

**MINUTES**  
**OF**  
**THE UTAH RADIATION CONTROL BOARD**

**July 14, 2009**

**Department of Environmental Quality, DEQ Building #2**

**Conference Room 101**

**168 N 1950 W**

**Salt Lake City, Utah 84114-4850**

**BOARD MEMBERS PRESENT**

Peter A. Jenkins, M.S., CHP, Chair  
Elizabeth Goryunova, M.S., Vice Chair  
Dane L. Finerfrock, Executive Secretary  
Scott Bird  
Patrick D. Cone  
Frank D. DeRosso, MSPH, CIH  
Christian K. Gardner  
Colleen Johnson  
Edd C. Johnson  
Joseph K. Miner, M.D., MSPH  
Amanda Smith, Acting DEQ Executive Director  
John W. Thomson, M.D.  
David A. Tripp, Ph.D.

**BOARD MEMBERS ABSENT/EXCUSED**

Douglas S. Kimball, DMD

**DRC STAFF/OTHER DEQ MEMBERS PRESENT**

Phil Goble, DRC Staff  
John Hultquist, DRC Section Manager  
Craig Jones, DRC Section Manager  
Laura Lockhart, Attorney, Atty General's Office  
Yoli Necochea, DRC Staff  
Fred Nelson, Attorney, Atty General's Office  
Loren Morton, DRC Section Manager  
Sonja Robinson, DRC Staff  
Donna Spangler, PIO, DEQ – PPA Staff

**PUBLIC**

Krista Bowers, Concerned Citizen  
Jeff Clay, Concerned Citizen  
Chris Cowley, M.D., UPHE  
Michael Cowley, Concerned Citizen  
Candice Fitches, Student  
Tim Fine, HEAL-Utah  
Bob Henline, Concerned Citizen  
Amy Jeffs, Concerned Citizen  
Len Jeppson, Concerned Citizen  
Mark Ledoux, EnergySolutions  
Thomas Magete, EnergySolutions  
Brian Moench, M.D.  
Arthur Morris, HEAL-Utah  
Stephen T. Nelson, Ph.D., Brigham Young University (BYU)  
Sophia Nicholas, HEAL- Utah  
Amy O'Donoghue, Deseret News  
James O'Neal, Private Citizen, Provo, UT  
Vanessa Pierce, HEAL-Utah  
Mary Rogers, Concerned Citizen  
Kate Savage, Concerned Citizen  
Dan Shrum, EnergySolutions, LLC  
Erick Spreny, HEAL-Utah  
Christopher Thomas, HEAL-Utah  
Cherry Wong, Women Concerned

**GREETINGS/WORK MEETING CALLED TO ORDER**

The Utah Radiation Control Board Work Meeting convened in the Department of Environmental Quality (DEQ), Conference Room 101, 168 North 1950 West, DEQ Bldg. 2, Salt Lake City, Utah. Peter A. Jenkins, Chair, called the Work Meeting to order at 2:30 p.m. Chairman Jenkins said the Executive Secretary, Dane L. Finerfrock, would give a presentation on the subject of Depleted Uranium (Copy Attached).

**DRC Board Work Meeting Attendance:**

- (1) Peter A. Jenkins, M.S. CHP, DRC Chair
- (2) Elizabeth Goryunova, M.S., Vice Chair
- (3) Scott Bird
- (4) Patrick D. Cone
- (5) Frank D. DeRosso
- (6) Christian K. Gardner
- (7) Colleen Johnson
- (8) Edd C. Johnson
- (9) Amanda Smith, DEQ Exec. Director
- (10) John W. Thomson, M.D.
- (11) David A. Tripp, Ph.D.
- (12) Dane L. Finerfrock, Executive Secretary

The Work Meeting ended at 3:07 p.m.

**GREETINGS/MEETING CALLED TO ORDER**

Peter A. Jenkins, Chairman, called the board meeting to order at 3:07 p.m. and welcomed the board members and the public. He indicated that if the public wished to address any items on the agenda, they should sign the public sign-in sheet. Those desiring to comment would be given an opportunity to address their concerns during the comment period.

**I. APPROVAL OF MINUTES (Board Action Item)**

**a. Approval of the Minutes from the June 9, 2009 Board Meeting**

Peter A. Jenkins, Chair, asked the board members if they had any corrections to the minutes from the June 9, 2009 board meeting. There were no corrections requested by the board members.

**MOTION MADE BY EDD C. JOHNSON TO APPROVE THE MINUTES OF JUNE 9, 2009 AS WRITTEN**

**MOTION SECONDED BY ELIZABETH GORYUNOVA**

**MOTION CARRIED AND PASSED UNANIMOUSLY**

**II. RULES  
No Items**

**III. RADIOACTIVE MATERIALS LICENSING/INSPECTION**  
No Items

**IV. X-RAY REGISTRATION/INSPECTION**  
No Items

**V. Radioactive Waste**

a. **Presentation by Laura Lockhart: Utah Code Annotated § 19-3-104(8)  
“No More Stringent Rule” (Board Information Item)**

Peter A. Jenkins, Chairman, said the purpose of the presentations and discussion on depleted uranium (DU) would be to consider instigating a moratorium, until the U.S. Nuclear Regulatory Commission (NRC) could formulate a rule.

Laura Lockhart, Attorney General’s Office, addressed the Board (Copy Attached).

**Questions by the Board:**

After Laura Lockhart’s presentation, the board members discussed whether to impose a moratorium or instigate a rulemaking for depleted uranium:

- (1) The board members asked if there was adequate legal standing, and if the moratorium on DU could be challenged.

Response:

Yes, the Board could act toward instigating a moratorium, and the moratorium could be challenged.

- (2) The board members asked if a more stringent rule could be imposed by the Board, if there were a public health and safety issue not being addressed in the Federal rules.

Response:

The Solid and Hazardous Waste Control Board promulgated a more stringent rulemaking for a nerve agent of a hazardous waste. Ms. Lockhart said that this was a small issue for the Federal Government and a large issue for the Department of Environmental Quality (DEQ)--it made sense for DEQ to promulgate a more stringent rule.

- (3) The board members asked for clarification on the application of the more stringent requirements.

Response:

The more stringent requirement would apply to rulemaking—it would not apply to a specific license or to inspections.

- (4) The board members asked if a moratorium were imposed, if it could be challenged. They asked if the NRC could have a rule in place by the time the Board had settled on a rule.

Response:

The rule could most certainly be challenged. She said if there were a judicial review provision, the standard would be reasonableness. The court would also consider stringency requirements. The procedure would start at District Court, and has the potential to go to the Utah Supreme Court. This process would take some time. There is an ethical rule against taking a legal action solely for the purpose of causing a delay.

- (5) What kind of evidence has to be shown for inadequate protection?

Response:

Ms. Lockhart said this question would have to be answered, after the notice and comment period. She said that she felt that it was pretty strong evidence that the NRC staff had concluded that the rule was inadequate to protect health and safety. She said that in the rule the standard was a “reasonable person standard.” She said every member on the Board was a “reasonable person.” Ms. Lockhart said that it would be the board members that would be called on to make the determination or decision.

- (6) The board members asked if the rule passed, and the rule was challenged, if there were a provision to request a stay. And if the decision were appealed, would the rule be effective.

Response:

Ms. Lockhart responded that there were provisions for requesting a “stay.” And the rule may not be effective during the “stay.”

**b. Presentation by HEAL-Utah “Moratorium On Disposal of Depleted Uranium Low-Level Radioactive Waste” (Board Action Item)**

Christopher Thomas, HEAL-Utah, made a presentation to the Board (Copy Attached). Christopher Thomas said the radiation dose limit for members of the public could be exceeded in less than three hours at the EnergySolutions site, after long-term erosion allows the waste to be uncovered. Mr. Thomas said that to his knowledge long-term erosion had not been considered in conjunction with Utah’s rules and laws. He said

that he would like the Board to look into this.

**EnergySolutions, LLC “Moratorium On the Disposal of Depleted Uranium Low-Level Radioactive Waste” (Board Action Item)**

Daniel Shrum and Tom Magete, from EnergySolutions informed the Board on this item (Copy Attached). The final remarks by Tom Magete, were that he and Daniel Shrum believed that they had demonstrated not only why the disposal of Depleted Uranium (DU) at Clive, Utah was safe, but also why a moratorium was not necessary. He said that the site at Clive was inhospitable to human habitation. The U.S. Nuclear Regulatory Commission (NRC) had published criteria regarding how one could do modeling for performance assessments—he said that EnergySolutions had followed NRC’s criteria. He believed the disposal of DU at EnergySolutions was safe today, tomorrow and many tens of thousands of years into the future. He said that EnergySolutions believes that the NRC ruling process will accommodate any changes that need to be made. Mr. Magete said that EnergySolutions was prepared to accept any requirements that might be imposed or required of them today.

**Questions by the Board:**

Questions and discussion continued by the board members and EnergySolutions’ representatives. The following are some of the questions the board members had:

Frank D. DeRossa asked if the moratorium would come with a cost, and he wanted to know what that cost would be.

Tom Magete responded that there were continuous DU clean-ups that were on-going, and they would not have a disposal site.

The board members asked if the DU waste clean-ups included the 46,000 metric tons of waste from the U.S. Environmental Protection Agency (EPA).

Tom Magete responded that EnergySolutions did have contracts with DOE, but they did not have active task orders. EnergySolutions had the potential of disposing of waste from the Savannah River within the next year (about 10,000 tons). The next five years, he projected 46,000 tons coming from Portsmouth and Paducah.

The board members asked if EnergySolutions would be willing to wait until NRC completed its rulemaking on DU disposal.

Tom Magete said that EnergySolutions could not wait for NRC to complete its rulemaking or for the Board to implement a moratorium. He

said that EnergySolutions could make a commitment to what they think would go beyond what the NRC will require for DU. He said the key is the cover, and EnergySolutions could increase the thickness. The new DU material could also be placed very low in the disposal cell.

Peter A. Jenkins said there were members of the public that wanted to make public comment on this issue.

**Public Speakers:**

**(1) James O’Neal, Citizen from Provo, Utah**

James O’Neal said that after hearing all the presentations from the different parties that he, as a Private Citizen, would like to see a moratorium. He said that Depleted Uranium is white, and it reminds him of the chemical “Agent Orange.” “Agent Orange” has had quite a lot of controversy over the years, and it took a while for scientists to figure it out. He said the scientific community in England has recently made new findings about exposure to “Agent Orange,” because of the people in Iraq’s exposure to “Agent Orange.”

Mr. O’Neal said it was the Board’s job to protect the people in Utah. He said that there would obviously be no agreements between HEAL-Utah and EnergySolutions. Mr. O’Neal said that he appreciated the Board and trusted them to make the best decision.

**(2) Michael Cowley, Private Citizen of Salt Lake County, Business Owner**

Michael Cowley said that in all of EnergySolutions’ presentations, EnergySolutions keeps mentioning that the site is suitable, if it stays in an arid condition. EnergySolutions’ stated in its remodeling plan that the site is “an arid desert environment receiving fifty-inches of rain up to a million years from now.” Mr. Cowley said at a previous Board meeting, he had brought the map of Lake Bonneville. He said every 50,000 years the area of Lake Bonneville banks and fills—it is not a fantasy or some indefinite future. It is something that will happen. Mr. Cowley said that what he did not hear from EnergySolutions was that they would remodel, and show what will happen to the EnergySolutions’ landfill when it goes underwater.

Mr. Cowley said another concern was the integrity of the structures that they have at the facility. Mr. Cowley said that the reason he was bringing this up was because EnergySolutions had a bad history in this country with liquid D and C waste. He said that across the country anywhere liquid D and C waste has been stored it has leaked. He said the liquid D and C

waste was stored in much less “critically at risk environments” than where Clive is located. He said that he could not think of a more inappropriate place to put long-term radioactive waste than at the bottom of a periodically filling lake.

He asked the Board to consider the cost of site remediation. He said at the West Valley facility in New York, they spent 5.2 billion dollars for the remediation of Depleted Uranium (DU) at that site—and it could go as high as 27 billion dollars. He said it was inappropriate for Utah to have deep geologic burial for DU at the Clive site. IDER estimated the cost at about 2.5 to 3 billion dollars. Mr. Cowley said it would be more prudent to dispose of DU at a facility where it would at least not contaminate the environment. He said that instigating a moratorium could save a lot of money for future site remediation.

Chairman Jenkins asked Dane Finerfrock, Executive Secretary, to reiterate what would happen, if the Board voted for a moratorium. Dane Finerfrock went over the procedures that the Board would have to follow, prior to establishing a rulemaking. Laura Lockhart advised the Board that prior to rulemaking, they needed to respond to the evaluation questions and establish the evidence.

**Questions by the Board:**

Peter A. Jenkins, Chairman, said that he would like the Board to spend some time discussing the issue of Depleted Uranium (DU). He said that for the last three months, the Board has been trying to decide if they should instigate a moratorium on the disposal of large quantities of DU at the Clive facility. Chairman Jenkins said that he felt that the Board had enough information to make a decision on whether to vote for a moratorium. He said after this discussion, he would like a motion to be made.

David A. Tripp, Ph.D., said that he had listened to both sides. Each side had different opinions as to the intent of the NRC’s rulemaking. Dr. Tripp said that HEAL-Utah indicated they had been led to believe that the NRC would make significant rulemaking changes for DU. *EnergySolutions*, on the other hand, did not believe the NRC would be making significant changes.

Dr. Tripp said the NRC had consented to meet with the DRC Board on September 22, 2009; therefore, he would like to motion that the Board “table the discussion of a moratorium,” until after the meeting. He said the Board could hear from the NRC about the DU rulemaking.

Discussion followed by the board members. The board members discussed presenting a list of specific questions to the NRC. The Board

could look at the list of questions in advance at the Board meeting, and modify them if needed. Chairman Jenkins said they could form a subcommittee to gather the information for the questions. Chairman Jenkins called for a motion from the Board.

**MOTION MADE BY DAVID A. TRIPP THAT THE BOARD TABLES THE DISCUSSION OF A MORITORIUM, UNTIL AFTER THE BOARD MEETS WITH THE U.S. NUCLEAR REGULATORY COMMISSION**

**MOTION SECONDED BY SCOTT BIRD**

Peter A. Jenkins, Chairman, called for a vote from the board members: Aye, would mean that they were in favor of tabling the discussion, and Nay, would mean that they were not in favor of tabling the discussion.

- (1) Christian K. Gardner – Aye
- (2) Scott Bird - Aye
- (3) Frank D. DeRosso – Nay
- (4) John W. Thomson – Nay
- (5) Amanda Smith – Aye
- (6) Elizabeth Goryunova – Aye
- (7) Joseph K. Miner – Nay
- (8) Edd C. Johnson – Aye
- (9) David A. Tripp - Aye
- (10) Patrick D. Cone - Nay

**There were 4 “Nays” and 6 “Ayes”**

**MOTION PASSED AND CARRIED**

Chairman Jenkins asked for volunteers from the Board to form the subcommittee. The following board members volunteered to be on the subcommittee: Patrick D. Cone, Elizabeth Goryunova, Christine K. Gardner, and David A. Tripp. Chairman Jenkins said that the subcommittee could meet and gather the board members’ questions for the NRC’s response. The Board could then make the necessary corrections, and have the questions ready for the NRC’s response.

**MOTION MADE BY DAVID A. TRIPP TO MOVE THE SEPTEMBER 8, 2009 MEETING TO SEPTEMBER 22, 2009 AND FOR THE SUBCOMMITTEE TO PREPARE A LIST OF QUESTIONS FOR THE U.S. NUCLEAR REGULATORY COMMISSION TO ANSWER AT THE BOARD MEETING**

**MOTION SECONDED BY PATRICK D. CONE**

## **MOTION CARRIED AND PASSED UNANIMOUSLY**

### **c. Requests to the Board to Provide Comments on Depleted Uranium Disposal (Board Information Item)**

**Stephen T. Nelson, Ph.D., Associate Professor at BYU**, said that an annual dose standard at Yucca Mountain is set by the U.S. Environmental Protection Agency (EPA). The EPA's rule is 15 millirems per year. His presentation to the Board is attached (Copy Attached). Dr. Nelson also stated that he was bothered and offended by Board member, Edd C. Johnson's statement that we are "crying wolf." He said concentrated depleted uranium oxide should not be disposed anywhere near the surface where the hazard can be passed into the environment. Dr. Nelson said that he had provided the Board with a letter that he sent to the U.S. Nuclear Regulatory Commission (NRC) on the proposed rulemaking.

**Chris Cowley, M.D., and Brian Moench, M.D., members of Utah Physicians for a Healthy Environment (UPHE)**, presented information to the Board on Depleted Uranium (Copy Attached). Dr. Moench said that the precautionary principle was imperative: "whenever there is doubt, do for the patient that which represents the least amount of risk to the patient."

#### **Questions by the Board:**

Discussion followed by board members as to when Depleted Uranium ( $\text{DUF}_6$ ) turned from a solid or a gas and if DU was being stored as uranium hexafluoride ( $\text{DUF}_6$ ) or as uranium oxide. Dr. Moench said DU would change to a solid at  $143^\circ\text{F}$ , and that right now the containers of DU were being stored in cylinders as uranium hexafluoride. He said that most of the cylinders were about 62% (percent) full of solid, but most of them also have some gas in them. He said that uranium hexafluoride at  $143^\circ\text{F}$  would turn into a gas.

Discussion followed between Peter A. Jenkins, Chairman, and Dr. Brian Moench. Chairman Jenkins said Dr. Moench had mentioned the National Academy of Science in his presentation and wondered if he was referring to the BEIR (Biological Effects of Ionizing Radiation) Report. Brian Moench said that he was referring to the BEIR Report. Discussion continued between them about the BEIR Report.

## **VI. URANIUM MILL LICENSING AND INSPECTION No Items**

**VII. OTHER DIVISION ISSUES (Board Information Item)**

**a. Division Activities Report**

Peter A. Jenkins, Chair, asked the Board if they had any questions on the Division Activities Report. The board members had none.

Chairman Jenkins, asked Dane L. Finerfrock to report to the Board regarding the email that he had received from the U.S. Nuclear Regulatory Commission (NRC).

Dane L. Finerfrock, Executive Secretary, said that in the board packet he had included an email. The email indicated that the NRC would hold a workshop on the disposal of Depleted Uranium from September 23-24, 2009 at the Salt Lake City Marriot in University Park. He said that the NRC had offered to meet with the Board on September 22, 2009 and discuss any topics the Board would like to hear.

**VIII. PUBLIC COMMENT**

**Please refer to Item V. a.**

**IX. The Next Scheduled Board Meeting: September 22, 2009, DEQ Bldg #2, Conference Room 101, 168 North 1950 West, Salt Lake City, Utah 3:00 – 5:00 P.M. THE BOARD MEETING ADJOURNED AT 5:54 P.M.**