

Development of Dose Conversion Coefficients for Radionuclides Produced in Spallation Neutron Sources

Quarterly Progress Report 9/1/04 – 12/31/04

UNLV/AAA University Participation Program

Phillip Patton and Mark Rudin
Principal Investigators

Project Summary

The research consortium comprised of representatives from several universities and national laboratories has successfully generated internal and external dose conversion coefficients for twenty radionuclides produced in spallation neutron sources. In addition, the group has identified twenty radionuclide that are missing electron capture files and eighteen additional radionuclides missing substantial physical data.

Personnel

Principal Investigators:

- Dr. Phillip Patton (Health Physics)
- Dr. Mark Rudin (Health Physics)

Graduate Assistants

- None, however have obtained Sung-Yop Kim for the spring semester (Health Physics)

National Laboratory Contacts

- Brent Boyack, AAA Project Leader for NEPA/Safety at Los Alamos National Laboratory
- Tony Andrade, Los Alamos National Laboratory

University and National Laboratory Participants

- Idaho State University
- University of Tennessee
- Oak Ridge National Laboratory

Management Issues

Personnel Issues:

No new students were added to the project over the fall semester. All graduate students are from Idaho State University. However, a graduate student from UNLV has shown interest in the project and will begin working on it next spring.

Budget Issues:

All expenditures appear to be on target and consistent with the budget set forth in the project proposal considering the extension. However, since the budget was carried over from the previous year, funds will not be able to support more than one graduate student.

Technical Issues

The following technical work has been performed to date on the DCC project:

Submitted the Data from this Work to National Journals

Two papers are in press in the Journal of Health Physics.

Investigated the Requirements to Produce Data for Radionuclides in Category 3

Several of the radionuclides first investigated lack the required nuclear data to calculate dose coefficients. The extension of the project has targeted investigating the feasibility of producing these rare radionuclides using the linear accelerator located on Idaho State University's campus. We have scheduled a meeting with Rich Brey for January to discuss the results he has obtained.