

# RAMPED UP

RAMP NEWSLETTER – FALL 2016, ISSUE 4



## 2016 International RAMP Users Group Meeting

The first RAMP International Users Meeting was held May 17-21, 2016, in Pretoria, South Africa. The meeting, sponsored by the South African National Nuclear Regulatory and the U.S. Nuclear Regulatory Commission, was attended by over 40 users.

The meeting featured four health physics codes: RASCAL (emergency preparedness and response); VARSKIN (skin dose); RADTRAD (compliance for design basis accidents); and new to the program, GENII (an environmental dosimetry package).

The hands-on training offered users a way to test the codes and their ability to use them with the code developers right in the room. In addition to training, the users were able to engage through a series of “Meet the Trainer” discussions.

During these smaller discussion sessions the users were able to ask more in-depth questions specific to their day-to-day use of the codes.

Midway through the week, attendees were invited to a tour of the South African Safari Reactor in Pelindaba where they got a firsthand look at the reactor pool. The South African hosts also arranged a tour of the Lesedi Cultural Village located within the Cradle of Humankind, a World Heritage Site.

The week wrapped up with a closing ceremony where participants received certificates of completion while enjoying a delicious brai (or barbeque) lunch.

The RAMP team would like to thank the South African National Nuclear Regulatory for hosting the meeting. The U.S. Nuclear Regulatory Commission is hosting the Fall 2016 RAMP Users Group Meeting in Rockville, Maryland, in October.



## International Partners

RAMP has added two international corporate partners: M&D Corporation of South Korea and Krško Nuclear Power Plant of Slovenia. M&D Corporation specializes in monitoring and diagnostic technologies in the nuclear sector.



The Krško Nuclear Power Plant has been in operation for over 30 years, providing more than a quarter of Slovenia’s power. It also provides power to neighboring Croatia.

The latest country to country RAMP agreements are with China and the United Arab Emirate.





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## RAMP Team Highlight

**BRUCE NAPIER** is the NII Staff Scientist in the Environmental Assessment Group of the Earth Systems Science Division at the Pacific Northwest National Laboratory in Richland, Washington.



He works on the environmental transport of radiological and chemical contaminant models. Other expertise includes dose reconstruction, environmental analysis, and emergency response. Bruce is also the expert and trainer of the GENII code, an environmental dosimetry package.

Bruce is the Assessment Manager for the Hanford Unified Dose Assessment Center, a Fellow of the Health Physics Society, a member of the Hanford Site central emergency response group, and has acted on several national committees.

He is author/co-author of six books, 85 peer-reviewed journal articles, and several hundred technical reports. He is currently helping develop a radiation-protection certificate class at Washington State University.

Beyond science, Bruce is an active hiker, grows grapes in his front yard to make his own wine, and enjoys cycling and water and snow sports.

## Agency Highlight

As of August 2016, the NRC Lockheed Program became part of Leidos, a dynamic organization built on a proven history and culture of innovation, and backed by a strong and experienced technical leadership team.



The Leidos team, currently led by Wendy Chinchilla, successfully deployed the RAMP website in March 2015 for use by the radiation community.



This one-stop website centralizes access to numerous NRC computer codes used domestically and internationally for radiation safety.

Since then, new codes have been added, such as MILDOS and the Atmospheric Codes (XOQDOQ, PAVAN, and ARCON96). Technical documents, training modules, and regulatory guidance are also available.

The website is also a source of information for RAMP users meetings and provides links to radiation protection topics. Recent website upgrades and enhancements include improved meeting pages, code-specific forums, and a more streamlined design throughout the website.

Questions or comments about the website can be directed to [Wendy.Chinchilla@nrc.gov](mailto:Wendy.Chinchilla@nrc.gov) or at [ramp@nrc.gov](mailto:ramp@nrc.gov).

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## Introduction of HABIT v2.0 Computer Code

By Casper Sun, Ph. D.  
CHP US Nuclear Regulatory Commission

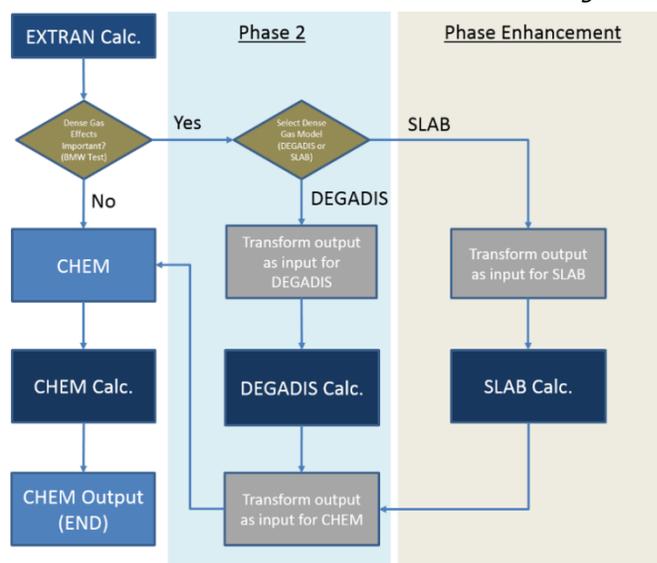
The HABIT computer code is an integrated set of computer programs used to estimate chemical exposures that personnel in the control room of a nuclear facility would be exposed to in the event of an accidental release of toxic chemicals.

HABIT 1.1 is based on the complex EXTRAN atmospheric transport and diffusion model that calculates transient chemical or radionuclide concentrations at a given downwind location using a Gaussian puff dispersion method and modified building-wake diffusion algorithms.

The newest version, HABIT 2.0, re-hosted the code for the Windows 7/8 (64 bit) environment and added the capability of simulating denser-than-air contaminant diffusion modeling using two well-established dense gas models called DEGADIS and SLAB.

In addition HABIT 2.0 detects when denser-than-air (negative buoyancy) effects will be important using criteria proposed by Britter and McQuaid (Figure 1) for liquid burst, liquid leak, gas burst, and gas leak accident scenarios.

Figure 1



There are 13 demos and test cases and user instructions within the HABIT 2.0 code. Future plans are to benchmark HABIT 2.0 and continue its software quality assurance program.

The HABIT code is sited in NRC Regulatory Guide (RG) 1.78 (2001), "Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release."



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## FALL 2016 RAMP USERS GROUP MEETING

OCTOBER 17-21, 2016

HILTON HOTEL & EXECUTIVE CENTER, WDC/ROCKVILLE, MARYLAND  
(NEAR TWINBROOK METRO STATION)



### SCHEDULE AT A GLANCE

October 17 - 21, 2016 8am - 5pm		Fall 2016 RAMP Users Group - Description of Training & Events					
Mon., Oct 17 2016	Morning Session	Welcome to RAMP - Opening Ceremony					
	Afternoon Session	RASCAL	VARSKIN	MILDOS	HABIT	Atmospheric Codes	
	"Social Night Out" Evening Event - RAMP Users Group Networking Session						
Tues., Oct 18 2016	Morning Session	RASCAL	VARSKIN	MILDOS	*RAMP Discussions & Meetings		
	Afternoon Session						
Wed., Oct 19 2016	Morning Session	RASCAL	VARSKIN	MILDOS	GALE	Country to Country Meeting	*RAMP Discussions & Meetings
	Afternoon Session	GENII	RADTRAD	PiMAL			
	4:00 PM - NRC Emergency Response Operations Tour						
Thurs., Oct 20 2016	Morning Session	GENII	RADTRAD	PiMAL	*RAMP Discussions & Meetings		
	Afternoon Session						
	4:00 PM - NRC Emergency Response Operations Tour						
Fri., Oct 21 2016 * 8am - 12pm	Morning Session	GENII	RADTRAD		*RAMP Discussions & Meetings		
	Afternoon Session	RAMP Closing Ceremony					

The most current schedules are posted to the RAMP website.

\* RAMP Discussions & Meetings:

As a RAMP member, your selections will help our team develop a supplementary agendum which would include additional activities, such as discussion topics and future training needs. Meeting and discussions include:

- "Meet the Trainers" discussions allow Users to network with the code developers
- Country to Country meetings to discuss code development and in-kind contributions
- Radiological Toolbox
- Other codes such as D&D



## Next Issue:

Save the date: 2017 International RAMP Users Group Meeting

April 24-28, 2017 Taipei Taiwan