

Rhode Island Atomic Energy Commission

Meeting of April 5

8:30 A.M.

Dr. Mecca called the meeting of the Rhode Island Atomic Energy Commission to order. Present were Commissioners Dr. Nassersharif, Dr Nunes, Dr Gromet and Dr.Mecca, and Dr. Kadak. Staff: Dr. Terry Tehan, Hank Bicehouse, Jeff Davis, Zack Richards and Steve Guarino. Dr. Tom Mannock from State personnel also attended.

1. Approval of minutes of 8 October 2010 Meeting:

The minutes of the meeting were reviewed. Jeff Davis stated that the comment in item one regarding the schedule was not correct. After a discussion Dr. Nassersharif made a motion to delete the third sentence from item one. Dr Gromet seconded the motion. The Motion passed unanimously. Dr. Nunes made a motion to accept the minutes. Dr. Kadak seconded the motion. The Motion to accept the minutes passed unanimously. (Enclosure 1)

2. Duties and responsibilities of RIAEC- a discussion was held regarding the duties and responsibilities of the commission given that the enabling legislation was over 50 years old and many of the functions in that legislation were now shared or taken over by other agencies. Given the staff's opposition to the Commission's

consideration of this subject and reluctance to develop a comprehensive review, Dr. Mecca stated that he would try to find a political science student to research the subject and get back to the Commission with the findings.

3. NRC Re-licensing –Jeff Davis stated that all but three RAI items had been answered and Argonne National Lab personnel were working them. He is working on updating the Technical Specifications and that should be done by the September deadline. We have not received any more questions from the NRC, which indicates that we will get feedback on all the questions at once.

4. Budget-Dr. Tehan stated that we would probably end the year slightly in the red due to unbudgeted travel and training cost. (Enclosure 2)

5. Web site/ Fuel Shipment –Steve Guarino gave a brief on the web site and fuel shipment status. (Enclosure 3)

6. Facility Utilization-Zack Richards gave an extensive briefing on facility operations and utilization. (Enclosure 4)

7. Dr. Reinhardt appointment to NRSC. After an extensive discussion on the needs of the Safety Committee, three motions were made. A motion to approve Dr. Reinhardt's nomination was made by Dr, Nunes and seconded by Dr. Gromet. The motion was approved unanimously. Dr. Kadak made a motion to have Dr. Tehan contact Electric Boat, NUIC, and Millstone Power Plant to find additional members. Dr. Nassersharif seconded the motion. The motion passed unanimously. Dr. Nunes made a motion to have the commissioners find another individual from URI to fill the empty slot required by the technical specifications and the Charter. Dr. Nassersharif seconded the motion. The motion passed unanimously.

(Enclosure 5 Dr. Reinhardt's resume)

8. New Business-A discussion was held regarding emergency procedures for an accident beyond the scope of current emergency planning considerations. Dr. Kadak requested that the staff document the preparations to deal with events similar to the Japanese earthquake and Tsunami experience.

10. Adjourn Dr. Mecca requested a motion to adjourn. Dr. Kadak made the motion and Dr. Nunes seconded it. It passed Unanimously.

Enclosure 1. Meeting minutes

Minutes of the Rhode Island Atomic Energy Commission

Meeting of 8 October 2010

8:30 A.M.

Dr. Mecca called the meeting of the Rhode Island Atomic Energy Commission to order. Present were Commissioners Dr. Nassersharif, Dr Nunes, Dr Gromet and Dr.Mecca, and staff: Dr. Terry Tehan, Jeff Davis, Zack Richards and Steve Guarino. Dr. Kadak was excused.

Minutes of the 14 May 2010 RIAEC Meeting.

Dr. Nunes made a motion to accept the minutes. Dr. Nassersharif seconded the motion. The minutes of the meeting were reviewed. A Motion to accept the minutes passed unanimously. (Enclosure 1)

1. NRC Re-licensing – (Enclosure2) a discussion was held regarding the status of the license renewal efforts. Dr. Mecca thanked Jeff Davis for coordinating the RAI response effort. His expected completion date (end of the year) was challenged as to feasibility and he was encouraged to revise accordingly to a realistic schedule.

2. Budget- (Enclosure 3) a discussion was held regarding the FY2010/2011 state budget. The Director pointed out that payroll had been encumbered for the rest of the year and the remaining operating budget would likely be used up by the third quarter based on

historical spending patterns. The FY 2011-2012 budget submission did not contain the requested 5%, 10% and 15% cuts because they would jeopardize NRC license renewal financial assurance requirements. While the commission intends to cut insurance and LLW Forum Membership, there is a chance that the commission may need to justify the proposed budget to the Governor to prevent further cuts.

3. Web site/ Fuel Shipment - (Enclosures 4 and 5) Steve Guarino discussed the recent fuel shipment. The initial shipment went well and procedures are being updated to reflect lessons learned. The next shipment is scheduled for early December. In regard to website development, he stated that the state will host the website and we are working on modifying our software to meet state requirements.

4. Facility Utilization – (Enclosures 7 and 8) A discussion was held regarding facility utilization. Zack Richards presented a plan for updating the center's information technology systems. Dr. Mecca pointed out that a top down approach should be utilized from the start of the project. Dr. Tehan stated that the funding from the project may be available from NNSA and that they are scheduled to do an audit of the facility in April. Dr. Mecca thanked the staff for their written reports and, with the concurrence of members present made three suggestions to the newer staff: 1. Try to get these to the Commission at least a couple of working days prior to the meeting as opposed to the evening before the meeting; 2. Summarize the

significant points; 3. We have numeric indices of utilization for the reactor – let's try to identify some quantitative measures for the utilization of other resources including staff.

5. Dr. Nassershrif brought up the question of the RIAECs duties and responsibilities under state law and our relationships with other state agencies. After a discussion of the issue, it was decided that a review of state statutes should be conducted and the full matter of the RIAEC's responsibilities be considered at the next meeting. . Dr. Nassershrif made a motion to review the state laws for responsibilities of the RIAEC at the next Commission meeting. Dr. Gromet seconded the motion. The motion passed unanimously.

6. Dr. Mecca stated that the next commission meeting should be held the last part of January or early February 2011. Dr. Tehan stated that a doodle schedule would be posted and requested that commission members fill it out as soon as possible so that a meeting date could be finalized.

7. Dr. Nunes made a motion to adjourn. Dr. Nassershrif seconded the motion. The motion passed unanimously

ENCLOSURE 2 Budget

General Account- We went in to the red and transferred \$25K from the URI sponsored research account to cover the shortfall. The short fall was primarily due to unbudgeted training and travel for Zack and Steve and student intern salary which ultimately needs to be reimbursed from Nuke Eng Education grant. We currently have \$17,610 for the rest of the fiscal year, which ends June 30. We will probably end up around \$15k in the red at current reduced spending levels.

Gadolinium account- we have \$14,915 left which is being used for the URI student projects such as the sample system

Nuke Eng Education -we have 20,958 but only have spending authority for \$10K-this funds the student interns

Infrastructure-we have 79,322 because we are behind on the secondary work due to concentrating on RAIs. Jeff and the OPTO people are working on finishing the work so we can close out this grant which is an equipment only grant and has been extended by DOE twice at our request.

URI Sponsored research-\$ 111,914 left to pay salaries and benefits, insurance and electricity.

Asset Protection (capital budget)- two projects in the works- window and doors. One project submitted-rigging out old ventilation from reactor room. Bids came in low for windows and doors (around 15K

each) but we are having difficulty getting them through purchasing and the money has to be spent this fiscal year

Enclosure 3

Enclosure 5

Reinhardt, Christopher Peter

POSITION TITLE

President and CEO

eRA COMMONS USER NAME

Reinhardtc

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)

INSTITUTION AND LOCATION

DEGREE

(if applicable)

YEAR(s)

FIELD OF STUDY

Lycoming College, Williamsport, PA

B.S.

1986

Physics

University of Massachusetts Lowell, MA

M.S.

1992

Radiological Science

University of Massachusetts Lowell, MA

Ph.D.

1994

Physics

Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

A. Positions and Honors.

Research and Professional Experience:

1997 – Present Co-Founder and President, BioPhysics Assay Laboratory (BioPAL), Worcester, MA.

1995 – 1997 Assistant Professor, Department of Nuclear Medicine, UMMC, Worcester, MA.

1995 – 1997 Laboratory Director, Myocardial Isotope Research Laboratory, UMMC, Worcester, MA.

1994 – 1996 Instructor, Department of Nuclear Medicine, UMMC, Worcester, MA.

1989 – 1994 Associate Researcher, MIRL, UMMC, Worcester, MA.

1987 – 1989 Health Physicist, Department of Environmental Health and Safety, Harvard University, New

England Regional Primate Research Center, Southboro, MA.

Dr. Reinhardt is the inventor of 1 US patents and 7 filed patent applications.

B. Selected Publications.

- 1. Nolan BG, Ross LA, Vaccaro DE, Groman EV, Reinhardt CP: Validation of functional immunoassay technology for gadolinium-DTPA to measure glomerular filtration rate in dogs. Am J Vet Res 2009;70:547-552.**
- 2. Reinhardt CP, Germain MJ, Groman EV, Mulhern JG, Kumar R, Vaccaro DE: Functional immunoassay technology (FIT) a new approach for measuring physiological function: (1) Application of FIT to measure glomerular filtration rate (GFR). Am J Physiol Renal Physiol. 2008;295:F1583-1588.**
- 3. EV Groman, Yang M, Reinhardt CP, Weinberg JS, Vaccaro DE: Polycationic nanoparticles: (1) Synthesis**

of a polylysine-MION conjugate and its application in labeling fibroblasts. J Cardiovasc Trans Res 2009;2:30-38.

4. Vaccaro DE, Yang M, Weinberg JS, Reinhardt CP, Groman EV: Cell tracking using nanoparticles. J of Cardiovasc Trans Res 2008;1:217-220.

5. Groman EV, Bouchard JC, Reinhardt CP, Vaccaro DE: Ultrasmall mixed ferrite colloids as multidimensional magnetic resonance imaging, cell labeling, and cell sorting agents. Bioconjug Chem 2007;18:1763-1771.

6. Mandelbrot DA, Dhaliwal SK, Evan NR, Licho R, Reinhardt CP, Jaffry S: Validation of neutron activation as a novel method to determine glomerular filtration rate. Nephron Clin Pract 2007;107:c117-c122.

7. Groman EV, Reinhardt CP: Method to quantify tail vein injection technique in small animals. Contemp Top Lab Anim Sci. 2004; 43:35-38.

8. Albert DA, Cohen AJ, Mandelbrot, DA, Reinhardt CP and Dickson EW: Neutron-activation analysis: A novel method for the assay of iohexol. J Lab Clin Med. 2003; 141:106-109.

9. Reinhardt CP, Dalhberg S, Tries MA, Marcel and Leppo JA: Stable labeled microspheres to measure perfusion: Validation of a neutron activation assay technique. *Am J Physiol.* 2001; 280:H108-H116.
10. Groman EV and Reinhardt CP: Hepatocyte Asialoglycoprotein receptor assay using stable isotopes and neutron activation. *Clinical Chemistry* 2000; 42:1519-1521.
11. Dickson EW, Lorbar M, Porcaro WA, Fenton,R, Reinhardt CP, Gysembergh A, Przyklenk K. Rabbit heart can be "preconditioned" via transfer of coronary effluent. *Am J Physiol.* 1999; 277:H2451-H2457.
12. Holly TA, Dahlberg ST, Gilmore PM, Reinhardt CP, Leppo JA: The effect of ischemic injury on the cardiac transport of TcN-NOET in the isolated rabbit heart. *J Nucl Cardiol.* 1999; 6:633-640.
13. Dickson EW, Reinhardt CP, Renzi FP, Becker RC, Porcaro WA, Heard SO: Ischemic preconditioning may be transferable via whole blood transfusion: Preliminary evidence. *J Thromb Thrombolysis.* 1999; 8:123-129.
14. Takahashi N, Reinhardt CP, Marcel R, Leppo JA: Correlations between uptake of technetium-99m Q12 and thallium-201 myocardial perfusion and viability in a model of acute coronary reperfusion. *J Nucl Med.* 1998; 39:159-165.
15. Zafrir N, Leppo JA, Reinhardt CP, Dahlberg ST: Thallium

reinjection versus standard stress-redistribution

imaging for prediction of cardiac events. J Am Coll Cardio. 1998; 31:1280-1285.

16. Weinstein H, Reinhardt CP, Leppo JA: Direct detection of regional myocardial ischemia with ^{99m}Tc-nitroimidazole in rabbits. J Nucl Med. 1998; 39:598-607.

17. Takahashi N, Reinhardt CP, Marcel R, Leppo JA: Myocardial uptake of Tc-^{99m}-tetrofosmin, sestamibi and thallium-²⁰¹ in a model of acute coronary reperfusion. Circulation. 1996; 94:2605-2613.

18. Heller LI, Villages BJ, Reinhardt CP, Dahlberg ST, Marcel R, Leppo JA: Teboroxime is a marker of reperfusion following a myocardial infarction. J Nucl Cardiol. 1996; 3:2-8.

19. Reinhardt CP, Weinstein H, Marcel R, Leppo JA: ¹²⁵I-BMIPP as a marker of myocardial hypoperfusion: Comparison to ²⁰¹Tl by quantitative dual tracer autoradiography and segmental tissue analysis. J Nucl Med 1995; 36:1645-1653.

20. Reinhardt CP, Leppo JA: A method to evaluate tracer kinetics in small laboratory animals using a series of thermoluminescent dosimeters. Med Phys. 1995; 22:1299-1305.

21. Weinstein H, Reinhardt CP, Wironen JF, Leppo JA: Myocardial uptake of thallium-²⁰¹ and technetium-^{99m}-labeled sestamibi after ischemia and reperfusion: Comparison by quantitative dual-tracer

- autoradiography in rabbits. *J Nucl Cardiol.* 1994; 4:351-64.
22. Weinstein H, King MA, Reinhardt CP, McSherry BA, Leppo JA: A method of simultaneous dual-radionuclide cardiac imaging with technetium-99m and thallium-201 I: Analysis of interradiation crossover and validation in phantoms. *J Nucl Cardiol.* 1994; 1:39-51.
23. Reinhardt CP, Weinstein H, Wironen J, Leppo JA: The effect of triphenyl tetrazolium chloride staining on the distribution of radiolabeled pharmaceuticals. *J Nucl Med* 1993; 34:1722-1727.
24. Weinstein H, Reinhardt CP, Leppo JA: Teboroxime, sestamibi and thallium-201 as markers of myocardial hypoperfusion: Comparison by quantitative dual-isotope autoradiography in rabbits. *J Nucl Med.* 1993; 34:1511-1517.
25. Karellas A, Lin H, Reinhardt CP, Harris LJ, Brill AB: Imaging of radionuclide emissions with a low-noise charge-coupled device. *IEEE Trans Nucl Sci* 1993; 40:979-982.

C. Research Support

Selected Completed Research Support

1 R43 RR20235 Reinhardt (PI) SBIR Phase I 5/01/05-4/30/06

NIH/NCRR

An accelerator based neutron activation device.

The study will further develop and theoretically test a novel design for a neutron generator for the measurement of stable isotope probes in biological material.

Role: PI

1 R44 HL073472 Reinhardt (PI) SBIR Phase II 8/01/04-7/30/06

NIH/NHLBI

Method to evaluate and quantify myocardial injections.

The study will further develop and experimentally evaluate a novel set of reagents to measure the efficacy of

catheter-based injection systems.

Role: PI

1 R44 DK57502 Reinhardt (PI) SBIR Phase II 8/01/04-7/30/06

NIH/NIDDK

Novel method to measure glomerular filtration rate.

The study will further develop and experimentally evaluate a nonradioactive method to measure glomerular filtration rate (GFR) using a stable isotope filtration marker and neutron activation analysis.

Role: PI

1 R43 HL073472 Reinhardt (PI) SBIR Phase I 7/01/03-6/30/04

NIH/NHLBI

Method to evaluate and quantify myocardial injections.

The study further developed a novel set of reagents to measure the efficacy of catheter-based injection systems.

Role: PI

1 R43 HL60403 Reinhardt (PI) SBIR Phase I 2/15/99-3/14/00

1 R44 HL60403 SBIR Phase II 5/01/01-4/30/03

NIH/NHLBI

Nonradioactive method to measure organ blood flow.

The study further developed and experimentally evaluated a set of nonradioactive, stable isotope labeled microspheres for use in measuring regional organ perfusion in in vivo models. These materials have been successfully commercialized.

Role: PI

1 R43 DK57972 Reinhardt (PI) SBIR Phase I 9/1/00-8/30/01

NIH/NIDDK

Novel method to measure bile acid transport.

The study further developed methods to label cholic acid with a stable lanthanide that would be suitable for neutron activation tracking and quantification in in vivo systems. These materials have been successfully commercialized.

Role: PI

1 R43 DK58434 Groman (PI) SBIR Phase I 9/15/00-8/14/01

NIH/NIDDK

Hepatocyte asialoglycoprotein receptor assay.

The study further developed methods to manufacture probes directed

at the asialoglycoprotein receptor using the company's stable lanthanide labeling technology for applications in neutron activation-based research.

These materials have been successfully commercialized.

Role: Researcher

1 R43 DK57502 Rusckowski (PI) SBIR Phase I 5/1/00-4/30/01

NIH/NIDDK

Novel method to measure glomerular filtration rate.

The study further developed reagents to measure glomerular filtration rate (GFR) using a stable isotope filtration marker and neutron activation analysis.

Role: Researcher