

May 12, 2009

DRC BOARD MEETING

**Department of
Environmental Quality
168 N 1950 W
DEQ BLDG #2
Conference Room 101
SALT LAKE CITY, UT
84114-4850
3:00 p.m. – 5:00 p.m.**

RADIATION CONTROL BOARD
Department of Environmental Quality (Bldg #2),
Conference Room 101, 168 North 1950 West, Salt Lake City, Utah
3:00 – 5:00 PM, May 12, 2009

FINAL AGENDA

- I. Minutes (**Board Action Item**)
 - a. Approval of the Minutes from the April 14, 2009 Board Meeting

- II. Rules
No Items

- III. Radioactive Materials Licensing/Inspection
No Items

- IV. X-Ray Registration/Inspection (**Board Action Item**)
 - a. Approval of Mammography Imaging Medical Physicists

- V. Radioactive Waste (**Board Information Items**)
 - a. Judd vs. Utah Radiation Control Board
Petition to Intervene: Utah Court of Appeals

 - b. Presentation by Representatives from HEAL – Utah
Regarding Depleted Uranium Disposal

- VI. Uranium Mill Licensing and Inspection
No Items

- VII. Other Division Issues (**Board Information Items**)
 - a. Summary from the Meeting of the Northwest Interstate Compact (NWIC)
Low-Level Radioactive Waste Management

 - b. Division Activities Report

- VIII. Public Comment

- IX. **The Next Scheduled Board Meeting: June 9, 2009 (Tuesday)**, DEQ Bldg #2,
Conference Room 101, 168 North 1950 West, Salt Lake City, Utah 3:00 – 5:00
P.M.

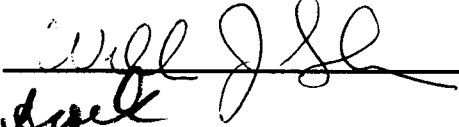
For those individuals needing special assistance in accordance with the Americans with Disabilities Act, please contact Brooke Baker at the Utah Department of Environmental Quality, at 168 North 1950 West, Salt Lake City, UT 84116, Office of Human Resources at (801) 536-4412, TDD (801) 536-4414, or by email at: bbaker@utah.gov.

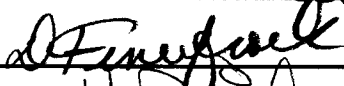
UTAH RADIATION BOARD
BOARD MEMBERS - SIGN-IN SHEET

MEETING DATE: May 12, 2009

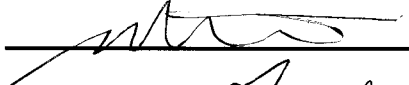
Peter A. Jenkins, M.S., CHP, Chair 

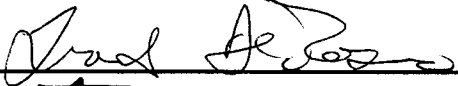
Elizabeth Goryunova, M.S., Vice Chair absent - 5/12/09

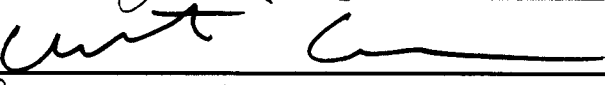
William J. Sinclair, Acting Executive Director 

Dane L. Finerfrock, Exec. Sec. 

Scott Bird 

Patrick D. Cone 

Frank D. DeRosso, MSPH, CIH 

Christian K. Gardner 

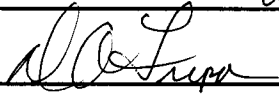
Colleen Johnson 

Edd C. Johnson absent - 5/12/09

Douglas S. Kimball, DMD 

Joseph K. Miner, M.D., MSPH 

John W. Thomson, M.D. absent - 5/12/09

David A. Tripp, PH.D. 

OTHER STAFF ATTENDING

Public Attendance Sheet
Utah Radiation Control
Board Meeting
 DEQ Bldg. #2, Conf. Room 101
 168 N 1950 W, Salt Lake City, UT 84114-4850
 3:00 - 5:00 p.m.
 MaY 12, 2009
Please Print

1 of 6

NAME (Please Print)	Organization/Affiliation Phone Number and Email Address:	Speak: Yes or No? If Yes, which Agenda Item Do you Wish to Address Before the Board Today? (List Item#)
1. Christopher Thomas	HEAL Utah	
2. Bob Archibald	B.ABC@SBCGLOBAL.NET 801 943 3264	YES Depleted Uranium
3. Mary Ellen Navas	MENAVAS@SBCGLOBAL.NET 801 232-6288	YES DU
4. Ed Firmage, Jr	efirmage@XMISSION.COM 801-272-7176	YES DU
5. DUANE CARLING	HEAL CTM913@HOTMAIL	NO
6. James O'Neal	citizen 1-801-802-0228 issonychia@yahoo.com	
7. Naomi Franklin	801-974-5396	NO
8. Michael Conley	Sdf, 801.558-2505 michael@weearthlink.net	YES
9. GEORGE GATES	HEAL UT	NO
10. ARTHUR MORRIS	Heal UT	NO
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Public Attendance Sheet
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2 of 6

NAME (Please Print)	Organization/Affiliation: Phone Number and Email Address:	Speak: Yes or No? If Yes, which Agenda Item Do you Wish to Address Before the Board Today? (List Item#)
20. ELISE LAZAK	HEAL	No
21. John Coulter	Heal 801-244-4926 johnnyk7@yahoo.com	NO
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DRC Staff:

D. Esser

Phil G.

Ray N

C. Jones

K. Carney

L. Morton

I'm not!

Public Attendance Sheet
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Please Print

3086

NAME (Please Print)	Organization/Affiliation Phone Number and Email Address:	Speak: Yes or No? If Yes, which Agenda Item Do you Wish to Address Before the Board Today? (List Item#)
39. Sallie Shak	Catalyst Magazine 970 948 2901	NO public comment EXCEPT THIS IS INSIDE
40.	sallie@spris.net	
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4 of 6

NAME (Please Print)	Organization/Affiliation Phone Number and Email Address:	Speak: Yes or No? If Yes, which Agenda Item Do you Wish to Address Before the Board Today? (List Item#)
58. Sarah Brownstein		No
59. Eileen G Greene		
60. Brian Moeuch	UT/IE	.
61. Aurora E. Shlien	HEAL	NO
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Public Attendance Sheet
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5076

NAME (Please Print)	Organization/Affiliation Phone Number and Email Address:	Speak: Yes or No? If Yes, which Agenda Item Do you Wish to Address Before the Board Today? (List Item#)
77. Laura Ledebat	Atty Gen	No
78. Dan Shuman	Energy Solutions	No
79. Cherry Wong	Women Concern	No
80. M. DIANE NICHAM	<i>[Signature]</i>	Yes IV NO
81. ROLENE CUNTER	HEAL UTAH	NO
82. Mark Ledebat	Energy Solutions	No
83. THOMAS MAGETTE	ENERGY SOLUTIONS	No
84. David Esser	DRC	NO
85. Inessa Preece	HEAL Utah	NO
86. Eric Spreng	HEAL Utah	No
87. Kelly Savage	HEAL Utah	Yes - DU
88. MARSHA McLEAN	Sierra Club	No
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Public Attendance Sheet
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le of 6

NAME (Please Print)	Organization/Affiliation Phone Number and Email Address:	Speak: Yes or No? If Yes, which Agenda Item Do you Wish to Address Before the Board Today? (List Item#)
96 PETER BROWNSTEIN	PUBLIC 801-581-0620	UU
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DIVISION OF RADIATION CONTROL

BOARD MEETING

May 12, 2009

**ADDITIONAL
SUPPLEMENTS**

DRC BOARD FILE

- IV. X-Ray Registration/Inspection (**Board Action Item**)
 - a. Approval of Mammography Imaging Medical Physicists



State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY HERBERT
Lieutenant Governor

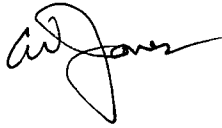
Department of
Environmental Quality

William J. Sinclair
Acting Executive Director

DIVISION OF RADIATION CONTROL
Dane L. Finerfrock
Director

MEMORANDUM

TO: Utah Radiation Control Board

FROM: Craig W. Jones 

DATE: May 7, 2009

SUBJECT: Mammography Imaging Medical Physicists

I have reviewed the applications and supporting documentation for a number of individuals who seek recertification as a Mammography Imaging Medical Physicist. The following physicists submitted a complete application and demonstrated they are eligible to be recertified:

Lisa M. Bosworth, M.S.	Ann M. Jones, M.S.
Byron L. Hardy, Ph.D.	Ross L. Mercer, M.S.
Robert J. Hoffman, M.S.	Gene L. Wollan, M.S.
Peter A. Jenkins, M.S.	

One individual submitted an initial application for certification as a Mammography Imaging Medical Physicist. The application was complete and the following applicant showed that he is eligible to be certified:

Adam Arndt, M.S.

Recommendation

The Executive Secretary recommends that the Board approve each individual named above as a Mammography Imaging Medical Physicist. The effective date of the approval should be from June 1, 2009 to May 31, 2010.

- V. Radioactive Waste (Board Information Items)**
- b. Presentation by Representatives from
HEAL – Utah Regarding Depleted Uranium
Disposal**

Handouts from the Public Speakers

- (1) Mary Ellen Navas**
- (2) Bob Archibald**
- (3) Michael Cowley**
- (4) Edwin Firmage**

I am Mary Ellen Navas, of Sandy Utah. Thank you for your attention today and for your prudence and leadership on the Radiation Control Board. My comments today are not unusually technical or complicated. But I do have a concern and a request of you.

What we have heard today is that large quantities of depleted uranium decay into more radioactive constituents, including radium. Eventually, this material will exceed Class C limits that our state has established for radium. *→ 35,000 years - Not the geologic time for Mr. Finestra*
Our state legislature in 2005 passed a statutory ban on class B and C waste. Why would we now knowingly let material come into our state that will violate our own ban on B and C waste? The prudent path forward seems quite clear to me. I would like to see you, as our state's citizen panel on radiation issues, place a moratorium on large quantities of depleted uranium coming into the state.

*are not
concerned
about*

Thank you.

Mary Ellen Navas
4115 East Quarry Dr
Sandy, UT 84092
(801) 943-3264 (h)
May 12, 2009

RADIATION CONTROL BOARD

May 12, 2009

I am not a physical scientist. I'm a Psychologist. But research I have done in anticipation of this meeting causes me great concern about what we know and don't know about DU.

First, use of DU in munitions and as armament in the first Gulf War and since, has ignited mountains of research, opinion and allegations. Some tout DU munitions as cheap and effective, some call them today's Agent Orange, with highly lethal qualities. Many link DU to unexplained illnesses among our Gulf War vets, even Gulf War Syndrome.

Here's the argument. U-238, a dense radioactive heavy metal is an alpha emitter. But, DU is also a beta emitter. Two beta-emitting daughter isotopes, Thorium-234 and Protactinium-234, are present and in active equilibrium with U-238 within 20 weeks of enrichment. This occurs through a rare active, spontaneous and persistent fission process. These beta emissions are considered by many to be the main radiological hazard in handling bulk DU.

The high density of DU makes it attractive as counterweight in airplanes and for military use. DU is also highly pyrophoric ----- it burns upon impact --- it has a low (for a metal) burning point.

With air friction, or impact, or intense fire, DU bursts into flame, aerosols --- and emits tiny particles of uranium oxide into the air resulting in both heavy metal and radiation poisoning when inhaled. Entire areas can be contaminated with these tiny very long-lived particles. The breathing of these particles ---- or ingestion of minute quantities in food or water can cause irreparable kidney damage and extensive cellular damage. Some consider this a greater risk from DU than radiation.

There are many examples of the threat of DU --- In 1992 an El Al Boeing 747 crashed into an apartment building in Amsterdam, Holland and burned intensely. Approximately 273 kg of DU (the tail section counterweight) was never unaccounted for, apparently burned and likely contaminated the area

Another --- at the forced closing of the weapons facility in Clonie NY, uranium particles were found as far as 26 miles away, downwind.

So in closing I have this request. For decades we have underestimated the dangers of the byproducts and contaminants associated with processing and enriching Uranium. It is time to make certain we do not make yet another mistake, this time. DU is in no way benign. In fact when I think of an airplane crash carrying DU counterweights or envision the crash of a semi, carrying DU on Utah highways, or a serious fire out at Clive, I say lets make certain we consider all of the risks of DU before we bring more of it into Utah.

I ask you to impose a moratorium on storing any more DU in Utah, pending much closer scrutiny.

DOB ARCHIBALD
SANDY, UTAH

While EnergySolution's nuclear waste repository at Clive, UT is suitable for disposal of short-lived radionuclides---those that would decay to safe levels from within decades to several thousands of years---disposal of longer term radionuclides, such as those involved with depleted uranium, should require an extended analysis of its geologic history. Analysing the site's characteristics with this longer focus, reveals that Clive is inherently vulnerable---and will become completely compromised through erosion and flooding---due to its location and elevation within the Lake Bonneville Basin.

Please refer to Map 73---Major Levels of Great Salt Lake and Lake Bonneville---figure 4, and you'll notice that the location of EnergySolution's Clive site---at an elevation of 4,280 feet---was under water 12,000 of the last 24,000 years during the most recent Lake Bonneville period. Data from numerous sources, has established the frequency in which these lakes are created. "Beginning around 900,000 years ago, the glacial-interglacial cycles shifted frequency. Ever since, the glacial peaks have been 100,000 years apart..."¹ More specifically, geologists explain that the most recent Lake Bonneville was just the latest in a series of predictably occurring lakes, "geologic evidence suggests that it may have evaporated and reformed as many as 28 times in the last 3 million years."² Many of these earlier lakes---as with the previous Lake Bonneville of 150,000-130,000 years ago---are thought to have filled the basin to a depth of approximately 800 feet.³ Future Lake Bonneville will be limited to a maximum depth of only 650 feet, ironically, because of too much water during the last cycle. Lake Bonneville reached a depth of over 1,000 feet before overflowing out of the Great Basin at Red Rock Pass, Idaho into the Snake River drainage. A huge flood ensued, cutting through 350 feet of soft material until reaching bedrock at an elevation of 4,740 feet.³ At this new maximum, Clive will be submerged in up to 460 feet of water during the next cycle. Referring back to Map 73, Figure 1, future Lake Bonneville will cover all blue areas except the lightest blue.

The clay, gravel, rock, and dirt barriers at Clive are engineered to isolate its buried nuclear waste in a dry desert climate, that receives a limited amount of rain, for several thousands of years---possibly exceeding the required specs. But in time, these barriers will fail---catastrophically and completely---as pounding waves and inevitable flooding from the next Lake Bonneville reach the site.

What makes this especially troubling is EnergySolutions and DEQ's in-depth understanding of the interactions of water and nuclear waste. During the discussions which lead to the successful ban of B and C Class nuclear wastes, two important questions were asked. "What caused previously licensed B & C nuclear waste sites to leak radioactive material into their surrounding environments---costing dozens of billions to either cleanup or relocate?"; and, "What lessons could be learned from their failures?" Regulators and scientists from DEQ and EnergySolutions confidently suggested that they had the answer. All previous sites leaked because they allowed liquid wastes to be disposed at their sites. Clive would not be allowed to receive liquid wastes and all incoming waste streams would be monitored and modified, if necessary, to strictly control their moisture content---not too wet to migrate or too dry to blow away---during placement, burial and storage. Ironically---the achilles heel at Clive will be water---due to the sites inevitable periodic flooding.

It would be proactive to consider nuclear wastes currently stored at Clive---that will be at dangerous levels in 90,000 years---as already compromised---especially the 5,500 barrels of depleted uranium interred last October. Instigating a study now, to determine future liabilities, and designing a relocation plan for areas at Clive determined to be at risk, might save future generations billions.

My hope is that this board will not allow any future waste streams---especially depleted uranium with its billion year decay cycle at activity levels Greater than Class C---to circumvent this geographically predetermined time limit at Clive.

Michael Cowley
Salt Lake County resident
801.558-2505

Testimony before the Utah Radiation Control Board

May 12, 2009

Edwin Firmage

With the NRC's recent decision to classify depleted uranium as Class A low-level waste, Utah, which is the country's principal low-level waste repository, will almost certainly become the dumping ground for this toxic material, which is not made less dangerous by a ruling of the NRC.

Currently some 740,000 tons of depleted uranium in unstable hexafluoride form are stockpiled at Department of Energy sites at Paducah, Kentucky, Portsmouth, Ohio, and Oak Ridge, Tennessee. One company, LES, is currently building an enrichment plant in New Mexico, which will generate well over 100,000 metric tons of depleted uranium. Three other companies are seeking licenses to build enrichment plants in Idaho, Ohio, and North Carolina. The NRC staff assumes that between existing stocks and depleted uranium from new plants, 1.4 million tons in all, will have to be disposed of as radioactive waste.

In contrast to the low-level waste that is currently stored at Energy Solutions' Clive facility, the radioactivity of depleted increases with time because of the in-growth of decay products such as thorium-230 and radium-226 from uranium-238. In time, the radioactivity of the Clive material will exceed the limit set even for Class C waste, which Utah has banned. And, unlike the material now being stored at the Clive site, this waste will remain highly radioactive for hundreds of thousands of years. Thorium-230, for example, has a half life of over 75,000 years. Among the most concerning by-products of U-238 decay is radon gas, large quantities of which ~~will~~ may well escape the minimal protective covering of simple dirt that the Clive facility offers.

All of this material will start coming to before anyone will have had an opportunity to determine whether Utah is an appropriate or safe disposal site for this material. This is madness. I urge to put in place an immediate moratorium on the disposal of any additional depleted uranium in Utah.

Thank you.

RADIATION CONTROL BOARD

Department of Environmental Quality (Bldg #2),
Conference Room 101, 168 North 1950 West, Salt Lake City, Utah
3:00 – 5:00 PM, May 12, 2009

TENTATIVE AGENDA

- I. Minutes (**Board Action Item**)
 - a. Approval of the Minutes from the April 14, 2009 Board Meeting
- II. Rules
No Items
- III. Radioactive Materials Licensing/Inspection
No Items
- IV. X-Ray Registration/Inspection (**Board Action Item**)
 - a. Approval of Mammography Imaging Medical Physicists
- V. Radioactive Waste (**Board Information Items**)
 - a. Judd vs. Utah Radiation Control Board
Petition to Intervene: Utah Court of Appeals
 - b. Presentation by Representatives from HEAL – Utah
Regarding Depleted Uranium Disposal
- VI. Uranium Mill Licensing and Inspection
No Items
- VII. Other Division Issues (**Board Information Items**)
 - a. Summary from the Meeting of the Northwest Interstate Compact (NWIC)
Low-Level Radioactive Waste Management
 - b. Division Activities Report
- VIII. Public Comment
- IX. **The Next Scheduled Board Meeting: June 9, 2009 (Tuesday)**, DEQ Bldg #2,
Conference Room 101, 168 North 1950 West, Salt Lake City, Utah 3:00 – 5:00
P.M.

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1	<p>I. Minutes (Board Action Item)</p> <p>a. Approval of the Minutes from the April 14, 2009 Board Meeting</p>
2	<p>II. Rules</p> <p>No Items</p>
3	<p>II. Radioactive Materials Licensing/Inspection</p> <p>No Items</p>
4	<p>IV. X-Ray Registration/Inspection</p> <p>a. Approval of Mammography Imaging Medical Physicists (Board Action Item)</p>
5	<p>V. Radioactive Waste (Board Info Items)</p> <p>a. Judd vs. Utah Radiation Control Board Petition to Intervene: Utah Court of Appeals</p> <p>b. Presentation by Representatives from HEAL – Utah Regarding Depleted Uranium Disposal</p>
6	<p>VI. Uranium Mill Licensing and Inspection</p> <p>No Items</p>
7	<p>VII. Other Division Issues (Board Info Items)</p> <p>a. Summary from the Meeting of the Northwest Interstate Compact (NWIC) Low-Level Radioactive Waste Management</p> <p>a. Division Activities Report</p> <p>VIII. Public Comment</p>
8	<p>IX. Other Issues:</p> <p>The Next Scheduled Board Meeting: June 9, 2009, (Tuesday), DEQ Bldg #2, Conference Room 101, 168 North 1950 West, Salt Lake City, Utah, 3:00 – 5:00 P.M.</p>

- I. Minutes (**Board Action Item**)
 - a. Approval of the Minutes from the April 14, 2009 Board Meeting

**MINUTES
OF
THE UTAH RADIATION CONTROL BOARD**

April 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
Frank D. DeRosso, MSPH, CIH
Christian K. Gardner
Edd C. Johnson
Douglas S. Kimball, DMD
Joseph K. Miner, M.D., MSPH
William J. Sinclair, Acting Executive Director
John W. Thomson, M.D.
David A. Tripp, Ph.D.

PUBLIC

Judy Fahys, Salt Lake Tribune
James O'Neal, Private Citizen
Shaun McCandless, EnergySolutions
Vanessa Pierce, HEAL-Utah
Dan Shrum, EnergySolutions
Christopher Thomas, HEAL-Utah
Mark Ledoux, EnergySolutions
Jim Sweet, Gamma West
James Holtkamp, Holland & Hart law firm
Candice Fitches, University of Utah

BOARD MEMBERS ABSENT/EXCUSED

Scott Bird
Patrick D. Cone
Colleen Johnson

DRC STAFF/OTHER DEQ MEMBERS

PRESENT

Edith Barker, DRC Staff
Susan Giddings, DRC Staff
Richard Sanborn, DRC Staff
Phil Goble, DRC Staff
John Hultquist, DRC Section Manager
Boyd Imai, DRC Staff
Ryan Johnson, DRC Staff
Craig Jones, DRC Section Manager
Loren Morton, DRC Section Manager
Donna Spangler, DEQ – PPA Staff, PIO
Sonja Robinson, DRC Staff

GREETINGS/MEETING CALLED TO ORDER

The Utah Radiation Control Board 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 meeting to order at 3:03 p.m. He welcomed the Board Members and the public. Chairman Jenkins 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 March 10, 2009 Board Meeting

Peter A. Jenkins, Chair, asked the Board members for corrections to the minutes from March 10, 2009. William J. Sinclair, Acting Executive Director, requested the following corrections to the minutes:

1. Page 1, on second column the heading which reads: "DRC STAFF/OTHER DEQ MEMBERS PRESENT – CON'T," and after "**Donna Spangler, PPL (Division).**" Change the heading to read on the top of the second column and after Donna Spangler's name, followed by the Department (DEQ), Division (PPA Staff) and title (PIO). Changed to read: "**Donna Spangler, DEQ – PPA Staff, PIO**"
2. Page 5, Item V. c., under subtitle "Briefing: Financial Assurance Requirements for Radioactive Material Licensees (Board Information Item)," third paragraph, item number (4) which reads: "(4) was there enough rock volume . . . coverage of construction material for the closure/**decommission** at EnergySolutions." Changed to read: "**decommissioning** . . ."
3. Page 7, Item VIII., under subtitle "Public Comment," the second paragraph, last sentence, which reads "Chairman Jenkins **called the** "walk in comments" . . . to cover the topics on the agenda." Changed to read: "**called for the** . . ."
4. Page 8, Item VIII., under subtitle "Public Comment." Comments by Stephen T. Nelson, Brigham Young University (BYU), the second paragraph, last sentence which reads: "He said that when accomplished **electrons** . . ." Changed to read: "**electronic.** . . ."
5. Page 8, Item VIII, under subtitle "Public Comment. In Vanessa Pierce's comments, third paragraph, third sentence which reads: "Ms. Pierce said that she thought that it was important that members of the board, policy makers, **legislatures** and the public have an accurate . . ." Change to read: "**legislators** . . ."
6. Page 8, Item VIII., under subtitle "Public Comment." The fifth paragraph, last sentence, which reads: "He said in the Board's role in **over-site** . . ." Change to read: "**oversight** . . ."

MOTION MADE BY ELIZABETH GORYUNOVA TO APPROVE THE

MINUTES OF MARCH 10, 2009 WITH THE CHANGES

MOTION SECONDED BY EDD C. JOHNSON

MOTION CARRIED AND PASSED UNANIMOUSLY

II. RULES

No Items

III. RADIOACTIVE MATERIALS LICENSING/INSPECTION

No Items

IV. X-Ray Registration/Inspection (Board Action Item)

a. Approval to Distribute Letter: "Raising Awareness of X-Ray Exposure to Patients"

Peter A. Jenkins, Chair, informed the Board on this item. He provided the Board with two documents (attached): the first entitled (1) "CT Radiation Dose for the Utah Radiation Control Board" and (2) a letter entitled "All Utah Medical Facilities with a Registered Computed Tomography System and Qualified Experts."

Peter A. Jenkins, Chair, said he was in support of the letter that he distributed to the Board. He said that a few months back the Division had approached the Board in regards to sending out an informational letter to facilities that have multi-slice computed tomography (CT) machines. They came up with the final letter to send to the facilities entitled "All Utah Medical Facilities with a Registered Computed Tomography System and Qualified Experts." He informed the Board that this letter discussed their increasing concern about the widespread use of multi-slice computed tomography (CT) and the increase in radiation exposure to patients.

Chairman Jenkins made comments in support of the letter. After his comments, he thanked Craig Jones, Section Manager, for gathering all the necessary information to put the letter in its final form. Chairman Jenkins said that the letter would encourage facilities to obtain accreditation through the American College of Radiology (ACR). He said that the ACR accreditation program included elements of appropriateness-criteria, patient dose limits, and image quality control—this information was pertinent in assuring low-dose limits in patients.

Mr. Jenkins asked the Board if they had any comments regarding the letter.

Discussion by the Board

The Board discussed their support of the letter and the letter's raising

awareness of frequent or unnecessary use of CT scans. They hoped the letter would increase communication between the medical physicians and those recommending CT scans.

Joseph K. Miner recommended a change in the letter: Page 2, top paragraph, second sentence, line three which reads: "We encourage each and every physician . . . and **whenever possible** to hold a consultation with the radiologist and discuss . . ." Change to read: "**whenever in question**, to hold a consultation with the radiologist . . ."

MOTION MADE BY JOSEPH K. MINER TO APPROVE THE LETTER WITH THE AMENDMENT

SECONDED BY CHRISTIAN K. GARDNER

MOTION CARRIED AND PASSED UNANIMOUSLY

V. Radioactive Waste (Board Information Item)

a. Nuclear Regulatory Commission Plan for Rulemaking for Disposal of Depleted Uranium (DU)

Dane L. Finerfrock, Executive Secretary, informed the Board on this item. Mr. Finerfrock asked the Board to look under tab 5 of the Board informational packet. He said there were five sections regarding this item: (1) the news release from the U.S. Nuclear Regulatory Commission (NRC); (2) the voting records on the rulemaking issue; and (3) the technical documents from the NRC that described the rulemaking issue they would be voting on; and he said that the rest of the sections contained NRC informational items.

Mr. Finerfrock said that during the past year, Board Members had raised questions about the NRC's activities with respect to the disposal of "depleted uranium" (DU). He said that the NRC had contacted the State of Utah and other states about proposals on how they were going to manage DU. He said the NRC voted that they would do a rulemaking for facilities that are considering disposal of large quantities of DU. He said that the press release described NRC's intentions. Mr. Finerfrock said that the rulemaking would not change the classification of uranium. It would remain Class A radioactive waste. However, the NRC strongly believes in placing additional restrictions on the disposal of large quantities of DU at specific sites, and they may deny sites based on site characteristics.

Mr. Finerfrock said that he had spoken with the staff at NRC, and they did not have a scheduled time for completing the rulemaking process. He said the NRC was vividly aware of the importance of completing the rulemaking process as soon as possible.

Questions by the Board:

Peter A. Jenkins, Chair, asked Mr. Finerfrock to describe what the

Division had done with respect to depleted uranium (DU). He said he understood there was still some DU at the Clive site. He said that he would like to know where the DU currently sits at EnergySolutions.

Dane L. Finerfrock, Executive Secretary, replied that the current EnergySolutions radioactive material license describes the depleted uranium (DU) as Class A radioactive waste. He said that when EnergySolutions completed their Performance Assessment, DRC informed EnergySolutions that the exposure criteria for the various half-life analyses would run the modeling out 1,000 years; however, the exposure criteria would not exceed 500 years. Mr. Finerfrock said this was the current guidance. However, if the Board members read the technical reports from the NRC, the NRC has suggested changing the numbers. Mr. Finerfrock said that there is DU located in all of the cells at EnergySolutions.

PUBLIC COMMENTS:

James O'Neal, Private Citizen, thanked Dane L. Finerfrock, Executive Secretary, for doing such an admirable job reporting on this item. Mr. O'Neal said he was concerned about the scale of the depleted uranium (DU), and he concurred with Mr. Finerfrock that this material needed to be looked at very carefully. He said it was certainly a very big problem. Mr. O'Neal said that as far as Utah being the default-location for DU disposal, the DU is already here.

Christopher Thomas, Policy Director of HEAL-Utah, thanked the Board for taking up the issue of depleted uranium (DU) disposal, and addressing their concerns. Mr. Thomas said that HEAL – Utah currently had a number of concerns about treating large quantities of DU as Class A waste for the reasons that were mentioned in the report: (1) that it does not commemorate radioactive waste over time; (2) second, that some of the decay products will actually exceed the State's own waste classification overtime (DRC Rules); and (3) that a number of issues related to potential exposures and doses could be received by members of the public in the future.

He said that HEAL – Utah had been looking at the issue for a number of years (since 2007 when EnergySolutions sought their license renewal). Mr. Thomas said that HEAL – Utah intended to address the Board at the upcoming board meeting. He said the Board might want to consider participating in the NRC's rulemaking process, and also participate in taking some State level action. Mr. Thomas concluded by saying that this issue was timely, and that he looked forward to working with the Board in the future.

VI. URANIUM MILL TAILINGS UPDATE

No Items

VII. Other Division Issues

**a. Introduction of new Board Member: Colleen Johnson
(Board Information Item)**

Dane L. Finerfrock, Executive Secretary, reported that the Governor had appointed a new Board member. He said that Ms. Colleen Johnson from the Tooele County Commission would be the new Board member. Mr. Finerfrock reported that this position was formally held by Joleen Langianese, from the Grand County Commission. He said that Commissioner Johnson would be attending the next scheduled Board meeting.

**b. Election of Chair and Vice-Chair for the period 7/1/09 thru 6/30/10
(Board Action Item)**

Peter A. Jenkins, Chair, informed the Board that the time had come to vote for a Chair and Vice Chair for the Utah Radiation Control Board for the period starting on July 1, 2009 through June 30, 2009. The following is the outcome of the vote for each position.

**MOTION MADE BY ELIZABETH GORYUNOVA TO APPOINT
PETER A. JENKINS FOR A SECOND TERM AS URCB CHAIR**

SECONDED BY EDD C. JOHNSON

MOTION CARRIED AND PASSED UNIAMOUSLY

**MOTION MADE BY PETER A. JENKINS TO APPOINT
ELIZABETH GORYUNOVA FOR A SECOND TERM AS URCB
VICE CHAIR**

SECONDED BY FRANK D. DEROSSO

MOTION CARRIED AND PASSED UNIAMOUSLY

**c. Subcommittee Recommendations for Routine Reporting from the
Division (Board Action Item)**

Peter A. Jenkins, Chair, informed the Board that Elizabeth Goryunova would be reporting to the Board on this item. Ms. Goryunova distributed the chart (attached) to each of the Board members. She had also emailed the chart to each of the Board members.

Elizabeth Goryunova, Vice Chairwoman, informed the Board that at the last Board meeting (March 2009), there was a proposal by one of the Board members to establish routine-reporting by the Division staff to the

Utah Radiation Control Board. Ms. Goryunova said the chart established timeliness, efficiency, and order for the staff reporting. The routine-reporting would also be helpful for new Board members. Ms. Goryunova reported that when the workshop-subcommittee met they decided that the items would need to be reported on monthly, quarterly or annually, and some "as available." Ms. Goryunova said that as the urgency of some of the items came about their category could be changed. Ms. Goryunova asked the Board for additional comments or changes.

Dane L. Finerfrock, Executive Secretary, informed the Board that when the subcommittee got together there was a discussion that there would not be oral presentations. The reporting would consist of a one-page written summary. The report would be provided in the monthly packet or the packet at the end of the quarter. The report would consist of the subjects listed on the subcommittee's chart.

William J. Sinclair, Acting Executive Director, asked for a couple of changes to the subcommittee's chart. On the "as available" list, the item which reads: "**Governor's report**"--change to read: "**the Balance Score Card.**" Mr. Sinclair also requested this item be moved from the "as available" to "monthly" reporting on the chart. He said the Balance Score Card report is sent to the Governor from the Department of Environmental Quality on the "15th" of each month. He said that prior to sending the report to the Governor that he would give Mr. Finerfrock a copy of it for the Board's packet.

Peter A. Jenkins, Chair, asked that the Board adopt routine, written-reporting by DRC staff to the Board with the requested changes.

**MOTION MADE BY FRANK D. DEROSSO TO ADOPT THE
ROUTINE WRITTEN REPORTING WITH THE REQUESTED
CHANGES**

SECONDED BY JOSEPH K. MINER

MOTION CARRIED AND PASSED UNANIMOUSLY

Peter A. Jenkins, Chair, informed the Board that the implementation of the routine written reporting would be adopted and would start in May 2009.

VIII. PUBLIC COMMENT
Please refer to Item V. a.

IX. The Next Scheduled Board Meeting: May 12, 2009 (Tuesday), 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 4:18 P.M.

CT Radiation Dose For the Utah Radiation Control Board

Peter Jenkins, MS, CHP
April 14, 2009

Recently there has been an increased interest from the medical and regulatory communities in the increased amount of medical radiation dose an average US citizen receives. The National Council on Radiation Protection and Measurement (NCRP) recently issued a new report¹ detailing this increase. Compared to the last significant study, which was conducted during the 1980's, there has been an approximate 300% increase in medical radiation dose.

The largest increase in dose comes from increased use of CT imaging; however CT imaging has become an invaluable tool in the treatment of patients. In recognition of this fact, it has been proposed that the Utah Radiation Control Board issue the attached letter to medical providers of CT imaging and Qualified Experts. The main purpose of the letter is to encourage providers to be an active participant in ensuring:

- that the dose received by the patient is justified for the indications
- that appropriate CT protocols are reviewed by competent physicians and physicists
- a quality control program is in place and maintained

Most of the stated purposes of the letter may be accomplished through facility accreditation of the CT equipment and program. It is suggested that each facility seek accreditation through the American College of Radiology (ACR). The ACR's accreditation program includes elements of Appropriateness Criteria, patient dose limits, and image quality control. The ACR's accreditation program is already mandatory for Mammography facilities and required for reimbursement by many insurance companies. In fact, the recent passage of the Medicare Improvements for Patients and Providers Act of 2008 (H.R. 6331, enacted July 2008) will require accreditation of CT, Nuclear Medicine, PET, and MR for Medicare reimbursement.

It is felt that facilities' participation in an accreditation program can be one way of demonstrating it's commitment to patient to providing safe, effective patient imaging.

It is therefore suggested that the Board accept the enclosed letter as a statement to be sent to all interested parties.

April 14, 2009
Item IV. a. Approval to Distribute Letter: "Raising Awareness of X-Ray Exposure to Patients"
Peter A. Jenkins, MS, CHP, DRC Chair
a) Report/Comments from Mr. Jenkins on his Approval of the Letter and Information on CT Imaging

¹ NCRP Report No. 160, *Ionizing Radiation Exposure of the Population of the United States*. March 2009.



State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY HERBERT
Lieutenant Governor

Department of
Environmental Quality

William J. Sinclair
Acting Executive Director

DIVISION OF RADIATION CONTROL
Dane L. Finerfrock
Director

Corrected Letter
DRC Board Meeting April 14, 2009
Item IV. a. X-Ray Registration/Inspection (Board Action Item)
Approval to Distribute Letter: "Raising Awareness of
X-Ray Exposure to Patients"

Radiation Control Board
Peter A. Jenkins, M.S., C.H.P., *Chair*
Elizabeth Goryunova, M.S., *Vice-Chair*
Scott Bird
Patrick D. Cone
Frank D. DeRosso, M.S.P.H., C.I.H.
Christian K. Gardner
Edd Johnson
Douglas Scott Kimball, D.M.D.
Colleen S. Johnson, Commissioner
Joseph K. Miner, M.D., M.S.P.H.
William J. Sinclair
John W. Thomson, M.D.
David A. Tripp, Ph.D.
Dane L. Finerfrock, *Executive Secretary*

April 14, 2009

ADDRESSEES

All Utah medical facilities with a registered computed tomography system and qualified experts.

During the past several years, the medical and medical physics communities have raised concerns about the widespread use of multi-slice computed tomography (CT) and the resulting increases in radiation exposure to patients. These concerns have most recently led to the "Image Gently Campaign: Working Together to Change Practice" sponsored by the Alliance for Radiation Safety in Pediatric Imaging (www.imagegently.org)*. While CT imaging is acknowledged as an essential tool for diagnosis, the overall radiation dose to the population, especially children, has grown dramatically with the introduction of multi-slice scanners.

The purpose of this letter is fourfold: to raise awareness of the radiation burden to patients; to encourage the use of appropriateness criteria in choosing the imaging modality to be performed; to urge conscientious quality control and the lowest radiation dose commensurate with good imaging; and, finally, to encourage facilities to seek American College of Radiology accreditation for their CT programs.

At a recent meeting of the National Council on Radiation Protection and Measurements (NCRP), one of the main topics of discussion was the use of CT. During the past two decades, medical exposures to ionizing radiation have increased in number and in dose, significantly raising the radiation burden to the population exposed. According to the NCRP, the largest increase comes from the use of CT scanning which is increasing 10-15 percent each year. There were approximately 3 million scans performed in the United States in 1980. By 2005, the annual number of scans had grown 20 fold, to 60 million. This type of growth has both potential benefits and risks. Specifically, the potential for making a diagnosis must be weighed carefully against the risk of carcinogenesis in the future.

When CT was first introduced, the examination was almost always requested in the form of a consultation with the radiologist. Today, the ordering practitioner has carte blanche access to all types of medical imaging procedures. This lack of a consultation eliminated the step whereby the radiologist acted as gatekeeper, thus preventing an honest discussion of the benefits versus the risks that are imposed by a specific imaging procedure or the availability of alternative imaging options. To provide guidance in ordering studies, the American College of Radiology (ACR)

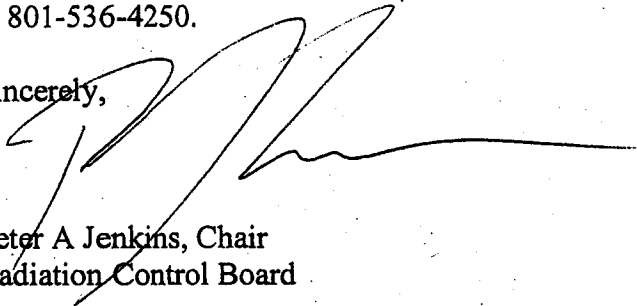
established appropriateness criteria describing when a specific type of imaging procedure should be performed. We encourage each and every physician to review the ACR Appropriateness Criteria[®] and whenever in question, to hold a consultation with the radiologist and discuss alternative imaging procedures.

Facilities have a number of options available when choosing and setting up their CT equipment that impact the dose given to the patient. In January of this year, the American Association of Physicists in Medicine (www.aapm.org) published Report No. 96, "The Measurement, Reporting and Management of Radiation Dose in CT." In addition to an overview of the technology and dose determination, this report provides methods for dose reduction. Of special interest are the technique charts based on age or size of the patient and a review of automatic exposure control systems. Facilities should use this document, along with other reports, such as Image Gently's "Pediatric CT Guidance and Worksheet on How to Develop CT Protocols for Children," to maximize image quality using the lowest feasible doses.

We also encourage all facilities to become accredited under the ACR Computed Tomography accreditation program. Information concerning the ACR Appropriateness Criteria as well as the accreditation program can be found at www.acr.org. The accreditation process assures that facilities periodically focus on the specific technology and "keep up" with the community standard.

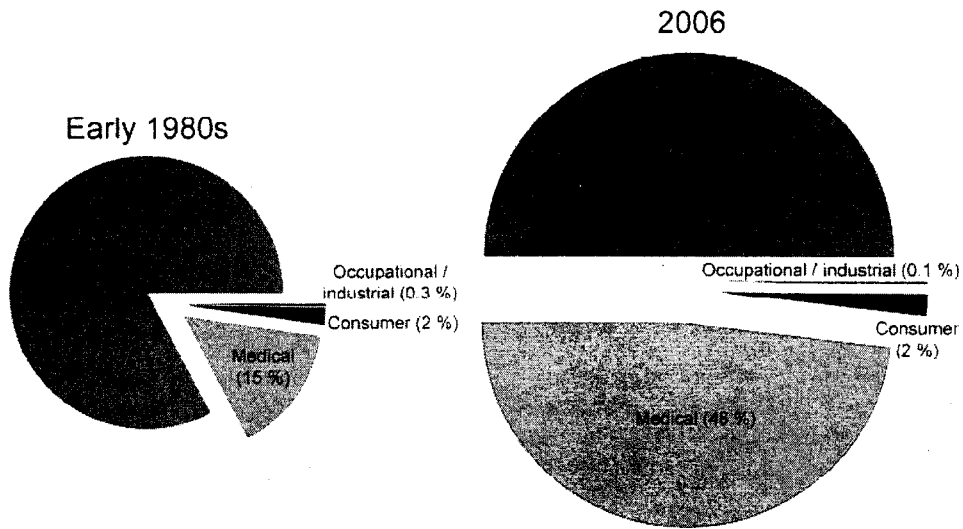
Thank you in advance for your cooperation and attention to this important public health concern. If you have any questions concerning this matter, please contact the Division of Radiation Control at 801-536-4250.

Sincerely,



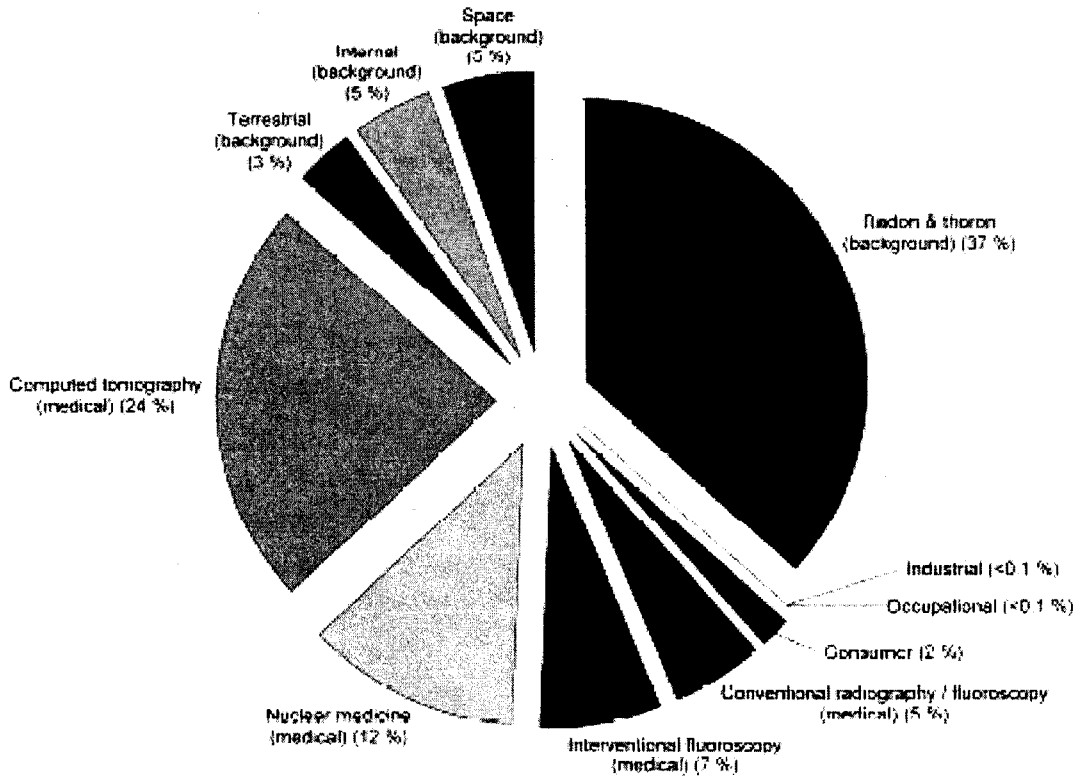
Peter A Jenkins, Chair
Radiation Control Board

* The founding organizations of the Alliance for Radiation Safety in Pediatric Imaging include the Society for Pediatric Radiology, the American College of Radiology, the American Society of Radiologic Technologists and the American Association of Physicists in Medicine. For a complete list of affiliated organizations and more information on the initiative, please go to www.imagegently.org.



	Early 1980s	2006
Collective effective dose (person-Sv)	835,000	1,870,000
Effective dose per individual in the U.S. population (mSv)	3.6	6.2

**All Exposure Categories
Collective Effective Dose (percent), 2006**



April 14, 2009
 Item IV. a. Approval to Distribute Letter: "Raising Awareness of X-Ray Exposure to Patients"
 Peter A. Jenkins, MS, CHP, DRC Chair
 Report/Comments from Mr. Jenkins on his Approval of
 the Letter and Information on CT Imaging
 (b) Comparison Pie Chart

UTAH RADIATION CONTROL BOARD POLICY - adopted _____

1. Utah State Radiation Control Board desires to exercise its authority to establish formal schedule of reports of the pertinent radiation control issues provided by the Utah Division of Radiation Control to the board. This will ensure efficiency, timeliness and order for the information transfer as well as currency of all board members and particularly those newly joined on all aspects related to their duties. It shall be the policy of the Radiation Control Board that any relevant information above and beyond the proposed schedule shall be added to the proposed schedule by the Executive Secretary of the Utah Division of Radiation control at his discretion.

2. The proposed schedule is as follows:

move
 to min file

Monthly	<u>All Radioactive Materials Licensing/Inspection</u> Class I, II, III violations and those violations involving monetary penalties
Quarterly	Radioactive Materials & X-Ray Licensing/Inspection per category: Number of licensees and permittees/ number of inspections. LLRW and Uranium mill licensing & inspection issues; same as above (No & Type, both LLW & U-mills. Radon Program Update
Semiannual	NWIC and Low Level Waste Forum report
Annual	Radioactive materials financial assurance, EnergySolutions capacity update
As available:	Governor's report (DRC part) <i>Balance Score Card - monthly Report</i> NRC updates Radioactive Waste: inspection modules program and Radioactive materials, uranium milling and low-level radioactive waste pertinent issues/changes (e.g. waste classification) Uranium processing report

April 14, 2009
 VII. Other Division Issues
 c. Subcommittee Recommendations for
 Routine Reporting from the Division (Board Action Item)
 Elizabeth Goryunova, M.S., Vice Chair
 Working Subcommittee Schedule Chart
 For the Board's Approval

- IV. X-Ray Registration/Inspection (**Board Action Item**)
 - a. Approval of Mammography Imaging Medical Physicists

**MAMMOGRAPHY IMAGING MEDICAL PHYSICISTS
CERTIFICATION OF APPLICANTS**

BOARD ACTION ITEM

In accordance with Section 19-3-104(4)(c)(ii) of the Utah Code Annotated, the Board may make rules to establish the certification procedure and qualifications for persons who survey mammography equipment and oversee quality assurance practices at mammography facilities. A number of individuals recently filed an application to be certified as a Mammography Imaging Medical Physicist. Craig Jones will present information about the certification of Mammography Imaging Physicists and the Executive Secretary will recommend an action for the Board to consider.

- V. Radioactive Waste (**Board Information Item**)
 - a. Judd vs. Utah Radiation Control Board
Petition to Intervene: Utah Court of Appeals

Pamela T. Greenwood
Presiding Judge
William A. Thorne, Jr.
Associate Presiding Judge
Russell W. Bench
Judge
Judith M. Billings
Judge
James Z. Davis
Judge
Carolyn B. McHugh
Judge
Gregory K. Orme
Judge

Utah Court of Appeals

450 South State Street
P.O. Box 140230
Salt Lake City, Utah 84114-0230

Appellate Clerks' Office (801) 578-3900
Judges' Reception (801) 578-3950
FAX (801) 578-3999
Utah Relay 1-800-346-4128



Marilyn M. Branch
Appellate Court Administrator

Lisa A. Collins
Clerk of the Court

April 10, 2009

RADIATION CONTROL BOARD
ATTN: DANE FINERFROCK
PO BOX 144850
SALT LAKE CITY UT 84114-4850



RE: Judd v. RCB
Appellate Case No. 20090276

Agency Case No. UT 2300249

Dear Appeals Clerk:

A petition for review in the above-referenced matter was filed in the Utah Court of Appeals on April 9, 2009. You are hereby requested to index and paginate the record, which shall include all of the proceedings and evidence taken in this matter.

If petitioner requests a transcript to be prepared in connection with the appeal, the certified record index should be compiled and transmitted to this court after the transcript is filed with the agency, consistent with Rule 12(b)(2)(A) of the Utah Rules of Appellate Procedure. In the event no transcript is requested, the record index should be transmitted to this court within twenty (20) days from the date of this letter. The record, itself, should not be sent to the appellate court until the parties have completed briefing.

If you have questions or comments regarding the appeal process or the agency's responsibilities, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Felafaoi Fano".

Felafaoi Fano
Judicial Services Rep.

V. Radioactive Waste (**Board Information Item**)

- b. Presentation by Representatives from HEAL – Utah
Regarding Depleted Uranium Disposal

ADVISORY COUNCIL

Dr. Lou Borgenicht
Dr. Jane Bowman
Margene Bullcreek
Mary Dickson
Ed Firmage
Claire Geddes
Boyer Jarvis
Lisa Kirk Colburn
Dr. Jerry Lazar
Jim McConkie, esq
Dee Rowland
Dr. Kent Staheli
Barbara & Norman Tanner
Kathy VanDame
Chip Ward
Terry Tempest Williams

BOARD OF DIRECTORS

Bob Archibald
Kirt Bateman
Sue Corth
Mike Cowley
Mary Draper
Ed Firmage, Jr.
Diane Mellen
Mary Ellen Navas
Jill Sheinberg

www.healutah.org



Healthy Environment ALLIANCE of Utah

68 S. Main St, Suite 400 Salt Lake City, Utah 84101 (801) 355-5055

April 17, 2009

Dear Mr. Finerfrock,

I am writing to request that HEAL Utah be given 15 to 20 minutes on the May 12th Radiation Control Board agenda to be make a presentation to the Board about our concerns related to the NRC's recent decision on depleted uranium (DU) disposal. These include:

- DU's long half life and decay chain
- The NRC's conclusion in a 1981 Draft Environmental Impact Statement that the Class A, B, and C limit for DU should be .05 microcuries per cubic centimeter—which the pure DU from enrichment facilities exceeds by a factor of 10
- How prior analyses that found the EnergySolutions Clive site suitable for large amounts of DU did not assess the radiation hazard at the time of peak dose and/or did not assess doses to onsite intruders
- How the decay products from DU will eventually exceed the state of Utah's Class B and C concentration limits for Radium-226
- A review of other analyses that found dose limits would be exceeded for disposal of large amounts of DU, even in an arid climate like Utah
- Other elements of the controversial history of the classification of DU as a Class A low-level waste

Thank you for considering my request, and please let me know if there's anything else you need from me before making a determination.

Sincerely,

Christopher Thomas, Policy Director

- VII. Other Division Issues (**Board Information Item**)
 - a. Summary from the Meeting of the Northwest Interstate Compact (NWIC) Low-Level Radioactive Waste Management

Report on the Low Level Waste Forum meeting (March 22-23, 2009) and the Northwest Interstate Compact (May 5, 2009)

LowLevel Waste Forum

Background:

In 1980, Congress passed the Low-Level Radioactive Waste Policy Act. This legislation gives states the responsibility to provide for disposal of commercial low-level radioactive waste and encourages states to form interstate agreements, or compacts, to cooperatively implement the law. The federal legislation of 1980, and the subsequent Low-Level Radioactive Waste Policy Amendments Act of 1985, were endorsed by the Governors of the 50 states.

Until 1985, representatives of the Governors worked to achieve the goals of the law through a committee of the National Governors' Association. After passage of the 1985 amendments, representatives of compacts and states established a separate organization, known as the Low-Level Radioactive Waste Forum, to promote the objectives of the federal law and the compacts. In 2001, the Low-Level Radioactive Waste Forum became an independent nonprofit organization—the Low-Level Radioactive Waste Forum, Inc.

The Low-Level Radioactive Waste Forum, Inc.'s objectives include

- facilitating state and interstate compact implementation of the federal Low-Level Radioactive Waste Policy Amendments Act;
- educating policy makers and the public about the management and disposal of low-level radioactive waste and about the aims of the federal legislation;
- fostering information sharing among state and interstate compact officials;
- providing opportunities for state and interstate compact officials to exchange views with federal officials and other interested parties; and
- supporting the goals of interstate compacts.

The Low-Level Radioactive Waste Forum, Inc. meets twice per year at locations determined by the membership. Each meeting includes reports on the latest developments in states and interstate compacts, interactive discussions of leading-edge policy issues, and expert presentations on regulatory, legal, and technical questions. Voting membership in the Low-Level Radioactive Waste Forum, Inc. is open to interstate compacts, states that are designated by a compact to host—or that currently host—a commercial low-level radioactive waste disposal facility, and unaffiliated states. Voting members representing interstate compacts are appointed by interstate compact commissions. Voting members representing host states and unaffiliated states are appointed by the Governors of those states. Non-voting membership is open to other

states that have joined interstate compacts, as well as to corporations and other interested parties. These members include federal agencies such as EPA, NRC, DOE, DOD, waste disposal companies such as WCS, EnergySolutions, American Ecology, Clean Harbors, radioactive waste generators and treatment facilities, and interested parties such as the Nuclear Energy Institute.

Meeting of March 23-24 in Columbia, South Carolina

Recent Developments

- ◆ Waste Control Specialists (WCS) low-level waste facility in Texas moving forward - Texas Compact Commission formed - indicating they will begin accepting waste at the WCS facility in 2010
- ◆ EnergySolutions versus Northwest Interstate Compact
- ◆ Impact on a new administration on the federal regulatory agencies
- ◆ NRC briefing on LLW - April 17, 2009
- ◆ SC message: Barnwell will not re-open as a national disposal site (e.g. Class B and C waste)

Challenging Issues Discussed

- ◆ Concentration Averaging
- ◆ National Policy on Ionizing Radiation
- ◆ Continued Operation of the Barnwell Site (decommissioning and operations)
- ◆ Change to Waste Classification
- ◆ Uranium Enrichment and Associated Residual Management Considerations
- ◆ How Can We Work Together to Develop a National Solution
 - ◆ Current and future management needs
 - ◆ Anticipated landmark events
 - ◆ Interested stakeholders
 - ◆ Obstacles to facility siting
- ◆ Lack of Disposal for Radioactive Sealed Sources and National Security
- ◆ NRC Regulatory Issue Summary for Interim LLRW Storage

Next meeting:

September 21-22, 2009 - Park City, UT (sponsored by the State of Utah) with optional EnergySolutions tour on the afternoon of the 22nd

Northwest Interstate Compact

Background:

Congress, in 1980, enacted and, in 1985, amended legislation authorizing states to form interstate compacts and to develop new regional disposal facilities for low-level radioactive waste. This legislation, the Low-Level Radioactive Waste Policy Act of 1980 as amended in 1985 (the Policy Act), was the result of efforts on the parts of the governors of the three states with existing commercial low-level radioactive waste disposal facilities (Washington, Nevada, South Carolina - the "sited states") to bring about a more equitable policy of low-level radioactive waste disposal across the nation.

The Policy Act stands as a compromise between states with existing facilities and states or compacts without disposal facilities. As part of the bargain, the sited states agreed to accept waste generated nationally until January, 1993. In return states and compacts without disposal capacity agreed to acquire it by January 1, 1993, either through the siting of a disposal facility of their own or through disposal contracts with other states or compacts. By that date, all states and compacts were to have either operational disposal sites or storage, or other interim waste management programs in place.

In 1985 Congress ratified the Northwest Interstate Compact on Low-Level Radioactive Waste Management. The guiding policy of the Compact is the protection of the health and safety of the citizens through the cooperative effort of the party states, while providing for the economical management of low-level radioactive wastes within the Compact region.

The original seven member states were Alaska, Hawaii, Idaho, Montana, Oregon, Utah, and Washington. The eighth state, Wyoming, joined the Compact in March of 1992.

As allowed by the Policy Act, the Richland, Washington, disposal site stopped accepting out-of-region LLRW as of January 1, 1993, except for that volume agreed to in the Rocky Mountain Compact (RMC) contract. There is an agreement between the Northwest and the Rocky Mountain compacts which allows LLRW waste from the RMC to be disposed at the US Ecology site in Washington, but limits the waste volumes to 6,000 cubic feet per year, plus a 3% per year growth factor. A one-time allowance (which has been completed) of 140,000 cubic feet for the Fort St. Vrain reactor waste was included. The contract term runs until site closure.

This contract is an attempt to protect and support the national compacting process through site consolidation. The RMC states generate very small volumes of waste, making a RMC disposal site uneconomical. The contract sets an example for states that have, as yet, been unable to form compacts or develop contracts for waste management.

There is an arrangement with EnergySolutions (3rd Amended Resolution and Order) that allows access for waste from other states and compacts to the facility. The waste must meet the current conditions of the Utah license. EnergySolutions does not accept waste

from commercial waste generators in the Northwest Compact including Utah. This arrangement is now being challenged in federal court (EnergySolutions vs Northwest Interstate Compact)

Meeting of May 5, 2009 in Seattle, Washington

- ◆ US Ecology overview – Mike Ault, VP, US Ecology
 - 2008 Disposal volume (includes LLW and NARM) : 32, 276 cubic feet
 - 2009 Disposal volumes to date: 10.804 cubic feet
 - 2008 revenue requirements
 - \$5,844,816 – total revenue collected
 - \$5,136,871 – revenue required for site operation
 - \$707,945 – excess returned to generators
 - 2009 revenue requirement: \$5,256,584
- ◆ Utah Activities Overview – Bill Sinclair, Utah Dept of Environmental Quality (handout)
 - 2009 General Session
 - EnergySolutions license renewal appeal
 - EnergySolutions amendment to convert the remaining capacity of the 11e(2) cell to LLW
 - Utah uranium mining/milling
 - Depleted uranium
 - Disposal fees
- ◆ Washington Activities Overview – Larry Goldstein, Washington Dept of Ecology
 - US Ecology Investigation
 - Started January 2008, expected to finish December 2010
 - Four quarters of vadose zone monitoring
 - Five quarters of ground water sampling
 - Public workshop – April 2009
 - Contamination found in soil, soil vapor, and groundwater
 - Next steps
 - Draft remedial investigation report
 - Proposal of interim remedial action
 - Construction of lower layer of cover
 - Interim remedial action report (with public notice and participation)
 - Closure Activities
 - Attempt to transfer \$3 M from closure fund to state general funds (did not occur)
 - July 7, 2009 target date for completion of cover design
 - Will use on-site soils and save \$2 M in cleanup costs
 - Need to select construction contractor
- ◆ LLW Forum Meeting Overview (see notes above on March 23-24, 2009 meeting)

- ◆ NRC LLRW Briefing Meeting – Mike Garner, Exe Director, NWIC
 - Mike Garner listened to the briefing via webcast (available in the NRC webcast archives) and reported the following:
 - The briefing consisted of several presenters
 - NRC staff (Larry Camper, Jim Kennedy, Steve Gary)
 - Key messages
 - Adequate disposal capacity, some lack of access for Class B and C LLW
 - Depleted uranium rulemaking proceeding
 - Focusing on 7 items as result of strategic assessment
 - On the reactor side, focused on safe storage and packaging
 - Expectation that 34 reactors will be decommissioned in 2030
 - Department of Energy (Abigail Cuthbertson, Frank Maricowski)
 - Greater than Class C waste EIS and path forward
 - Sealed sources presenting security risk
 - Concern with materials availability for dirty bombs
 - States/Compacts (Todd Lovinger, LLW Forum, Susan Jabonski, Texas, Organization of Agreement States and CRCPD representatives)
 - Discussion of the Waste Control Specialist Licensing process
 - Discussion of the national outlook for LLW disposal by the Forum
 - Industry representatives (Mike Blevins, Nuclear Energy Institute (NEI), Mike Ziddel, Assistant Radiation Safety Officer, Oregon State University)
 - NEI produced white paper in 2008 that included interim storage of Class B and C waste and how to reduce/optimize generation of radioactive waste (all classes)
 - Mr. Ziddel submitted a report to NRC on sealed sources citing lack of free market conditions that contribute to high costs, lack of disposal capacity for B/C sealed sources, need to amend or repeal the LLW Policy act, and use of DOE facilities or federal lands for disposal of LLW.
 - Question from Commissioners to NRC staff (Larry Camper) : Is it time to get the NRC LLW waste program out of the maintenance mode: Larry Camper responded “yes”

- ◆ Overview of Perma-Fix Northwest Operation – Larry McNamara, COO, Perma-Fix
 - Permafix was invited to give a presentation on its treatment operations, one which is located within the Northwest Compact
 - Permafix has facilities in Richland, WA, Oak Ridge and Kingston, TN, and Florida.
 - The Permafix facility in Richland was previously ATG who went bankrupt and was purchased by Pecos and then by Permafix in June 2007
 - Permafix offers low-level and mixed waste processing at its facilities – has LLW license, and RCRA and PCB permits
 - Some of the treatment options include incineration, thermal treatment, marco encapsulation, stabilization of metals, volume reduction, high dose waste remote handling capabilities, and TRU waste sorting/segregation, verification
 - Have been disposing of ATG legacy waste which has been a 10 years old problem for the state of Washington
 - Have reduced the amount from 2 million pounds to 150,000 pounds as of April 15, 2009
- ◆ Transportation Issues/Concerns – Ken Niles, Oregon Dept of Energy
 - Concern over 2 LLW transportation incidents recently in Oregon
 - Accident in December brought focus on shipments in December (truck hit black ice and crashed)
 - In both cases, no injuries or release of transportation incidents
 - Do shipments to the Richland site have to occur in December? Over 10 years, 10.71% of shipments have occurred during December, Oregon only showed a slight increase during the month based on hazardous materials data
 - Item was discussed but no action taken or needed
- ◆ Update on Legal Issues – Alice Blado – NWIC Counsel
 - Discussed the status of the lawsuit in Executive Session
- ◆ Committee Business
 - Status of Waste Attribution Issues
 - Compact will send letters to EnergySolutions reminding them of their reporting requirements
 - Issue of Puget Sound waste incinerated at the Bear Creek facility and sent to Clive (ES will reimburse US Ecology for the lost revenue as a result of this mistake)
 - Dawn Mining Company Extension Request
 - Allows Dawn Mining to continue disposal of waste sludge from wastewater treatment in the uranium mill tailings cell (continuation from 2000)
 - Perma-Fix Issues
 - 5 drums of co-mingled waste including some from Canada awaiting deposition
 - Occurred prior to the May 2006 clarifying amendment to the 3rd Amended Resolution and Order

- Permission asked to ship to Clive, the Committee determined during Executive Session in consultation with Compact attorneys not to allow this transfer until the lawsuit decision comes forth
- Permafix also addressed other "attribution" issues

- VII. Other Division Issues (**Board Information Item**)
 - b. Division Activities Report

Division of Radiation Control Activities Report Summary

April, 2009

Violations Assigned a Severity I, II or III or where a Monetary Penalty has been proposed.

1. EnergySolutions, LLC.: Severity Level III; Proposed Civil Penalty: \$2500.00; Issued 4/30/09. A tanker trailer from EnergySolutions, carrying organic and radioactive liquid, was found leaking at Port of Entry Station near Price, Utah.

1st Quarter 2009

X-Ray Program

X-Ray Program currently has 2534 registrants.

X-Ray Inspections conducted by staff: 144

X-Ray Inspections conducted by Qualified Experts: 38

Radioactive Materials Program

Radioactive Materials Program (RAM) currently has 183 licensees with 197 licenses issued.

RAM inspections conducted: 31

Two (2) new licenses were issued.

Thirteen (13) licenses were renewed and twenty-two (22) license amendments were issued.

One (1) license was terminated.

Low-Level Radioactive Waste Program

Fourteen (14) inspections were conducted at EnergySolutions in the following areas: 5- general radiation safety, 3-engineering inspections and 6- groundwater permit inspections.

Uranium Mill Program

Twelve (12) inspections were conducted at the uranium mills including 6 inspections at the Denison Mines Uranium Mill, 3 inspections at the Rio Algom (decommissioned mill site) and 3 inspections at the Uranium One Mill (standby status).