MEETING MINUTES APPROVED JULY 10, 2025

Waste Management and Radiation Control Board Meeting Minutes
Utah Department of Environmental Quality
Multi-Agency State Office Building (Conf. Room #1015)
195 North 1950 West, SLC
June 12, 2025
1:30 p.m.

Board Members Participating at Anchor Location: Brett Mickelson (Chair), Dennis Riding (Vice-Chair), Tim Davis, Mark Franc, Shane Whitney

Board Members Participating Virtually: Dr. Richard Codell, Danielle Endres, Nathan Rich, Vern Rogers

Board Members Excused/Absent: Jeremy Hawk, Steve McIff, Scott Wardle

UDEQ Staff Members Participating at Anchor Location: Brent Everett, Doug Hansen, Morgan Atkinson, Tyler Hegburg, Chris Howell, Larry Kellum, Arlene Lovato, Stevie Norcross, Mike Pecorelli, Elisa Smith, Adam Wingate, Raymond Wixom

Others Attending at Anchor Location: Dan Shrum, Steve Gurr

Other UDEQ employees and interested members of the general public also participated either electronically/virtually or telephonically.

This meeting was recorded and an unedited audio of this meeting can be accessed at:
https://www.utah.gov/pmn/files/1286245.mp3

I. Call to Order and Roll Call.
Chairman Mickelson called the meeting to order at 1:30 pm. Roll call of Board members was conducted; see above.

II. Public Comments on Agenda Items – None.

III. Declarations of Conflict of Interest.

Vern Rogers declared a conflict of interest and abstained from voting on Agenda Item VI. Low-Level Radioactive Waste (Items A. and B.), Energy*Solutions*' requests for site-specific treatment variances.

IV. Approval of the meeting minutes for the May 8, 2025, Board meeting (Board Action Item).

It was moved by Dr. Codell and seconded by Shane Whitney and UNANIMOULSY CARRIED to approve the May 8, 2025, Board meeting minutes.

V. Petroleum Storage Tanks Update.

Brent Everett, Director of the Division of Environmental Response and Remediation (DERR), informed the Board that the cash balance of the Petroleum Storage Tank (PST) Enterprise Fund for the end of May 2025 was $39,639,881.00. The DERR has received authorization to transfer $4,000,000.00 to the PST Cleanup Fund. The DERR continues to monitor the balance of the PST Enterprise Fund closely to ensure sufficient cash is available to cover qualified claims for releases.

There were no comments or questions for Mr. Everett.

VI. Low-Level Radioactive Waste.

A. Energy*Solutions'* request for a site-specific treatment variance from the Utah Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to receive an exemption from the treatment standards for uranium extraction process residues encased in cement for macroencapsulation (Board Action Item).

Tyler Hegburg, Environmental Scientist in the Low-Level Radioactive Section in the Division of Waste Management and Radiation Control, reviewed Energy*Solutions'* request for a one-time site specific variance request. Mr. Hegburg reminded the Board that during the May 8, 2025, Board meeting, Energy*Solutions* presented to the Board as an informational item a request for a variance from the treatment standards described in Utah Administrative Code R315-40(a)(2) for the macroencapsulation of approximately 2,000 cubic feet of cemented uranium extraction process residuals that retains several hazardous waste codes D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium) D008 (Lead); D010 (Selenium); D011 (Silver); D030 (2,4-dinitrotolunene); D032 (hexachlorobenzene); D033 (hexachlorobutadiene) and F001, F002, and F005 (spent solvents).

This variance is requested for the purpose of safety, security, and transportation of the waste materials.

A notice for public comment was published in the Salt Lake Tribune, the Deseret News and the Tooele Transcript-Bulletin on April 30, 2025. The comment period began May 1, 2025, and ended on May 30, 2025; no comments were received.

The waste associated with the variance is generated from three different points during the recovery process at the generator's facility. These processes include (1) enriched uranium contaminated ash that has been thermally processed and then recovered through an organic solvent extraction process; (2) oxide powders and dried sludges associated with this enriched uranium-thorium fuels; and (3) sludge residue from the bottom of salt baths used in the processing of the uranium. The residual waste from each of these processes is collected in small cans (~ 2 ½ gallons each) and stored at the generator's facility and characterized through a random sampling and analysis process. This is an ongoing process where the generator has accumulated approximately 2,000 cubic feet of the ~ 2 ½ gallons each cans and continues to generate additional cans each year.

The 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 listed previously were present above their respective treatment standard concentrations within the random characterization. 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 appropriate listed waste codes (D005, D006, D007, and D008) were applied to the process residues. Slightly elevated concentrations of arsenic (D004), selenium (D010), silver (D011), 2,4-dinitrotoluene (D030), hexachlorobenzene (D032) and hexachlorobutadiene (D033) were also detected in separate analyses.

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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, the 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 will be utilized. These packaging procedures include repackaging the 2 ½ gallons cans into 16-gallon drums and filling the void spaces with cement; creating the monolithic form. Formal treatment for the elevated metals concentrations is not performed during this process. The generator has explored 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 would be unwise to perform extra processing that could potentially change this aspect.

The waste material packaged within a 16-gallon monolithic forms is inherently safe and is the form that will be shipped and received at the Energy*Solutions* Clive facility. The characteristic hazardous waste codes associated with the process residues have 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 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. Futhermore, the shredding process of the solidified uranium ash results in a more accessible form of enriched uranium with potential security risks with the handling of the material.

Energy*Solutions* proposes to macroencapsulate the waste, with a permitted process that would significantly decrease the leaching of the waste requiring less handling thereby isolating the waste and keeps the uranium monolithic forms encased in an additional layer further restricting access to the enriched uranium thereby decreasing the leaching potential of the 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 by restricting access to the enriched uranium as the media is contained in an additional layer of cementations fill.

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Final disposal of the waste will occur in the Mixed Waste Disposal Cell at the Energy*Solutions* Mixed Waste Facility.

Historically Energy*Solutions* has requested this variance 16 times for this generator dating back to July 2007 when all previous requests have been approved by the Board. Since the previous request, Energy*Solutions* has received approximately 1,684 cubic feet of this waste within the 16-gallon monoliths and for a total volume of 18,700 cubic feet since the first request was approved.

The Director recommends approval of this variance request. The Director's recommendation is based on the following findings: the proposed alternative treatment method meets the regulatory basis for a variance and will be as safe to human health and the environment as the required method. Energy*Solutions* will handle the monolithic waste forms as debris and final disposal of the waste will occur in the Mixed Waste Disposal Cell.

Danielle Endres asked for further clarification regarding the security concerns associated with this waste and commented that this variance request has been presented to the Board numerous times previously as it is a fairly consistent waste stream and although she is unaware of the location where the uranium recovery is occurring, she questioned if it is related to nuclear energy and asked if the country does more uranium mining and nuclear energy, could the Board potentially see this waste stream potentially increase.

Mr. Hegburg clarified that the security concern is based on the nature of the waste itself, as it is consistent with enriched uranium. The primary objective is to ensure that the waste is controlled and is not released into the environment. Mr. Hegburg also mentioned that the waste generator is the DOE in Oakridge, TN. For the second part of the question regarding the potential increase in this waste stream, due to nuclear energy, Mr. Hegburg deferred to Steve Gurr, Energy*Solutions* representative.

Mr. Gurr, Energy*Solutions* explained that originally the waste stream was stockpiled in cans and Energy*Solutions* has been processing it, and it is a fairly steady waste stream that he anticipates will continue for quite some time.

Dr. Codell remarked that this waste stream is enriched in U235 uranium and briefly discussed circumstances associated with risks related to much higher levels of U235 as they relate to a criticality incident.

Ms. Endres asked for further clarification in terms of "security risk" She specified that she was interpreting "security" in the terms of national security, not in terms of risks to human health and the environment from a criticality incident standpoint and asked if she was misinterpreting the word "security." Mr. Gurr stated that having enriched uranium is a security concern. However, because the waste is encasing in the cement concrete, it reduces the risk from a security standpoint.

Ms. Endres asked for more specificality regarding the security risk associated with this waste stream.

Larry Kellum, Low-Level Radioactive Waste Program Manager in the Division of Waste Management and Radiation Control, remarked that he believes what Ms. Endres is referring to is defined regulatorily as special nuclear material. Mr. Kellum briefly explained that these are fissile isotopes of uranium or plutonium, and in this instance, the discussion is regarding U235. Mr. Kellum stated that the U.S. Code of Federal Regulation (CFR), Part 37 outlines specific security requirements for the handling and disposal of this special type of materials considered special nuclear materials. Mr. Kellum informed Ms. Endres that Energy*Solutions* is compliant with Part 37 of the CFR. Therefore, generally speaking, the waste will be handled in a manner in which criticality is considered, and Energy*Solutions* is ensuring that criticality safety is followed. Additionally, long-term disposal and security measures are in place to prevent unauthorized access or removal of the waste, making such a situation very unlikely to occur.

Mr. Gurr further commented that once the drums are encapsulated, it becomes almost physically impossible for them to be moved as they are encased in concrete.

There were no additional comments or questions for Mr. Hegburg.

It was moved by Mark Franc and seconded by Nathan Rich and UNANIMOUSLY CARRIED to approve Energy*Solutions* LLC's request for a site-specific treatment variance from the Utah Hazardous Waste Management Rules to receive an exemption from the treatment standards for uranium extraction process residues encased in cement for macroencapsulation.
(Vern Rogers abstained from voting.)

B. Energy*Solutions*' request for a site-specific treatment variance from the Utah Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to receive an exemption for the direct macroencapsulation treatment of lithium and lithium-ion batteries (Board Action Item).

Tyler Hegburg, Environmental Scientist in the Low-Level Radioactive Section in the Division of Waste Management and Radiation Control, reviewed Energy*Solutions'* request for a one-time site specific variance request. Mr. Hegburg reminded the Board that during the May 8, 2025, Board meeting, Energy*Solutions* presented to the Board as an informational item a one-time site-specific treatment variance request from Utah Administrative Code R315-268-40 and R315-268-45 for the macroencapsulation treatment and disposal of approximately 1000 lbs. of lithium and lithium-ion batteries that are secondarily contaminated with radioactive components.

A notice for public comment was published in the Salt Lake Tribune, the Deseret News and the Tooele Transcript-Bulletin on April 30, 2025. The comment period began May 1, 2025, and ended on May 30, 2025; no comments were received.

Lithium and lithium-ion batteries typically exhibit the hazardous characteristics of ignitability (D001) and reactivity (D003). Regulations in Utah Admin. Code R315-268-40 require that these characteristic hazards be deactivated to remove the hazardous characteristic prior to land disposal. As an alternative method, Utah Admin. Code R3 l 5-268-45 allows hazardous debris to be treated using an immobilization technology like macroencapsulation. However, the Environmental Protection Agency (U.S. EPA) has ruled that intact batteries are containers and not considered debris. Furthermore, the definition of macroencapsulation in Utah Admin. Code R3 l 5-268-42 states that "[M]acroencapsulation specifically does not include any material that would be classified as a tank or container."

Mr. Hegburg explained that for Energy*Solutions* to meet the regulatory standards described above, lithium and lithium-ion batteries would need to be shredded and mixed with chemicals to deactivate them or punctured (and then considered debris) to macroencapsulate them. Both of these activities (shredding and puncturing) severely agitate the waste and would expose the reactive portion of the waste to the open air, which could cause an adverse reaction such as an explosion. Although this type of waste management is possible, from a safety and health standpoint, it is inappropriate.

Energy*Solutions* proposes to manage this waste by directly macroencapsulating the intact batteries. Macroencapsulation is a permitted treatment technology that isolates hazardous waste from the environment, eliminating the potential for harmful reactions from exposure to the environment. Macroencapsulation requires less handling of the waste and creates a waste form for disposal that is protective of human health and the environment and more appropriate for disposal than the methods previously mentioned.

To date, approximately 600 lbs. of this waste has been received and shipped in small quantities to the Energy*Solutions* facility within containers that have special handling labels to address the ignitability and reactive waste codes associated with the waste stream.

Mr. Hegburg informed the Board that historically, Energy*Solutions* has requested this same variance four times previously, dating back to 2021. All instances of this request have been reviewed and approved by the Board.

The Director recommends approval of this variance request. The Director's recommendation is based on the following findings: the proposed alternative treatment method meets the regulatory basis for a variance and will be as safe to human health and the environment as the required method.

There were no comments or questions for Mr. Hegburg.

It was moved by Dennis Riding and seconded by Shane Whitney and UNANIMOUSLY CARRIED to approve Energy*Solutions* LLC's request for a site-specific treatment variance from the Utah Hazardous Waste Management Rules to receive an exemption for the direct macroencapsulation treatment of lithium and lithium-ion batteries. (Vern Rogers abstained from voting.)

VII. Administrative Rules.

A. Approval from the Board to proceed with formal rulemaking and public comment on proposed changes to Utah Administrative Code R313-28-20 of the Radiation Control Rules (Board Action Item).

Lisa Mechem, Env. Scientist in the X-ray Section of the Division of Waste Management and Radiation Control, reviewed the request for the Board to proceed with formal rulemaking and public comment on proposed changes to Utah Administrative Code R313-28-20 to amend the definition of Healing Arts Screening for consistency with the rules.

Ms. Mechem informed the Board that during a recent review of the rule, a discrepancy between the definition of Healing Arts Screening and Utah Admin. Code R313-28-400(1)(b) was discovered. This rule amendment adds the words "or condition" to the Healing Arts Screening definition so that it addresses diseases or conditions and is consistent with Utah Admin. Code R313-28-400(1)(b).

Additionally, the Division is fixing typographical and formatting errors found in the rules as requested by the Governor's Office.

This is a Board Action Item and the Director recommends the Board approve proceeding with formal rulemaking and public comment by publishing in the July 1, 2025, *Utah State Bulletin* the proposed changes to Utah Admin. Code R313-28-20 and conducting a public comment period from July 1, 2025, to July 31, 2025.

Danielle Endres asked for clarification on the difference between a disease and a condition, requesting an example of each be provided.

Ms. Mechem explained that a disease involves conducting scans with the CT device to look for an existing heart problem; for example, looking specifically for cardiac disease. Conditions, on the other hand, would not fall under the category of disease but are better detected using, for example, a DEXA Scanner. So, while we are not looking for a disease entity in this case, we are instead examining bone density or muscle fat ratio to determine the best ways to proceed with measures like diet and exercise to prevent disease conditions, such as diabetes.

There were no additional comments or questions.

It was moved by Dennis Riding and seconded by Mark Franc and UNANIMOUSLY CARRIED for the Board to proceed with formal rulemaking by publishing in the July 1, 2025, Utah State Bulletin proposed changes to Utah Administrative Code R313-28-20 of the Radiation Control Rules and to conduct a public comment period from July 1, 2025 to July 31, 2025.

VIII. X-Ray Program.

A. Approval of Mammography Imaging Medical Physicists (MIMPs) in accordance with UCA 19-3-103.1 (2)(c) of the Utah Code Annotated (Board Action Item).

Krystal Thomas, Env. Scientist in the X-ray Section of the Division of Waste Management and Radiation Control, reviewed the request for the Board's approval of Mammography Imaging Medical Physicists,

The Division has received three new applications for individuals seeking to be certified as Mammography Imaging Medical Physicists, referred to as MIMPs.

These physicists perform radiation surveys and evaluate the quality control programs of the facilities in Utah providing mammography examinations. Initial MIMP certification must be approved by the Board as required by Utah Code 19-3-103.1.

The June 8, 2025, Board packet contains the list of the names of the applicants who have submitted applications to be certified as MIMPs. Division staff have reviewed the qualifications of each applicant, and they have met the requirements detailed in Utah Admin. Code R313-28-140. The Director of the Division of Waste Management and Radiation Control recommends the Board issue a certificate of approval for the applicants reviewed and presented to the Board.

Dennis Riding questioned what DABR stands for. It was clarified that DABR stands for Diplomate of the American Board of Radiology (DABR), which is a certification in the field of radiology.

There were no additional comments or questions.

It was moved by Mark Franc and seconded by Dr. Codell and UNANIMOUSLY CARRIED for the Board to approve the three applications for certification as Mammography Imaging Medical Physicists (MIMPs) in accordance with Utah Code Annotated 19-3-103.1 (2)(c).

IX. Director's Report.

Director Hansen stated that typically when the Division proposes new regulations requiring Board action, the Division provides a presentation to the Board on the proposed rule changes prior to requesting the public comment period and formal rulemaking process.

Director Hansen informed the Board that the Division is in the process of finalizing new regulations on coal combustion residuals. Division staff have been working with the U.S. EPA to ensure the rules are correct ahead of the Division's submission of a state approval packet.

Director Hansen commented that this program has been administered at the state level for a number of years, but recently the U.S. EPA adopted regulations, and the federal government will be administering a program. However, the objective is to keep this as a state program, and in conjunction with that objective, modifications have been made to the state rules to ensure they are consistent with the federal government regulations. Those modifications are now complete.

Director Hansen informed the Board that although the rule changes are complete, unfortunately, Division staff were not able to complete the process of providing it in this month's Board packet for the Board's review. However, next month the proposed rule changes will be submitting to the Board's review with a request for a formal public comment period on the proposed rule changes. Director Hansen stated the proposed rule changes will be brought before the Board next month to ensure established timelines are met as well as to ensure state control of this program is maintained, as currently the federal government could override the state and operate the program.

There were no comments or questions for Director Hansen.

X. Executive Director's Report.

Executive Director Davis reminded the Board that at his initial Board meeting, he had requested at a future meeting to discuss with the Board his goals and priorities for UDEQ. He apologized for his absence from the previous meeting and briefly discussed his outline for his four new priorities as the new Executive Director, which include: (1) creating a proactive and problem-solving culture; (2) building relationships based on trust and communication; (3) continuing to improve environmental protection of air, land, and water, while supporting growth; and (4) focusing on efficiency, transparency, and innovation.

Executive Director Davis informed the Board that the Department's Mission Statement will be revised to better reflect the four priorities. He also stated that these four priorities are now reflected in the Department's revised Draft Strategic Plan, which is before the Governor, and aligns with Governor Cox's initiatives on Government Reform, Innovation & Transparency (GRIT) and the Governor's "Built Here" imitative.

Executive Director Davis also commented that the Governor's Office is also focused on energy development, including nuclear power, and this Board may be involved with this focus. He informed the Board that Governor Cox recently signed Memorandum of Understanding (MOU) along with the governors of Idaho and Wyoming, establishing a regional collaboration on nuclear energy development. The Department will play an active role in working with the Board, the public, and the business community to help in creating a framework for aligning energy-related efforts, and he emphasized the importance of public trust in the safety of nuclear power.

Executive Director Davis also affirmed his commitment to engaging with stakeholders across Utah and informed the Board that he has spent a significant amount of time visiting various facilities around the state. He asked if any of the Board members would like for him to visit them, stating he would be more than willing to do so.

There were no comments or questions for Executive Director Davis.

XI. Other Business.

A. Miscellaneous Information Items – None.

B. Scheduling of next meeting.

The next meeting is scheduled for July 10, 2025, at the Utah Department of Environmental Quality, Multi-Agency State Office Building.

Interested parties can join via the Internet at: meet.google.com/gad-sxsd-uvs
Or by phone at (US) +1 978-593-3748 PIN: 902 672 356#

XII. Recognition of Retiring Board Member Nathan Rich.

Nathan Rich expressed his appreciation for the opportunity to have served on the Board and to have gotten to know each of the Board members and hopes that he has made a positive difference while participating on the Board. Mr. Rich also thanked those who were able to attend his retirement party and apologized for not being able to attend today's meeting in person.

Chairman Mickelson recognized and thanked Mr. Rich for his dedicated service on the Board and presented him virtually with a recognition plaque; light refreshments were served after the meeting.

Chairman Mickelson stated that along with Executive Director Davis's initiatives regarding building relationships, he highlighted the importance of building relationships, thanking those who attended Mr. Rich's retirement event, and specifically acknowledging the presence of Director Hansen, Dr. Norcross and Arlene Lovato, as their attendance was deeply appreciated and demonstrated goodwill with the regulated community.

XIII. Adjourn.

The meeting adjourned at 2:10 p.m.