

RAMPED UP!

RAMP NEWSLETTER – FALL 2022, ISSUE 15

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2022 International RAMP Users Group Meeting Recap

The 2022 International Radiation Protection Computer Code Analysis and Maintenance Program (RAMP) Users Group (RUG) Meeting was virtually held April 4 - April 7, 2022. The meeting was hosted by the U.S. NRC, Pacific Northwest National Laboratory (PNNL), and the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA). The meeting welcomed over 207 registered participants, instructors, and support staff from 20 international regulators and organizations. The international participants included representatives from Australia, Austria, Canada, Denmark, France, Ghana, Israel, Italy, Nigeria, South Africa, South Korea, Spain, Taiwan, United Arab Emirates, and the United Kingdom. The domestic and international attendees included multiple Federal and State government agencies, national laboratories, universities, and the nuclear industry.

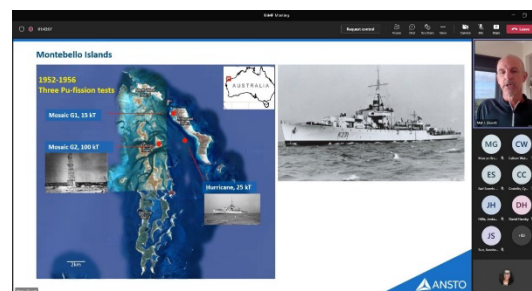
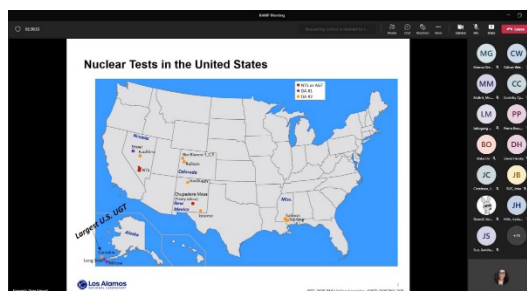
The RUG Meeting opened with a “RAMP Partners Panel,” which included representatives from Australia, South Africa, Canada, South Korea and Israel. This panel provided for the open discussion on the current state of the RAMP codes and the potential future direction of the program. Day one also featured two technical symposiums.

The first technical symposium, “Handling Legacy Sites Symposium,” featured presentations by Lawrence Livermore National Laboratory, ARPANSA, Australia Nuclear Science and Technology Organization (ANSTO), Los Alamos National Laboratory, Edith Cowan University of Western Australia, and the Navajo Nation Environmental Protection Agency. Topics covered during this symposium included presentations on US legacy sites (i.e., US Marshall Islands, Los Alamos weapons testing site and the Navajo Nation sites) and Australia legacy sites (i.e., the Montebello Islands weapons testing site and ARPANSA – Fish Monitoring Program).



U.S. Nuclear Regulatory Commission
Rockville, MD

U.S. NRC RAMP website:
<https://ramp.nrc-gateway.gov/>

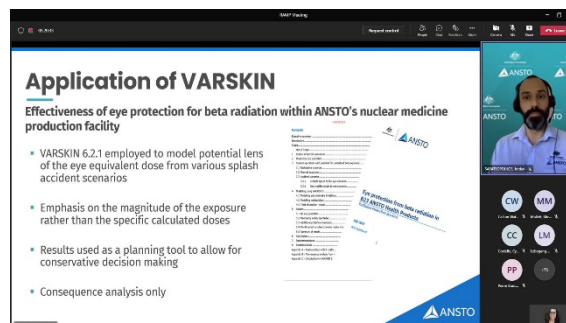


2022 International MEETING RECAP

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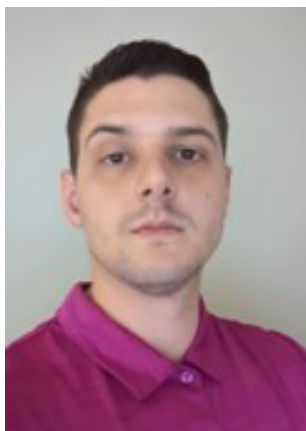
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The second technical symposium, “Dosimetry Analysis in an Industrial Setting,” featured talks by ANSTO, Renaissance Code Development (RCD), and Memorial Sloan Kettering Cancer Center. Topics covered during this symposium included presentations on the “ANSTO: VARSKIN Regulatory Case,” “Dose Assessment of an Iridium-192 Contamination Event,” and the “Dosimetry in the U.S. Million Person Study – Medical Workers.”



TEAM HIGHLIGHTS

Meet Rigel Flora!



The NRC RAMP Team is happy to welcome and introduce its newest member, **Rigel Flora**. Rigel joined the NRC in August 2022 and has taken an active role in the maintenance and development of the RAMP program. Prior to joining the NRC, Rigel received his Master of Science in Radiation Health Physics from Oregon State University and worked for an NRC contractor (Renaissance Code Development, LLC) on a dosimetry analysis research project. In addition to health physics knowledge, he also brings experience with several radiological computer codes to the RAMP Team. Rigel has already assumed the duties and responsibilities for the RAMP Team including:

- Assistant COR for several of the RAMP computer code contracts
- RAMP website management and support
- Assisting with RAMP Users' Group meeting coordination and logistics
- In-house dosimetry support
- Development of the RAMP Computational Analysis User Group (CAUG)
- Assisting with development and release of two Regulatory Guides

In the upcoming months, Rigel looks forward to increased collaboration and interaction with the both the domestic and international RAMP user community. Join us in welcoming Rigel to the NRC RAMP Team.

CODE UPDATES

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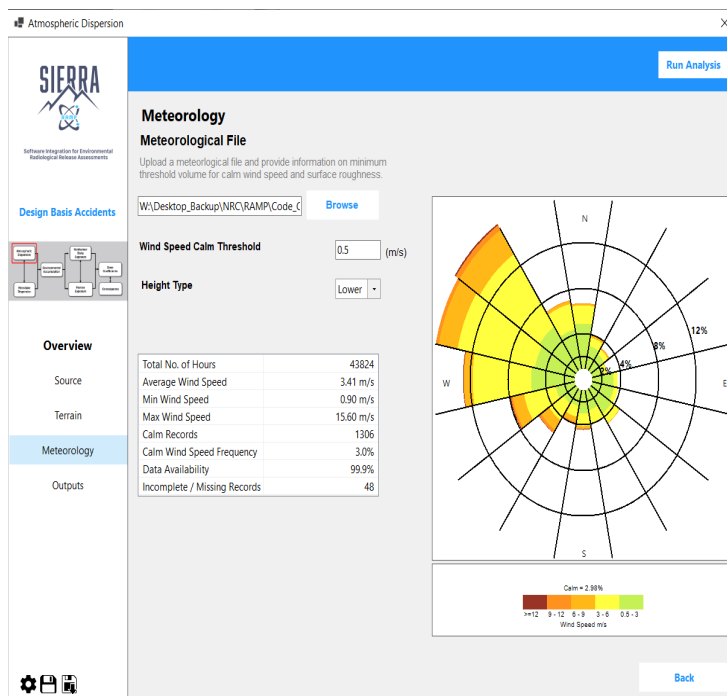
Introducing SIERRA

The NRC RAMP program has initiated code consolidation activities to prepare for the non-light water reactor fleet. Code consolidation involves taking individual RAMP codes that have overlapping capabilities and consolidating these multiple functions into separate scientific engines that can be accessed through a single user interface. RAMP manages 19 different codes with varied development histories and separate user interfaces that require maintenance and modernization to continue successfully operating on the latest computer operating systems. Many of the codes were written with rigid data input and output structures that make them difficult to update and pose unique challenges when sharing information between codes. The goal of code consolidation is to efficiently maintain the functionality of all the RAMP codes while also preparing for the advanced reactor fleet. This consolidated code will be focused on environmental assessment and will be called SIERRA (Software Integration for Environmental Radiological Release Assessments). This effort was first proposed in 2020 and code development began in 2021 at Pacific Northwest National Laboratory (PNNL). This work is ongoing with the first prototype atmospheric dispersion engine nearing completion.

The atmospheric dispersion module is responsible for evaluating releases in cases of design-based accidents (from 100s of meters to 10km) as well as normal effluent releases for sensitive receptors and populations up to 80 km. This module consolidates the scientific functions of ARCON, PAVAN, and XOQDOQ. The atmospheric dispersion module is currently undergoing testing per the software quality assurance plan before it is made available to RAMP users. Following development of the atmospheric dispersion module, efforts will be focused on the source term module development. More information will be shared with the RAMP User's Group community as updates are available.



Software Integration for Environmental
Radiological Release Assessments

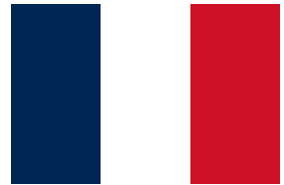


An example of the SIERRA Meteorology GUI

Country Highlights

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The RAMP team would like to highlight countries that have recently renewed their RAMP international agreements or became a new RAMP partner. Please join us in recognizing Australia, Ghana, and Ukraine for renewing their RAMP agreements. Additionally, please join us in welcoming France as a new RAMP partner.



THE COMPUTATIONAL ANALYSIS USER GROUP

The RAMP team would like to highlight a new skills development initiative - the Computational Analysis User Group (CAUG). The CAUG is designed to provide training and additional dosimetry learning opportunities using RAMP computer codes. Weekly hour-long meetings will consist of a lesson by an advance code user on the functionality and uses of a specific code, followed by a set of problems for individuals solve. Initially, focus will be given to the MCNP and PIMAL codes with more codes being included as the group progresses. CAUG training sessions will be recorded and uploaded to the RAMP website along with problem set solutions. Additionally, a new forum section on the RAMP website will be added for additional discussions and questions regarding each training topic.

There are several main objectives of the user group, they include:

- Support NRC's radiation protection framework for reactor and materials licensing.
- Support dosimetry research for the development of rulemaking and guidance documents for best practices in radiation protection.
- Bridge gaps in Strategic Workforce Planning needs.
- Build employee robustness and sustainability in advanced dosimetry methods.

The RAMP Team believes these skills to be invaluable for not only the NRC staff, but also for State and international regulators. We encourage your active participation in the training sessions and use of the upcoming online resources to further develop your dosimetry skills. It is an excellent opportunity for refreshing knowledge or learning a new skill which will help with your professional development. We look forward to RAMP members active participation with this new initiative.

FUTURE EVENTS

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WE'D LOVE TO HEAR FROM YOU!

The RAMP Team welcomes your thoughts and feedback on any code features and enhancements for the RAMP codes and the RAMP website. Please send your feedback to

RAMP@nrc.gov.



Feedback



October 24-27, 2022 (100% virtual) November 1-3, 2022 (hybrid*)

All times listed are Eastern Daylight Time (EDT)

Monday October 24, 2022		DAY 1-Virtual
8:30 AM-9:30 AM		Welcome U.S. NRC & Opening Remarks Keynote Speaker: Northwest Regional Technology Center for Department of Homeland Security
9:40 AM-12:00 PM		Emergency Response Symposium
1:30 PM-4:00 PM		Emergency Response Symposium
Tuesday October 25, 2022		DAY 2-Virtual
8:00 AM-8:50 AM		Morning Primer – VARSKIN+
9:00 AM-12:00 PM		IMBA Training
1:30 PM-4:00 PM		PIMAL
Wednesday October 26, 2022		DAY 3-Virtual
8:00 AM-8:50 AM		Morning Primer – EPA Compliance Codes
9:00 AM-12:00 PM		RASCAL Beginner
1:30 PM-4:00 PM		Turbo FRMAC Overview
Thursday October 27, 2022		DAY 4-Virtual
8:00 AM-8:50 AM		Morning Primer – Code Consolidation
9:00 AM-12:00 PM		RASCAL Intermediate
1:30 PM-4:00 PM		RASCAL Advanced/Turbo FRMAC Discussion
Tuesday November 1, 2022		DAY 5-Hybrid*
8:30 AM-8:50 AM		Opening Session – SNAP/RADTRAD User Meeting Discussions
9:00 AM-12:00 PM		SNAP/RADTRAD Beginner
1:30 PM-4:00 PM		SNAP/RADTRAD Beginner
Wednesday November 2, 2022		DAY 6-Hybrid*
9:00 AM-12:00 PM		SNAP/RADTRAD Intermediate
1:30 PM-4:00 PM		SNAP/RADTRAD Intermediate
Thursday November 3, 2022		DAY 7-Hybrid*
9:00 AM-12:00 PM		SNAP/RADTRAD Open Users' Forum

*Hybrid: in-person and virtual

Full agenda, registration, and additional information will be available on the RAMP website:
ramp.nrc-gateway.gov