



**Health Effects Program:  
Technical Support for NRC Programs**

Elijah Dickson	Eli Goldfeiz, CHP, Ph.D.
Tony Huffert, CHP	Doris Lewis
Robert Meck, Ph. D	Mohammad Saba
Casper Sun, CHP, Ph. D	Katie Wagner
Senior Level Advisor: Vince Holahan, Ph. D.	
Branch Chief: Stephanie Bush-Goddard, Ph. D	

*Regulatory Information Conference  
March 10, 2009*

---

---

---

---

---

---

---

---



2

---

---

---

---

---

---

---

---



**Health Effects Branch Mission**

- **Assess health effects, develop products, and provide technical expertise in support of agency decision making**
  - Technical bases for regulations
  - Computer codes, databases and guidance for regulatory implementation
- **Monitoring national and international radiation protection activities**

3

---

---

---

---

---

---

---

---



### Radiation Exposure Information and Reporting System (REIRS)

- **Purpose:** collect and analyze annual occupational dose information required by 10 CFR 20.2206
- **Primary objectives**
  - Provides former and current employees complete records of occupational exposures received at NRC-licensed facilities
  - Evaluates effectiveness of licensees' ALARA programs
  - determines effects of transient workers

4

---

---

---

---

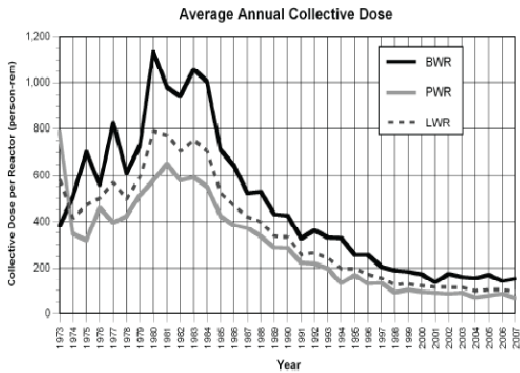
---

---

---

---

Occupational Radiation Exposure at NRC Licensed Facilities *For the Annual Report, 2007*




---

---

---

---

---

---

---

---



### VARSKIN 4

- **Purpose:** computer code for estimating skin dose
- **Primary objectives**
  - Calculates beta dose with certain geometries
  - Replace photon model
  - Quality control
- **Status**
  - Photon dosimetry model is being refined
  - Software infrastructure is changing to update GUI interface
- **Website:** <http://www.nrc.gov/about-nrc/regulatory/research/comp-codes.html#health>

6

---

---

---


---

---

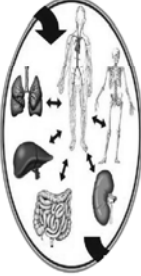
---

---

---

 **Radiation Protection Dosimetry Research**

- **Purpose:** provide technical support to NRC programs involving radiation protection dosimetry
- **Primary objectives**
  - Develop methods for implementing new and existing regulatory requirements
  - Provide in-depth technical expertise on a wide range of internal and external dosimetry topics
  - Respond to technical needs of the agency for radiation dosimetry in a timely manner
- **Status**
  - Ongoing technical support on internal dosimetry software, iodine biokinetics, effluent emergency preparedness, etc




---

---

---


---

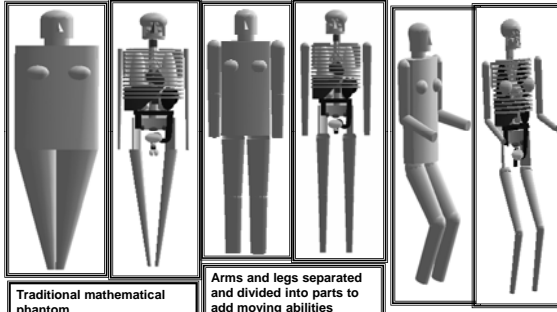
---

---

---

---

 **PIMAL Phantom with Moving Arms and Legs**



Traditional mathematical phantom

Arms and legs separated and divided into parts to add moving abilities

8

---

---

---


---

---


---

---

---

 **Multi-Agency Radiation Survey and Assessment of Materials and Equipment (MARSAME)**

- **Purpose:** provide Federal guidance on acceptable methods for surveying materials and equipment for disposition
- **Primary objectives:**
  - Establish consensus among DoD, DOE, EPA and NRC on acceptable methods for surveying materials and equipment for disposition
  - Publish standardized guidance for investigation of radioactively contaminated sites, material and equipment
- **Status**
  - Published in January 2009
  - Developing training for users




---

---

---

---

---

---

---

---



**National Support**

- National Council on Radiation Protection and Measurements
- Interagency Steering Committee on Radiation Standards
- National Academies
- Council on Ionizing Radiation Measurements and Standards

**International Support**

- United Nations Scientific Committee on the Effects of Atomic Radiation
- International Commission on Radiological Protection
- International Atomic Energy Agency
- Organization for Economic Cooperation and Development - Nuclear Energy Agency

10

---

---

---

---

---

---

---



**Plans for Future Work**

- Continue to serve as technical resource for health effects and radiation protection activities
- Develop additional tools for NRC staff and licensee use
- Expand knowledge management initiatives
- Your thoughts?

11

---

---

---

---

---

---

---