U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

RADIATION PROTECTION COMPUTER CODE ANALYSIS AND MAINTENANCE PROGRAM

RADIATION PROTECTION COMPUTER CODE ANALYSIS AND MAINTENANCE PROGRAM

2017 FALL USERS MEETING

UNITED STATES NUCLEAR REGULATORY COMMISSION, THREE WHITE FLINT NORTH
OCTOBER 16 -20, 2017

Welcome to the 2017 Fall RAMP Users Meeting

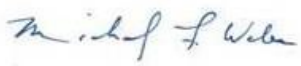
Welcome to the third domestic Radiation Protection Computer Code Analysis and Maintenance Program (RAMP) Users Meeting, sponsored by the U.S. Nuclear Regulatory Commission (NRC). NRC's Office of Nuclear Regulatory Research (RES) leads RAMP and is your host for this meeting. We are pleased that you could join us for this important meeting and for collaboration to enhance nuclear and radiation safety.

In addition to RAMP, RES plans, recommends, manages, and implements applied research, confirmatory analyses, standards development, and resolution of generic safety issues for nuclear power plants and other facilities regulated by the NRC. RES partners with other NRC offices, Federal agencies, industry research organizations, international organizations, and universities to achieve our mission. We employ a wide variety of talented and diverse experts in engineering and scientific disciplines, including radiation protection, thermal-hydraulics, severe accident progression, nuclear materials, human factors and human reliability, fire protection, seismology, environmental transport, and probabilistic risk assessment. Our experts provide the technical support, analytical tools, and information necessary to accomplish NRC's nuclear safety and security mission.

Besides RAMP, RES also coordinates domestic and international cooperative nuclear safety research activities, including cooperative code-sharing programs for the following areas:

- thermal hydraulics, called the Code Applications and Maintenance Program (CAMP)
- severe accidents, called the Cooperative Severe Accident Research Program (CSARP).

The NRC is pleased to host the third domestic RAMP Users' Meeting. U.S. and international participants in the meeting will contribute to and benefit from the collaborative exchange of information and ideas on radiation protection codes. We look forward to your active participation.



Michael Weber
Director of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission

Supported by the Office of International Programs

Meeting participants,

I would like to add my welcome to the RAMP Users Meeting on behalf of the NRC's Office of International Programs. Engaging with our RAMP colleagues on radiation protection, dose assessment, and emergency response analysis is just one of the many ways the NRC works to ensure the safety and security of nuclear materials around the globe. These efforts are critically important as the world becomes more interconnected and interest grows in the use of nuclear technologies.

The NRC's international activities support the agency's domestic mission, as well as broader U.S. domestic and international interests. Our international work includes implementation of treaties and conventions, nuclear nonproliferation, and export-import licensing for nuclear materials and equipment. We also provide support and assistance for safeguards, safety cooperation and assistance, exchange of regulatory and safety information, and cooperative safety research. These activities provide the NRC the opportunity to share as well as learn best practices for regulatory safety and security.

RAMP is one of the important initiatives through which we engage with domestic and international colleagues. The success of our regulatory program is bolstered by strong partnerships such as the RAMP users' group. Our Commission's International Policy Statement recognizes the importance of such partnerships and the benefits they bring to the regulatory programs of the both NRC and our international counterparts.

Thank you for coming and contributing your expertise to our partnership. We look forward to working with you over the course of this week.

Nader Mamish, Director
Office of International Programs
U.S. Nuclear Regulatory Commission

RAMP meeting participants,

I am pleased to welcome you to the Radiation Protection Computer Code Analysis and Maintenance Program (RAMP) Fall Users Group Meeting. I am the Chief of the Radiation Protection Branch, and my team of dedicated staff leads this effort at the NRC. We have worked very hard to bring you a thought-provoking and informative RAMP meeting.

As you know, RAMP is a computer code management program that supports development and maintenance of radiation and dose assessment codes. Our goals are to do the following:

- streamline updates
- incorporate the latest accepted state-of-the-art models
- prioritize technical updates
- achieve consistency in documentation
- implement a consistent software quality assurance program
- leverage fiscal resources
- implement centralized and consistent management and control structure
- respond to RAMP user needs
- leverage technical expertise

In addition to the RAMP program, my branch is responsible for a number of regulatory activities. We develop, perform, and manage research programs supporting risk-informed regulatory decision-making in radiation protection at nuclear power plants, materials facilities and users, and fuel cycle facilities. We serve as an agency-wide resource by providing technical support in all aspects of radiation protection to program offices, as well as to the U.S. Nuclear Regulatory Commission's domestic and international regulatory and scientific counterparts. We develop and maintain computer codes for assessment of radiation doses to workers and members of the public, analyze and report worker exposure to Congress and other stakeholders, and execute research in radiation dosimetry and health studies. We also promote and participate in knowledge management activities within the agency in radiation protection.

We are glad you are here, and we continue to encourage other organizations to join. It is our belief that through RAMP forums and user meetings, participants can make connections and exchange information on radiation protection issues. During the session breaks, take the time to get to know us and create those network connections to further the collaborative exchange of information. We want to hear from you so that we can make RAMP the best program possible.

Welcome again,

Rebecca Tadesse

Meet the RAMP Team

NRC RAMP Team

Stephanie Bush-Goddard, Ph.D.
RAMP Program Manager

John Tomon, CHP
RAMP Program Manager

Vered Shaffer, Ph.D.
RAMP Program Manager

Minh-Thuy Nguyen
RAMP Program Team

Jeff Kowalczik, CHP
RAMP Program Team

Kerstun Norman
RAMP Program Team

Pacific Northwest National Laboratory (PNNL) RAMP Team

Michael Smith, CHP
PNNL RAMP Program Manager

Tonya Keller
PNNL RAMP Project Coordinator

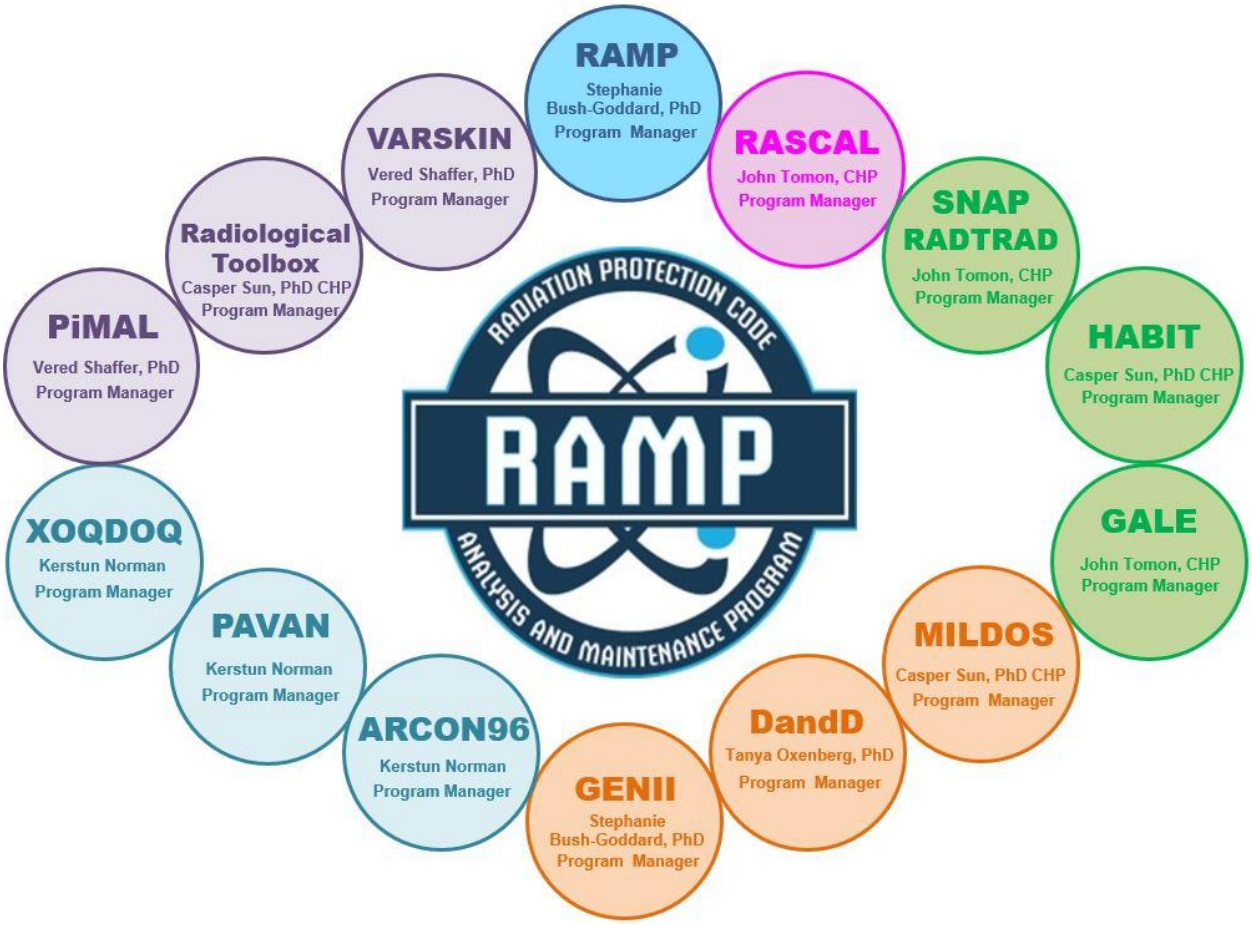
Lubov Lavrentiev
PNNL RAMP Project Coordinator

Leidos RAMP Team

Daniel Pomykala
RAMP Program Manager

Wendy Chinchilla
RAMP Website Technical Lead

Sabrina Rivers–Carigo
Website Team Coordinator



Radiation Protection Computer Code Analysis and Maintenance Program (RAMP)

2017 Fall Users Group Meeting, October 16-20, 2017
United States Nuclear Regulatory Commission
3 White Flint North, 11601 Landsdown Street, North Bethesda, MD 20852
RAMP Website: www.usnrc-ramp.com

Monday, October 16, 2017	8:00AM – 9:00AM	Registration and Check-In (3WFN-1C03/1C05)			
	9:00AM – 12:00PM	Opening Session (3WFN-1C03/1C05) and Emergency Response Tours			
	1:00PM – 4:30PM	RASCAL (3WFN-2A14)	VARSKIN Technical Meeting (3WFN-1C03/1C05)	MILDOS (3WFN-2A32)	
	4:30PM – 6:30PM	RAMP Social Hour - Paladar			
Tuesday, October 17, 2017	8:00AM – 8:45AM	Morning Primer: HABIT Discussion (3WFN-1C03/1C05)			
	9:00AM – 12:00PM	RASCAL (3WFN-2A14)	VARSKIN Technical Meeting (3WFN-1C03/1C05)	MILDOS (3WFN-2A32)	
	1:00PM – 5:00PM				
Wednesday, October 18, 2017	8:00AM – 8:45AM	Morning Primer: Radiological Toolbox and DCFPAK Discussions (3WFN-2A18)			
	9:00AM – 12:00PM	RASCAL (3WFN-2A14)	VARSKIN Training (3WFN-1C03/1C05)	RESRAD Advanced Modules (3WFN-2A32)	
	12:00PM – 1:00PM	International Meeting (3WFN-1C03/1C05)			
	1:00PM – 5:00PM	Tour of the National Institute of Standards and Technology			
	6:00 PM	Tentative RAMP Dinner Outing			
Thursday, October 19, 2017	8:00AM – 8:45AM	Morning Primer: GENII Discussion (3WFN-1C03/1C05)			
	9:00AM – 12:00PM	RADTRAD (3WFN-2A14)	GALE (3WFN-2A18)	PIMAL (3WFN-2A28)	RESRAD Biota (3WFN-2A32)
	1:00PM – 5:00PM		ATMO CODES (3WFN-2A18)		
Friday, October 20, 2017	8:00AM – 8:45AM	Morning Primer: U.S. EPA COMPLY and CAP88 Codes (3WFN-1C03/1C05)			
	9:00AM – 11:00AM	RADTRAD (3WFN-2A14)		RESRAD Discussion (3WFN-2A32)	
	11:00AM – 12:00PM	RAMP Closing Remarks and Ceremony (3WFN-1C03/1C05)			

Opening Agenda

2017 Fall RAMP Users Meeting — Opening Session

8:00 – 9:00 AM	Open Registration	
9:00 – 9:15 AM	Welcome & NRCs Cooperative Research Program	Michael Weber, Director Office of Regulatory Research
9:15 – 9:30 AM	The RAMP Program	Michael Case, Director Division of Systems Analysis
9:30 – 9:45 AM	RAMP Users Meeting Information	Stephanie Bush-Goddard, Ph.D. U.S. NRC RAMP Program Manager
9:45 – 10:00 AM	RAMP User Roll Call	Stephanie Bush-Godard, Ph.D. U.S. NRC RAMP Program Manager
10:00 – 10:20 AM	RAMP Codes Overview & What's New?	Vered Shaffer, Ph. D. U.S. NRC RAMP Program Manager
10:20 – 10:30 AM	Networking Break	All
10:30 – 11:15 AM	Emergency Response Tour Group 1	Jeff Kowalczik, CHP Emergency Response Coordinator
10:30 – 11:15 PM	RAMP Meet & Greet with the Code Developers / Networking (Group 2)	RAMP Group 2
11:15 – 12:00 PM	Emergency Response Tour Group 2	Jeff Kowalczik, CHP Emergency Response Coordinator
11:15 – 12:00 PM	RAMP Meet & Greet with the Code Developers / Networking (Group 1)	RAMP Group 1

VARSKIN Technical Session

(Part of the 2017 Fall RAMP Users Meeting)

Monday, October 16, 2017

8:00 – 12:00 PM	RAMP Opening Session	
12:00 – 1:00 PM	Lunch	
1:00 – 1:15 PM	Introductions of VARSKIN Development Team and RAMP Members	David Hamby, Ph.D. Oregon State University (OSU)
1:15 – 2:00 PM	30 Years of VARSKIN: Evolution and Improvements	David Hamby, Ph.D. Oregon State University (OSU)
2:00 – 2:30 PM	Shallow Dose Estimates Using EGS and MCNP	Colby Mangini, Ph.D. Paragon Scientific
2:30 – 3:00 PM	Break	
3:00 – 3:45 PM	Uses of VARSKIN in a Medical Hospital Environment	Michael Stabin, Ph. D. Vanderbilt University
3:45 – 4:30 PM	Holmium for Use in Cancer Therapy	Anthony Di Pasqua, Ph.D Binghamton University SUNY

Tuesday, October 17, 2017

8:00 – 8:45 AM	Morning Primer – HABIT	
9:00 – 9:45 AM	New in VARSKIN 6	Colby Mangini, Ph.D. Paragon Scientific
9:45 – 10:15 AM	Performance of the VARSKIN Electron Dosimetry Model	Logan Anspach Oregon State University (OSU)
10:15 – 10:30 AM	Break	
10:30 – 11:15 PM	Dose Assessment of Scalar Energy Health Products	Blake Orr Australian Radiation Protection (ARPANSA)
11:15 – 12:00 PM	Dose Assessment of Hot Particle Held Stationary against the Wall of Alimentary Tract	Peter Lee & Bill Lin U.S. NRC Region III

12:00 – 1:00 PM	Lunch	
1:00 – 1:45 PM	Lantheus Medical Imaging: High Dosimetry Result	Michael Reichard U.S. NRC Region I
1:45 – 2:30 PM	Case Study: 2008 Region IV Eye Dosimetry	Colby Mangini, Ph.D. Paragon Scientific
2:30 – 3:00 PM	Break	
3:00 – 3:45 PM	Efficacy of VARSKIN for Eye Dosimetry	Nicholas McDaniel Oregon State University (OSU)
3:45 – 4:30 PM	User Discussion: The Direction of VARSKIN 7	Vered Shaffer, Ph. D. Stephanie Bush-Godard, Ph.D. U.S. NRC RAMP Program Manager

Wednesday, October 18, 2017

8:00 – 8:45 AM	Morning Primer – Radiological Toolbox and DCFPAK Discussions	
9:00 – 9:15 AM	New VARSKIN Training Modules	Vered Shaffer, Ph. D. U.S. NRC RAMP Program Manager
9:15 – 10:00 AM	VARSKIN Photon Dosimetry	David Hamby, Ph.D. Oregon State University (OSU)
10:00 – 10:15 AM	Break	
10:15 – 11:15 PM	VARSKIN Electron Dosimetry	Colby Mangini , Ph.D. Paragon Scientific
11:15 – 11:30 AM	Final Thoughts	David Hamby, Ph.D. Oregon State University (OSU)

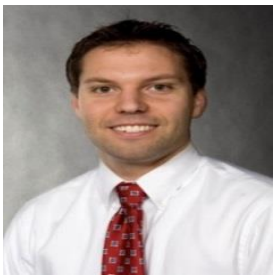
Training Sessions Descriptions

RASCAL

Instructors:

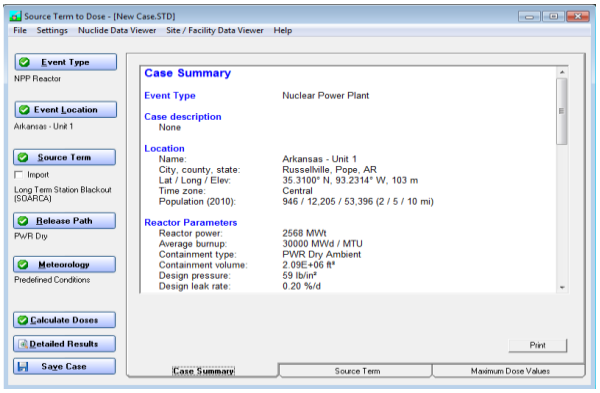
George Athey

Athey Consulting



Jeff Kowalczik, CHP

U.S. NRC



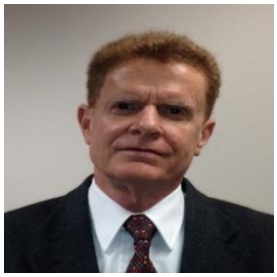
The **R**adiological **A**ssessment **S**ystem for **C**onsequence **A**na**L**ysis (RASCAL) computer code is an emergency response software used to assess off-site consequences from a radiological release incident at a nuclear power plant or materials facility. This training course is a hands-on computer class for new and experienced RASCAL users using the current version of the code (RASCAL v4.3.2). It guides users through simulated release scenarios to develop an understanding of the RASCAL models, inputting data, and interpreting results.

Course Requirements:

- Attendees must provide their own laptop computer with RASCAL 4.3.2 installed prior to the start of the meeting.
- Before taking the course, all attendees should complete the online courses "Introduction to RASCAL" and "RASCAL Fundamentals" available on the RASCAL Training & Presentation page of the RAMP website.

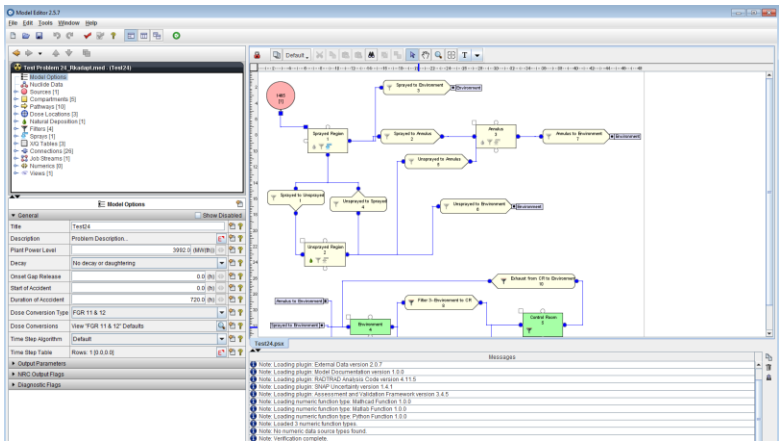
SNAP/RADTRAD

Instructors:



William Arcieri

Information Systems Laboratories, Inc. (ISL)



This training course is a hands-on computer class for **S**ymbolic **N**uclear **A**nalysis **P**ackage/**RAD**ionuclide **T**ransport, **R**emoval, **A**nd **D**ose Estimation (SNAP/RADTRAD) users. The course covers the use of the SNAP Model Editor with the RADTRAD plugin for use with the RADionuclide Transport, Removal, and Dose Estimation analytical code (RADTRAD-AC). SNAP/RADTRAD, was developed for the NRC Office of Nuclear Reactor Regulation (NRR), and is used as a licensing analysis code to show compliance with nuclear plant siting criteria for the radiation doses at the exclusion area boundary (EAB) and the low population zone and to assess the occupational radiation doses in the control room or emergency offsite facility for various loss-of-coolant accidents (LOCA) and non-LOCA design-basis accidents (DBAs).

Course Requirements:

- Attendees must provide their own laptop computer with SNAP/RADTRAD installed (SNAP v2.5.7 with the RADTRAD plugin v4.11.5, RADTRAD-AC v4.5.6 & AptPlot v6.7.4) prior to the start of the meeting.

VARSKIN

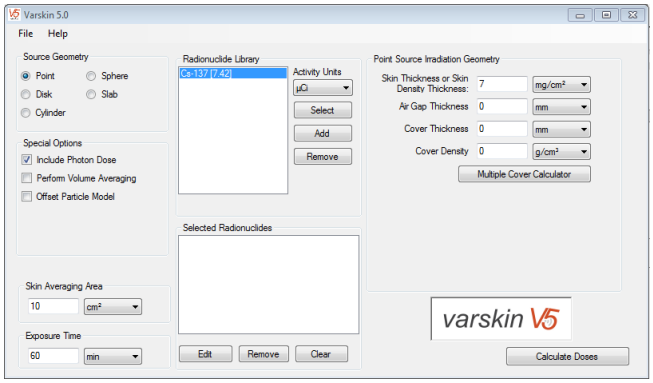
Instructors:

David Hamby, Ph.D.

Oregon State University

Colby Mangini, Ph.D.

Paragon Scientific, LLC



VARSKIN is a computer code for calculating skin dose. VARSKIN assesses compliance with the dose criteria of Title 10 of the Code of Federal Regulations (10 CFR) Part 20, "Standards for Protection against Radiation." The code is used to perform confirmatory calculations of licensees' submittals regarding skin dose (from both electron and photon emissions) estimates at any skin depth or skin volume, with point, disk, cylindrical, spherical, or slab (rectangular) sources, and even enables users to compute doses from multiple sources.

Course Requirements:

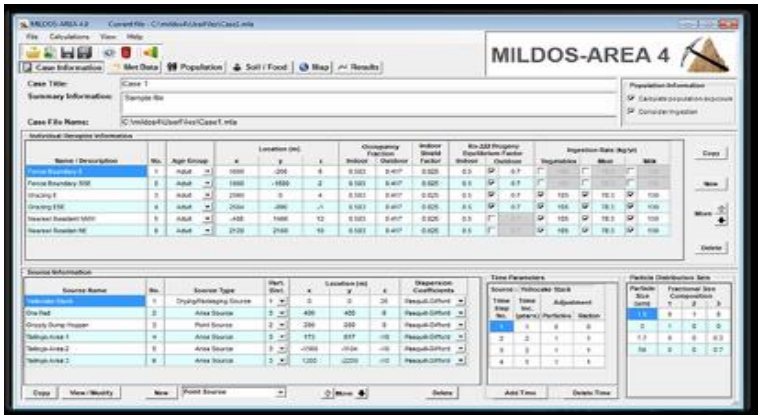
- Attendees must provide their own laptop computer with the current version of VARSKIN installed prior to the start of the meeting.
- Before taking the course, all attendees should complete the online course "Introduction to VARSKIN."

MILDOS

Instructor:

Bruce Biwer, Ph.D.

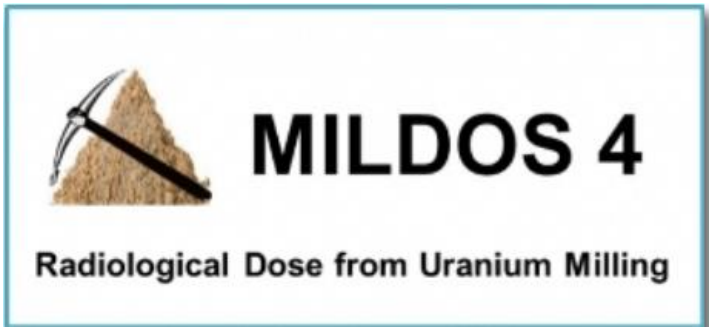
Argonne National Laboratory (ANL)



The **MILDOS** training course is for new users who want to start using the code and experienced users who will be introduced to the latest new features. The MILDOS computer code is used to estimate the radiological impacts of airborne emissions from uranium mining and milling facilities. The code allows users to consider both conventional uranium ore operations and operations associated with in situ recovery facilities. The code is used by license applicants and U.S. NRC staff to perform routine radiological impact evaluations for various uranium recovery operations. Version 4 of the code also provides: (a) support for ores containing thorium-232 (Th-232) and its daughter radionuclides in addition to the currently supported uranium-238 (U-238) and its daughter radionuclides, (b) a revised area source model, (c) the capability to perform sensitivity analysis on specific input parameters, (d) the capability to use current meteorological data provided by the National Climatic Data Center, and (e) an interactive results module.

Course Requirements:

- Attendees must provide their own laptop computer with MILDOS 4.01 installed prior to the start of the meeting.

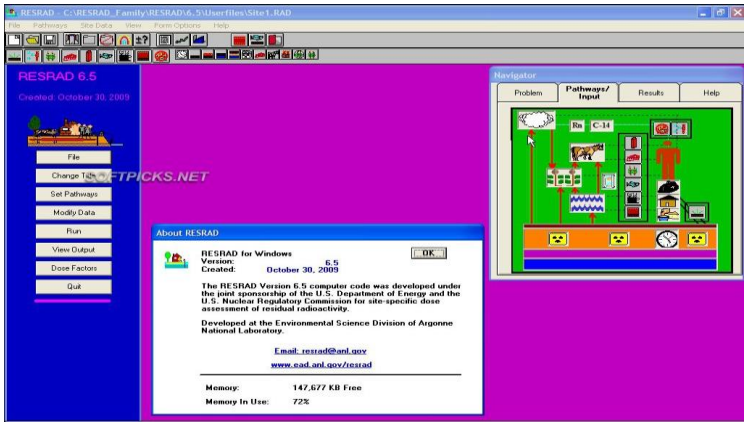


RESRAD

Instructor:

Charley Yu, Ph.D.

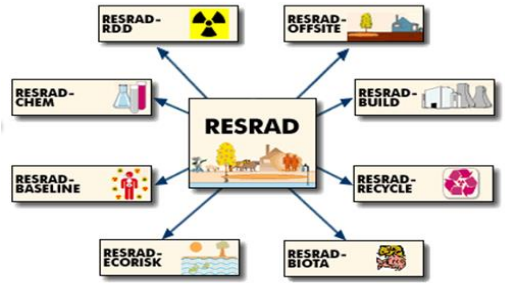
Argonne National Laboratory (ANL)



The **RES**idual **RAD**ioactive (RESRAD) family of codes are used to analyze potential human and biota radiation exposures from the environmental contamination of residual radioactive materials. The codes use pathway analysis to evaluate radiation exposure and associated risks, and to derive cleanup criteria or authorized limits for radionuclide concentrations in the contaminated source medium. The RESRAD-BIOTA computer code evaluates radiation exposures of nonhuman biota in a terrestrial or aquatic ecosystem. Radiation exposures to biota in a terrestrial or aquatic ecosystem are considered to result from contaminated soil, water, and sediment, which subsequently result in contamination in air and in different food sources. A graded approach that consists of three tiers of analysis is implemented in the RESRAD-BIOTA code. The workshop will focus on demonstrations of the new advanced applications and realistic decontamination and decommissioning scenarios for a variety of facility types and sites, including actual decontamination and decommissioning experiences for NRC licensed facilities.

Course Requirements:

- Attendees must provide their own laptop computer with the RESRAD family of codes installed prior to the start of the meeting.

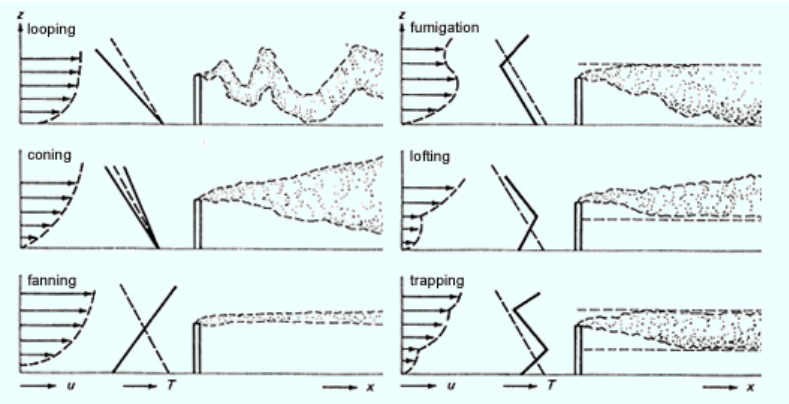


Atmospheric Dispersion Codes

Instructor:

Jeremy Rishel, Ph.D.

Pacific Northwest National Laboratory (PNNL)



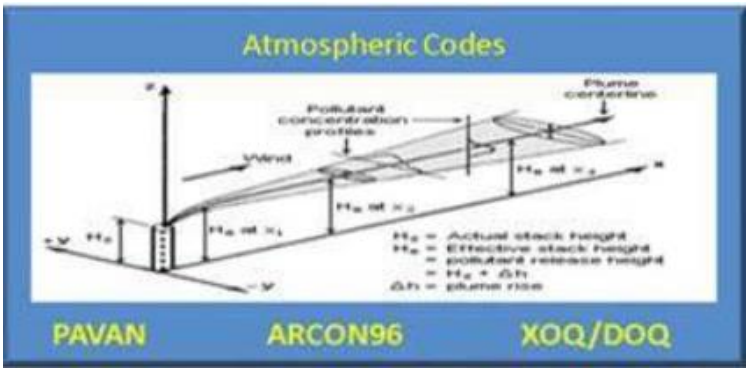
The U.S. Nuclear Regulatory Commission uses several atmospheric transport and diffusion codes to model radiological dispersion in its licensing of existing and new reactors. Three of these codes are currently planned to be entered into RAMP. The codes include:

- **XOQDOQ** is an atmospheric dispersion code used for routine operational releases.
- **PAVAN** is an atmospheric dispersion code used in design basis accident releases to the exclusion area boundary and outer boundary of the low population zone.
- **ARCON96** is an atmospheric dispersion code used for design basis accident releases to the control room and technical support center.

The discussion will center on how the U.S. NRC uses these codes and future plans for the codes. The discussion will also feature a question and answer session, and attendees are encouraged to participate in the code development discussion.

Course Requirements:

- Attendees must provide their own laptop computer with the atmospheric codes installed prior to the start of the meeting.

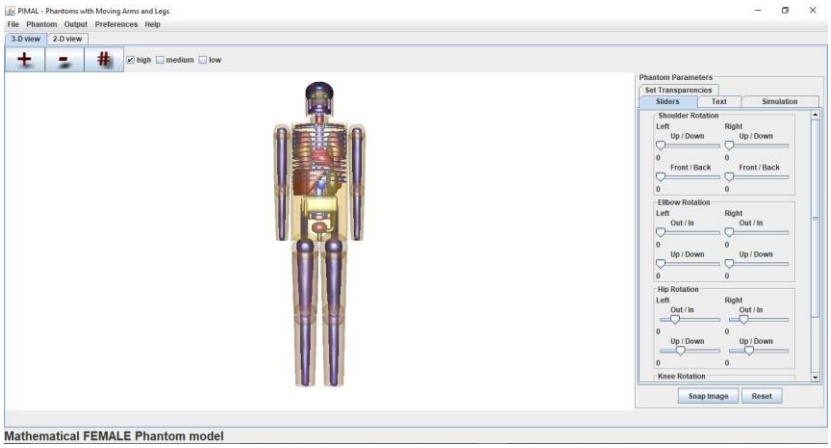


PiMAL

Instructor:

Shaheen Dewji, Ph.D.

Oak Ridge National Laboratory (ORNL)



The **P**hantom w**i**th **M**oving **A**rms and **L**egs (PiMAL) computer code is used to estimate or reconstruct radiation dose. PiMAL is a graphical user interface (GUI) driven software package used to conduct radiation dose assessments using realistic phantom postures. Users adjust the posture of the phantom, generate a corresponding input file for the **M**onte **C**arlo **N**-**P**article (MCNP) radiation transport code, and perform radiation simulations for the dose calculations in MCNP. PiMAL software is considered an efficient and accurate tool for performing dosimetry calculations for radiation workers and exposed members of the public.

Course Requirements:

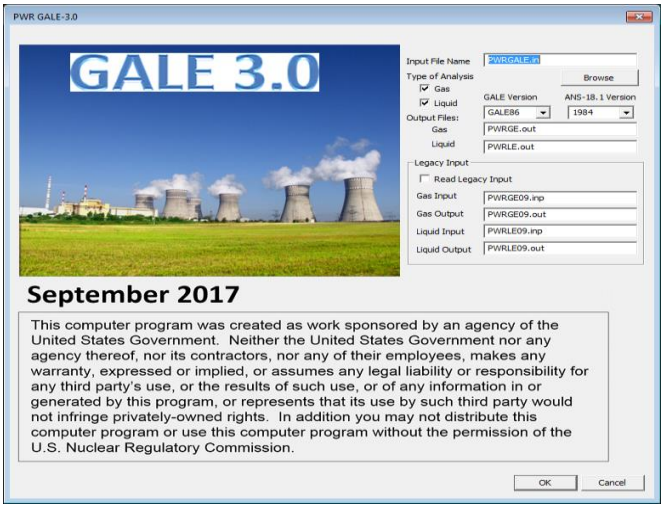
- Participants must obtain their own license for MCNP® from RSICC at https://rsicc.ornl.gov.
- Attendees must provide their own laptop computer with the code and required applications installed prior to the start of the meeting.

GALE

Instructor:

David Colameco

Pacific Northwest National Laboratory (PNNL)



The **G**aseous **A**nd **L**iquid **E**ffluent (GALE) computer code calculates the release of radioactive material in gaseous and liquid effluents. The NRC Offices of Nuclear Reactor Regulation (NRR) and New Reactors (NRO) use GALE to perform independent assessments of license applications and amendments for existing plants (modifications to plant design or technical specification) to determine compliance with the requirements of Appendix I to Title 10 of the Code of Federal Regulations (10 CFR) Part 50. The code uses a combination of input data and hardwired parameters to calculate the radionuclides generated by a nuclear power plant during routine operation. Parameters that vary from plant to plant are treated as "inputs." Hardwired parameters are plant characteristics that are assumed to be the same for all reactors.

Course Requirements:

- Attendees must provide their own laptop computer with the code installed prior to the start of the meeting.

Tours of the NRC Headquarters Operations Center

Attendees are invited to experience the inner workings of the NRC Headquarters Operations Center where the agency coordinates events involving NRC-licensed facilities or materials.

This session will be offered during the opening day sessions and will emphasize select incident response assets, including the RASCAL computer code. It also will address the roles and responsibilities of various teams that comprise the NRC response organization when it is staffed during an emergency. This session will further address the resources the NRC uses when communicating information to external stakeholders and receiving information from licensees during an emergency. Photo identification is required for entry into the NRC Headquarters Operation Center.

Tours of the NRC Headquarters Operations Center are scheduled after the Opening Ceremony on Monday October 16, 2017.

Tour of the National Institute of Standards and Technology

Date: Wednesday, October 18, 2017
Where: Gaithersburg, M.D.

The National Institute of Standards and Technology (NIST) was founded in 1901 and is now part of the U.S. Department of Commerce. NIST is one of the nation's oldest physical science laboratories. Congress established the agency to remove a major challenge to U.S. industrial competitiveness at the time—a second-rate measurement infrastructure that lagged behind the capabilities of the United Kingdom, Germany, and other economic rivals.

From the smart electric power grid and electronic health records to atomic clocks, advanced nanomaterials, and computer chips, innumerable products and services rely in some way on technology, measurement, and standards provided NIST.

Today, NIST measurements support the smallest of technologies to the largest and most complex of human-made creations—from nanoscale devices so tiny that tens of thousands can fit on the end of a single human hair up to earthquake-resistant skyscrapers and global communication networks.

(Source: www.nist.gov)

Nearby Dining

Pike & Rose (10 minutes) – North of NRC

Restaurant	Address	Type	Phone
➢ &pizza	11626 Old Georgetown Rd	Pizza	240-621-7016
➢ Bibibop	11584 Old Georgetown Rd	Asian Fusion	301-337-9465
➢ Chipotle	11802 Rockville Pike	Mexican	240-292-7466
➢ City Perch	11830 Grand Park Ave	American	301-231-2310
➢ Del Frisco's Grille	11800 Grand Park Ave	Steakhouse	301-881-0308
➢ Owens Ordinary	11820 Trade St	American	301-245-1226
➢ Pinstripes	11920 Grand Park Ave	Italian-American	240-630-3222
➢ Roti	11584 Old Georgetown Rd	Mediterranean	301-881-7300
➢ Stella Barra	11825 Grand Park Ave	Pizzeria	301-770-8609
➢ Summer House Santa Monica	11825 Grand Park Ave	New American	301-881-2381
➢ Tutti Frutti	11802 Rockville Pike	Frozen Yogurt, Smoothie Bar	301-881-7590

Metro Pike Center (2-5 minutes) – Across the Street

Restaurant	Address	Type	Phone
➢ Dunkin Donuts	11530 Rockville Pike	Coffee/Donuts	301-231-6516
➢ Sweet Frog	11520 Rockville Pike	Frozen Yogurt	301-881-6100
➢ Taipei Tokyo Cafe	11510 Rockville Pike	Asian/Sushi	301-881-8388
➢ Stella's Bakery	11510 Rockville Pike	European	301-231-9026
➢ Pizza Boli's	11540 Rockville Pike	Italian/Pizza	301-230-0123

White Flint Station (2-5 minutes) – Across the Street

Restaurant	Address	Type	Phone
➢ Pho Eatery	11618 Rockville Pike	Vietnamese	240-669-9777
➢ Mediterranean House of Kabob	11616 Rockville Pike	Mediterranean	301-881-5956
➢ Ize's Deli and Bagelry	11622 Rockville Pike	American Deli	301-231-0771
➢ Papa John's	11638 Rockville Pike	Pizza	301-816-4800

North Bethesda Market (10-15 minutes) – South of NRC

Restaurant	Address	Type	Phone
➢ Jimmy John's	11416 Rockville Pike	Sandwiches	301-881-1733
➢ Paladar Latin Kitchen	11333 Woodglen Dr	Latin American	301-816-1100
➢ Seasons 52	11414 Rockville Pike	New American	301-984-5252
➢ Starbucks	11416 Rockville Pike	Coffee Shop	301-230-9898

Other Places

Name	Address	Phone	Walking Time
➢ McDonald's	11564 Rockville Pike	301-230-9640	01 Min
➢ Arby's	11710 Rockville Pike	301-468-6981	05 Min
➢ Popeyes Louisiana Kitchen	11720 Rockville Pike	301-881-5803	06 Min
➢ Quincy's South Bar & Grille	11401 Woodglen Dr	240-669-3270	05 Min
➢ Flor De Luna	11417 Woodglen Dr	240-242-4066	05 Min

Market/Grocery/Convenient Stores

Store Name	Address	Phone	Walking Time
➢ Harris Teeter	11845 Old Georgetown Rd	301-468-3029	03 Min
➢ Whole Foods	11355 Woodglen Dr	301-984-4880	06 Min
➢ 7-Eleven	11530 Rockville Pike	301-468-1126	01 Min
➢ CVS Pharmacy	11416 Rockville Pike	301-230-9898	05 Min

Things to do in North Bethesda, Rockville, and Washington, DC

For information on places to go and things to do in North Bethesda, MD:
http://www.americantowns.com/md/northbethesda

For information on places to go and things to do in Rockville, MD:
http://www.americantowns.com/md/rockville

For information on places to go and things to do in downtown Washington, DC:
http://washington.org, http://visitdc.com

Notes

THANK YOU FOR ATTENDING

THE 2017 FALL RAMP USERS MEETING
&
VARSKIN TECHNICAL MEETING

Monday, October 16 – Friday, October 20, 2017

For additional information:

Email:

RAMP@nrc.gov

RAMP.Admin@pnnl.gov

RAMP Website:

https://www.usnrc-ramp.com