Preliminary Version- Pending Commission Approval

Minutes of the Rhode Island Atomic Energy Commission Meeting 27 January 2009.

Dr. Mecca called the meeting of the Rhode Island Atomic Energy Commission to order. Present were Commissioners: Dr. Mecca, Dr. Gromet and Dr. Nassersharif and staff: Dr. Terry Tehan, Henry Bicehouse, Ed Wentz and Jeff Davis

1. Minutes of the 24 October 2008 RIAEC Meeting.

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

2. Dr. Nassersharif made a motion to recommend the appointment of Dr. Nunes to replace Dr. Allen on the RIAEC Dr. Gromet seconded the motion. The motion passed unanimously.

3. Budget: Dr. Tehan discussed the current budget and answered questions from the Commissioners. (see enclosure 2)

4. Projects: Facility Utilization: A discussion was held regarding Ed Wentz's memo concerning ongoing projects.(See Enclosure 3)

5. The next two Commission Meetings will be at 8 A.M. on Tuesday 7 April and Tuesday 4 August 2009 at the Nuclear Science Center.

11. Dr. Gromet made a motion to adjourn. Dr. Nassersharif seconded the motion. The motion passed unanimously

Enclosure 1

Minutes of the Rhode Island Atomic Energy Commission Meeting 24 October, 2008.

Dr. Mecca called the meeting of the Rhode Island Atomic Energy Commission to order. Present were Commissioners: Dr. Mecca, Dr. Allen, Dr. Gromet and Dr. Nassersharif and staff: Dr. Terry Tehan, Henry Bicehouse, Ed Wentz and Jeff Davis

1. Minutes of the 24 July 2008 RIAEC Meeting.

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

2. Dr. Allen made a motion to appoint Dr. Hamouda Ghonem to replace Dr. Knickle on the Nuclear and Radiation Safety Committee (NRSC). Dr. Nassersharif seconded the motion. The motion passed unanimously.

3. Dr. Nassersharif made a motion to approve Dr. John Breen as the Chairman of the Nuclear and Radiation Safety Committee effective 1 December 2008. Dr. Allen seconded the motion. The motion passed unanimously

4. Budget: Dr. Tehan discussed the current budget and answered questions from the Commissioners.

5. Broad Scope license . A discussion was held regarding the need to cut costs due to the state budget crisis. Based on recommendations from the NRSC and the RSO, the RIAEC reviewed the need for the Broad Scope license.

Dr. Gromet made a motion to terminate the Broad Scope license. Dr. Nassersharif seconded the motion. The motion passed unanimously

6. Projects: Facility Utilization.. It was suggested that RINSC look into an institute or teacher workshop such as the NSF Chatauqua or DOE

teacher workshops, which would focus on teacher preparation and orientation in applied nuclear science such as NAA and Gamma Ray Spectroscopy. This would have the benefit of a wide geographic market, funding and raising awareness of the capabilities of RINSC and the possibility of expanding our capacities. These things were mentioned as alternatives to a course for students, which would require marketing/negotiation with teachers to modify their curricula in order to add such an experience for their students.

7 .NRC Inspection results- Jeff Davis presented a summary of the recent NRC inspection that had no negative findings and no open items.

8. Dr. Allen made a motion to go into executive session Dr. Nassersharif seconded the motion. . The motion passed unanimously.

9. Dr. Gromet made a motion to end the executive session. Dr. Nassersharif seconded the motion. . The motion passed unanimously.

10. The next Commission Meeting will be at 8 A.M. on Tuesday 27 January 2009 at the Nuclear Science Center.

11. Dr. Allen made a motion to adjourn. Dr. Nassersharif seconded the motion. The motion passed unanimously

Enclosure 2

From: Terry Tehan [ttehan@gso.uri.edu]

Sent: Wednesday, January 21, 2009 9:43 AM

To: Terry Tehan; Kadak@earthlink.net; BN@uri.edu;

L_Gromet@Brown.edu;

smecca@providence.edu

Subject: RIAEC 27 Jan Meeting Budget Summary Report

To all:

The 8 January 2009 Budget Accrual Report Executive Summary had us $23,671
in the black and our spending level was $84,908 less then last fiscal year.
I checked with Bill Golas today and he has us around $1,000 in the Black
with the latest payroll accruals. The 2009 supplemental and 2010 request
write-ups are attached. Needless to say, everything is in a state of flux
with the supplemental due out in a few weeks. The 40% overhead charge from
URI is currently making up for our operating budget shortfalls and keeping
us in the black.

The two capital budget projects have been awarded. the rear loading dock,
door and hall have been completed by Tower Construction and look good. The
back parking lot paving is waiting for warm weather.

The remaining balances in federal accounts are:

Nuclear Energy research $1,200

Reactor Instrumentation $1,092

Gadolinium research $80,678

Reactor Sharing $22,416

Enclosure 3

20 January, 2009

From: Edward F. Wentz, Assistant Director of Operations

Rhode Island Atomic Energy Commission

To: Dr. Stephen Mecca, Chairman

Rhode Island Atomic Energy Commission

Via: Dr. Terry Tehan, Director

Rhode Island Atomic Energy Commission

Subj: STATUS OF UTILIZATION INITIATIVES AT RINSC

1. The current utilization of RINSC facilities includes:

a. BioPAL-- BioPAL has continued to use NAA to support research and diagnostic work in the biomedical field. Ongoing work includes:

1. Cell Tracking

2. Renal Failure Diagnostics

3. Pharmaceutical Uptake

b. Jazwa--Chris Jazwa has been using NAA to characterize the chert outcropping on Catalina Island in California. Ancient Indians used chert from these outcroppings to make shell bead tools. Ultimately, Chris and his colleagues from Pomona College are attempting to link specific shell bead tools to specific chert outcroppings. Chris is hoping to have a paper on the use of NAA to characterize chert, ready to present in the fall.

c. Dr Leith--Dr. John Leith is working on doing GdNCT on Brain Tumors in Mice. The thermal column has been modified so that it would be possible to fit a mouse holder in it. The beam in this location needs to be characterized.

Dr Leith is researching a proposal for a new grant to research the use of Tetraiodothyroacetic Acid (Tetrac) and in Vivo Neutron Irradiation on Brain Tumors.

d. Dr Pszenny--Dr. Alex Pszenny did not get NSF funding to continue his work involving halogen exchange between the ocean and the air. He is continuing to try to get funding. When this occurs, he expects to have approximately 1500 samples to analyze using NAA.

e. Dr Nunes

i. WIDE Angle Neutron Scattering--The Wide Angle Scattering instrument on Beam Port L2 has been refurbished. All of the

hardware is working. Steve Guarino has developed the motor control and data acquisition software for the instrument. Dr Nunes and Steve Guarino are currently in the final testing phase of the instrument and software. Dr. Tony Nunes will be using this instrument to do Plank's Constant, and neutron scattering experiments as part of his physics classes. Dr Nunes and Steve Guarino have moved into the lab space on the ground floor previously occupied by Dr Leith.

ii. Small Angle Neutron Scattering--The detector for the Small Angle Scattering instrument on Beam Port R2 has been fabricated. The detector shielding box has been completed. Steve Guarino has developed the data acquisition software for the instrument. This software will be essentially the same software that is used at Oak Ridge National Laboratory (ORNL). Steve presented the project at the recent TRTR meeting on Cape Cod. Steve will be using this instrument for his Ph.D. dissertation. In the future, ORNL may send some of its users to RINSC to do preliminary work prior to using the facilities at Oak Ridge. In the near future the neutron scattering equipment will be web-based, allowing researchers to utilize our facility from anywhere in the world. Glade Wittwer, a senior Computer Sciences student at URI is creating the interface and website to allow for the remote use. This unique approach will allow researchers to do research here at RINSC without the added cost and time of travel. Personnel from ORNL and Steve Guarino will be performing the final connection and retest of the new computer for R-2 on Feb 11. The SANS instrument will then be ready for final retesting.

f. Infoscitex--Infoscitex Corporation produces glass for use in solar panels. They are trying to produce glass that has minimal discoloration as a result of being exposed to radiation. Their glass specimens are 15 mm X 15 mm slides. They need a gamma exposure of approximately 10^5 to 10^6 R. The institution that was providing their radiation source is no longer available, so they are looking for a new provider. They currently have a six month backlog of glass slides to irradiate.

g. Dr Mecca—Dr Steve Mecca and a student, Mike Oumano, are using INAA to characterize sediment in a small man-made estuary near Middletown, RI. Mike ha s already done short irradiations of his samples. This week the long (75 minute) irradiations and analyses are being performed.

h. Facility Tours--RINSC has continued to provide tours for education institutions and other interested parties. Tours provide an opportunity to educate the public about the nuclear industry, and plant seeds for potential future utilization. Our tours have included:

Several High School science classes
Boy Scouts
Environmental Journalism students
Several college science/engineering classes
Several Engineering students

Several University Professors

i. URI Mechanical Engineering Design Class—Four students from Dr Nassersharif's Mechanical Engineering Design class are designing and constructing a modular, multi-head tool for performing handling operations in the pool. The project will improve our ability to handle fuel as well as perform other operations in the pool as necessary. The tool has been designed. The students have a modification to make in their design prior to going into the prototype development. As of the end of the first semester the team is on target to be completed by the end of the spring semester. A copy of their project and design can be obtained for interested parties.

j. Three Rivers Community College (TRCC) Nuclear Engineering Technology Degree Program—A partnership has been formed with TRCC, led by Dr James Sherard, and RINSC. RINSC will provide facilities and support for their AS Degree program in Nuclear Engineering Technology. The program previously used WPI, then briefly UMASS-Lowell for five (5) laboratory sessions each year for their "senior" class. Those labs and critical experiments will be performed at RINSC in the future. One (1) session was held in December utilizing an existing experiment for half life determination of titanium wire. The RINSC Asst Director is also now a sitting member of the programs advisory committee which meets each December.

2. There are several initiatives designed to increase the utilization of our facility.

a. Marketing Emails— A set of targeted emails is under development to be used in conjunction with the new website being developed for use as marketing tools. The emails are being tailored to the needs and possible uses of our facilities for the individual areas of research and education.

b. Gemstone Irradiation—A company from Oregon has contacted RINSC concerning the irradiation of Topaz. The RINSC staff is in the process of analyzing the ability to efficiently irradiate the gemstones based on their fast flux, fluence, and volume requirements. We have conducted several experiments to ascertain the ability of RINSC to support this company in a way that would be worthwhile for both parties. The removal of the central irradiation facility reflector element provided excellent results. The results of the experiments prove that we can irradiate large volumes with a relatively high fast neutron flux. However, due to the requirement of the company to line the in core devices with cadmium we do not have the ability to operate in that configuration. Argonne National Lab is currently modeling an alternate configuration based on the approved configuration for Dr Ott's planned experiments utilizing a 17 element

core.

c. INAA User Group—An INAA user group with scientists and research reactors from around the US. This group was started by Dr Eby of UMASS at Lowell. Dr Eby presented on INAA at the TRTR meeting in Cape Cod. We will be marketing the user group to our researchers.

d. INAA Course—RINSC is still in the beginning stages of developing a class on Instrumental Neutron Activation Analysis to be offered to local industry, scientists, and college students at RINSC. The development of the course is in the conceptualizing and research phase. Major questions being researched currently are:

1) Marketing of the course
2) Funding for the course
3) Curriculum Development
4) Formation of partnerships with local universities to allow their students to participate in the class.

The course will allow us to expose future and current scientists to the capabilities of RINSC for their current and future research. This is evident in the number of students that have recently decided to utilize our facilities for research projects after being introduced to our capabilities.

e. Summer workshops for secondary and postsecondary educators in RI. Based on the Chetauqua model, the workshops would introduce educators to areas of nuclear science they are not familiar with. The workshops will give the teachers the tools to use nuclear science more effectively in their curriculum, familiarize them with the facilities at RINSC, and how they can be of use to them and their students. The workshops are still in the preplanning phase. The current plan for the workshop consists of a three day workshop in which various subjects will be discussed. Some of the topics include introductions to nuclear science, radiation, reactors, neutron scattering, and INAA. We are currently discussing partnerships with RITES (RI Technology Enhanced Science Program), and APC Corporation to provide funding and support for the program.

e. Space Utilization—The staff is continuing to consolidate, clean, and refurbish laboratory space at RINSC to provide a more marketable product to researchers. This effort includes upholding laboratory cleanliness and safety standards for those researchers already using out facility and providing clean well equipped, adaptable laboratories for future users.

An upgrade is being made to the cleanliness standards of the reactor room, and security and cosmetic improvements are being made to the grounds.

The paving contract has been awarded (awaiting work), and improvements to the loading dock, and rear door have been completed.

Specifications have been generated and bids have been solicited for several other projects to be completed incase monies become available for infrastructure and capital improvements by the new administration. These projects are relatively minor and meant to able to start quickly with little further planning when directed. These projects include:

-Replace all outside windows and selected doors

-Refurbish Control Room

-Replace Intake Air system for EPZ (heat/ac)

-Construction of a divider wall in classroom

-Replacing drop ceilings and lights in common areas

-Replace paneling with drywall in common areas

-Paving on North end of Building

-Finish rear parking lot paving

-Install lighting for rear parking lot

-Finish front landscaping

f. RINSC website—A RINSC website is currently under development. An intern, Glade Whittwer is designing the facilities website.

1) Low Cost alternative to brochure (no printing or postage)

2) Utilize targeted emails to attract potential users to our site

3) Utilize keyword searches (Google) to provide links to our site

4) Provide more information about our facility than in a simple brochure

5) Publish downloadable forms for prospective users to request services

6) Provide links to and from other university reactor websites as well as other research tools for researchers

7) Utilize as a gateway to the only web-based neutron scattering. (via a user name and password)

8) Allow users to access a web based simulation program for a wide range of reactor experiments.

9) Allow users to place experiment requests online, and upon approval provide samples to RINSC via mail (for irradiations) and retrieve the results via email.

10) Allow student and educators access to webcasts of lectures and workshops given at RINSC.

3. Other initiatives being undertaken to improve the facility and therefore our marketability:

a. Beta test platform for Thermofisher Scientific Nuclear Instrumentation. Following TRTR conference a discussion began with ThermoFisher to become their BETA test platform for new digital Wide Range Nuclear Instrumentation Equipment. We have been

preliminarily selected as the platform, and the staff will install the two (2) new systems in parallel with our current wide range monitors. With the current schedule the agreement will be finalized in the next few months with installation scheduled for late spring early summer 2009. Based on the success of this program there will be further collaboration with the company, to include possibly the development of a digital reactor safety system. Currently there are no digital safety systems approved for use by the NRC.

b. Quizdom--- A quizdom interactive remote system is being installed in the classroom to increase the effectiveness of classes and presentations to students using the classroom.

c. Webcasting—RINSC will soon have the capability to provide live streaming presentations and producing downloadable presentations for later use by students. Potentially, the first phase will be through OSHEAN.org. The same company that provides these and other services to URI, RIC, the war college and a host of other educational and state institutions in the state. OSHEAN.org loans the capture units required to produce these webcasts to their members. Later as funds become available the RINSC will be able to purchase our own capture system to use with OSHEAN.org when/if the demand warrants the purchase.

d. Modernization of our current rabbit system-- The current rabbit system requires a control system upgrade. In the near future an

OPTO-22 based control system will be designed and constructed for the rabbit system.

e. Dry gamma irradiation facility— Currently unusable, the Dry gamma room door is scheduled to be hung during calendar year 2009 to provide another usable irradiation facility.

f. Further upgrade of Reactor Control Systems—In the near future the remainder of the reactor control system, with the exception of the safety system will be upgraded using the OPTO-22 technology as a second phase following the rod control upgrade.

g. Currently we are developing proposal for a long term plan for the revitalization of laboratory spaces in the facility. The plan will be sequenced to allow for a cost effective, efficient upgrading of the facilities without hindering operations as monies become available in the future.

h. Senior staff members recently completed a course in Grant Proposal Writing in order to assist them in finding and acquiring financial resources for the facility.