014; and June 9, 2016, respectively.

EnergySolutions requests that a variance be granted to allow the land disposal of site-generated waste that will be treated to meet all treatment standards except the treatment standard for PCBs.

The name, phone number, and address of the person who should be contacted to notify EnergySolutions of decisions by the Director is:



Mr. Scott T. Anderson  
CD17-0225  
September 27, 2017  
Page 3 of 3

Mr. Vern Rogers  
Manager, Compliance and Permitting  
EnergySolutions LLC  
299 South Main Street, Suite 1700  
Salt Lake City, UT 84111  
(801) 649-2000

Should there be any questions to this request, please contact me at (801) 649-2144.

Sincerely,

A handwritten signature in black ink that reads "Timothy L. Orton". The signature is written in a cursive, flowing style.

Timothy L. Orton, P.E.  
Environmental Engineer

cc: Don Verbica, DWMRC

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

# Proposed Rule Evaluation

presented by *Dan Shrum*  
*WMRC Board Meeting*

*October 12, 2017*  
*Salt Lake City, UT*



*All you need in radioactive and hazardous waste  
management*

# No More Stringent Than

Utah Code Annotated § 19-3-104(7) states:

(7)(a) “Except as provided in Subsection (8), and in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act, the board may not adopt rules, for the purpose of the state assuming responsibilities from the United States Nuclear Regulatory Commission with respect to regulation of sources of ionizing radiation, that are more stringent than the corresponding federal regulations which address the same circumstances.

(b) In adopting those rules, the board may incorporate corresponding federal regulations by reference”

# Examples

## 10 CFR 61.41 States:

Concentrations of radioactive material which may be released to the general environment in **groundwater**, surface water, air, soil, plants, or animals must not result in an annual dose exceeding an equivalent of **25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public**. Reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable.

## UAC R313-25-20 adds:

No greater than **0.04 mSv (0.004 rem)** committed effective dose equivalent or total effective dose equivalent to any member of the public shall come from groundwater.

# Examples

## 10 CFR 61.58 States:

The Commission may, upon request or on its own initiative, authorize other provisions for the classification and characteristics of waste on a specific basis, if, after evaluation, of the specific characteristics of the waste, disposal site, and method of disposal, it finds reasonable assurance of compliance with the performance objectives in subpart C of this part.

UAC R313-25 Did not include this section – the Board was previously petitioned to include this provision but did not act.

# Examples

10 CFR 61.80(c) states:

(c) Records which must be maintained pursuant to this part may be the original or a reproduced copy or a microform if this reproduced copy or microform is capable of producing copy that is clear and legible at the end of the required retention period. **The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period.** Records such as letters, drawings, specifications, must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

UAC R313-33 Does not allow for the more convenient and less burdensome use of technological advances in record archival

# Examples

10 CFR 61.13 Technical Analysis requires licensees to provide specific technical information demonstrating (a) protection of the general population, (b) protection of individuals from inadvertent intrusion, (c) protection of individuals during operations, and (d) long-term stability of the disposal site without ongoing active maintenance.

UAC R313-25-9 includes more stringent requirements for additional analysis

## UAC R313-25-9

When UAC R313-25-9 (R313-25-8 at the time) was passed, the Board claimed that since 10 CFR 61.13 did not contain specific requirements, the Board's additional requirements were not "more stringent" than corresponding federal regulations.

However . . .

# No More Stringent Than

Utah Code Annotated § 19-3-104(8) states:

(8)(a) “The board may adopt rules more stringent than corresponding federal regulations for the purpose described in Subsection [\(7\)](#) **only if it makes a written finding after public comment and hearing and based on evidence in the record that corresponding federal regulations are not adequate to protect public health and the environment of the state**

(b) Those findings shall be accompanied by an opinion referring to and evaluating the public health and environmental information and studies contained in the record which form the basis for the board's conclusion.”

Prior to passing the rules in R313-25-9, there were no studies demonstrating that public health and the environment were not protected by the existing federal rules – in fact.....

## NRC comment on proposed rule

The DRC stated in the Statement of Basis for the proposed rule that “the NRC has recognized the inadequacy of its current regulation”.

The NRC responded to the proposed rule on January 21, 2010:

“Your characterization of NRC’s regulations and conclusions regarding their adequacy is in error. Although the current regulations did not consider the disposal of significant quantities of depleted uranium, they are adequate to ensure the protection of the public health and safety.”

## Board Action

The DRC board voted to pass the changes to R313-25-9 without demonstrating that the existing rules were inadequate. The board made additional changes to R313-25-9 in 2011, again without demonstrating that the existing rules were inadequate.

# Request

We request the Board and the Division of Waste Management and Radiation Control review the findings that are required to have been made PRIOR to promulgating more stringent rules and to undertake a broad evaluation and propose corresponding revisions to those requirements in UAC R313-25 that differ from comparable federal statute.

We further request that Rules more stringent than NRC or for which the required findings were not determined PRIOR to their promulgation be rescinded.

The Board previously acted on a recommendation made by DWMRC to rescind UAC R313-27 – a rule passed by the previous DRC Board.

# Furthermore

It should be noted that the NRC Commissioners have issued an SRM to SECY-16-0106 directing staff to make substantive changes to the proposed Part 61 rule. Although not complete, the requested changes are not consistent with and are less stringent than rules found in UAC R313-25



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

September 8, 2017

SECRETARY

MEMORANDUM TO: Victor M. McCree  
Executive Director for Operations

FROM: Annette L. Vietti-Cook, Secretary /RA/

SUBJECT: STAFF REQUIREMENTS – SECY-16-0106 – FINAL RULE:  
LOW-LEVEL RADIOACTIVE WASTE DISPOSAL (10 CFR PART  
61) (RIN 3150-AI92)

The Commission has approved the following substantive revisions to the draft final rule and its subsequent publication as a supplemental proposed rule for a 90-day public comment period. The associated guidance documents should also be revised and should be made publicly available, concurrent with the comment period on the supplemental proposed rule.

Specifically, prior to its publication as a supplemental proposed rule, the draft final rule should be revised to incorporate the following changes:

- 1) Reinstate the use of a case-by-case basis (i.e., "grandfather provision") for applying new requirements to only those sites that plan to accept large quantities of depleted uranium for disposal;
- 2) Reinstate the 1,000 year compliance period from the proposed rule with a specific dose limit of 25 mrem/year and adopt a longer period of performance assessment (the period of which would be based on site-specific considerations and a "reasonable analysis," as defined in SRM-SECY-13-0075, "Proposed Rule: Low-Level Radioactive Waste Disposal (10 CFR Part 61) (RIN 3150-AI92)) and apply the 1,000 year compliance period to the inadvertent intruder performance objective in 10 CFR 61.42 and the site stability performance objective in 10 CFR 61.44;
- 3) Clarify that the safety case consists of the quantitative performance assessment, as supplemented by consideration of defense-in-depth measures; and
- 4) Modify the draft final rule text addressing defense-in-depth to narrow its consideration solely to providing additional assurance in mitigating the effects of large uncertainties that are identified during the performance assessment; and
- 5) Be informed by broader and more fully integrated, but reasonably foreseeable, costs and benefits to the U.S. waste disposal system resulting from the proposed rule changes, including pass-through costs to waste generators and processors.

The revised *Federal Register* notice prepared as a result of the direction in the staff requirements memorandum for this paper should be provided to the Commission for its information no later than 10 business days prior to its transmittal for publication.

# Thank You



*All you need in radioactive and hazardous waste  
management*