

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

TRIP REPORT

SUBJECT: Health Physics Society Annual Meeting
Project # 20.06002.01.352

DATE/PLACE: July 10–14, 2005
Spokane, WA

AUTHORS: James Durham

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TRIP REPORT

SUBJECT: 50th Annual Meeting of the Health Physics Society

DATE/PLACE: July 10 - 14, 2005
Spokane, WA

AUTHOR: James Durham

PERSONS PRESENT: James Durham (Center for Nuclear Waste Regulatory Analyses) and over 2,000 other attendees from around the world

BACKGROUND AND PURPOSE OF TRIP:

- To present the following paper at the "External Dosimetry II" technical session:
"Adding Radionuclides to the Varskin 3 Library Correctly" by J. Durham
- To perform official society duties as chair of the Summer School Committee
- To attend technical sessions on various topics related to health physics

SUMMARY OF PERTINENT POINTS AND ACTIVITIES:

The following are summaries of selected technical presentations attended. Since the proceedings of the meeting are available at <http://hps.org/documents/50finalprogram.pdf>, reporting here is limited to papers directly relevant to the potential high-level waste repository at Yucca Mountain.

The plenary session featured a presentation by L. Feinendegen from Brookhaven National Laboratory entitled "Low Doses of Ionizing Radiation: The Relationship Between Damage Induction and Biological Benefit Contradicts Validity of the LNT-Hypothesis." The presentation focused on an important topic in radiation protection that underlies the basis for predicting risk to people from small doses. The speaker's data suggested that there may be a benefit from exposure to small doses of radiation, which would contradict the LNT Hypothesis that there is a small risk at small doses.

K. Kielar presented a paper entitled "Skeletal Reference Dosimetry Model for the Adult Female" by Kielar, Shah and Bolch from the University of Florida. The model was developed from a 64-year-old female cadaver whose cause of death presented a low probability of skeletal deterioration. The researchers used actual tissue samples and images obtained using in-vivo CT, ex-vivo CT, and microCT scans. Models such as these form the basis for mathematical models that result in dose conversion factors used to estimate dose and risk in performance assessment calculations.

E. Douple and R. Jostes from The National Academies presented a paper entitled "Contributions to Radiation Risk Assessment by the Committee on Biological Effects of Ionizing Radiation (BEIR VII)." The speaker discussed the recently-released BEIR VII report on an assessment of the potential risks of low-dose, low-LET ionizing radiation. The charge to the committee was presented, the process employed by the committee was described, and the subject areas covered by the report were outlined. The results of BEIR VII were presented and compared to the results from BEIR V. The conclusion that the report reached was that the data that showed a beneficial effect of low doses of ionizing radiation were equally weighted by data that showed either a linear effect or, in some cases, an enhanced effect. Consequently, the committee found no compelling reason to abandon the linear no-threshold hypothesis. Reports such as BEIR VII form the basis on which national and international radiation recommendations and, ultimately, regulations are based.

B. Napier from Battelle Pacific Northwest National Laboratory presented the paper "Estimating Risks of Environmental Radionuclides Using GENII Version 2. The author described the FRAMES operating system and the modules used for radionuclide transport through the environment. GENII is a code that is currently being evaluated for performing risk assessment analyses for Yucca Mountain.

The paper by J. Durham entitled "Adding Radionuclides to the Varskin 3 Library Correctly" generated several questions about the gamma dose model used in the code. The technical issue that the presentation addressed was a discussion of how to choose the photon minimum energy and yield when adding radionuclides to the library. Simply choosing the default values for the minimum photon energy and yield can result in incorrect values because the minimum energy for a dose calculation at one skin depth may not be appropriate at a different skin depth. The paper discussed work performed while the author was employed at Colorado State University prior to being hired by the CNWRA. The NRC Office of Nuclear Regulatory Research has contacted the CNWRA for continued development of the code at the CNWRA.

The author's society activities included serving as chair of the Summer School Committee, a standing committee in the society. The summer school is typically held the week prior to the annual meeting. Separate meetings were held with the summer school liaison, the academic dean of the summer school, and the summer school committee. In addition, meetings were held with the outgoing and incoming Presidents of the society. The summer school was an educational success, although poor attendance did not allow the school to return a profit to the society. One reason for the poor attendance was requiring students to travel on a holiday.

IMPRESSIONS AND CONCLUSIONS:

The conference was attended by health physicists from all over the world. It allowed the author to maintain knowledge of the latest issues in health physics and to serve the society. Attendance also provided an opportunity to maintain a network of professional contacts. Finally, relevant technical information was presented to colleagues through the author's oral presentation.

PROBLEMS ENCOUNTERED:

None.

PENDING ACTIONS:


None.

RECOMMENDATIONS:

Attendance at the following Health Physics Society meeting is recommended to increase public confidence and to make NRC activities more effective, efficient, and realistic.

- 51st Annual Meeting of the Health Physics Society, to be held July 25 –29, 2006 in Providence, Rhode Island.


SIGNATURES:



James Durham
Senior Research Scientist

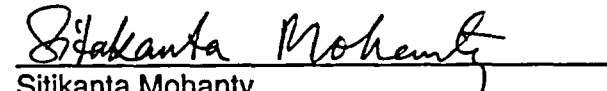
8-11-05
Date

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James Winterle
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Date



Sitikanta Mohanty
Assistant Director

8/12/2005
Date