



## Summary of the NCRP *Emerging Issues in Radioactive Waste Management* Workshop

As part of the 51<sup>st</sup> HPS Midyear Symposium held in Denver, Colorado from February 4 – 7, 2018, the National Council on Radiation Protection and Measurements (NCRP) hosted a workshop on *Emerging Issues in Radioactive Waste Management*. This was the third in a series of workshops developed by NCRP partnering with the Health Physics Society (HPS) to enhance the content of the HPS Midyear Meetings. The workshop was developed under the leadership of Dr. S.Y. Chen, who is the director of the Professional Master's Health Physics Program at the Illinois Institute of Technology. Dr. Chen is also the former Vice President of NCRP's Program Area Committee (PAC) 5 – *Environmental Radiation and Radioactive Waste*. This special symposium was organized by the PAC 5 membership, which includes representatives from government agencies, higher education, and private industry.

The generation of radioactive waste has been a routine part of industrial activities involving the use of radioactive materials for over a century. The waste classifications, disposal technologies, and regulations for radioactive waste disposal, both nationally and internationally, have evolved over that time; as new issues emerge, new solutions are found.

The NCRP workshop consisted of four sessions from Monday afternoon through Tuesday morning. Each session included two or three invited papers, with a closeout panel discussion at the end of the Monday and Tuesday program. Co-chairs of the workshop were Dr. Chen, William (Bill) Kennedy, Jr., and Dr. William (Bill) Irwin.

The first session was **Remediation and Regulation**. The first paper of the first session was *Contamination Mitigation in the Waste Isolation Pilot Plant (WIPP) Repository* by Casey Gadbury (U.S. Department of Energy Carlsbad Office). Casey outlined the 2014 WIPP contamination event, the recovery process, and return to normal operations in early 2017. The second paper was *High Level Waste (HLW) Tank Closure at Savannah River Site* by Kent Rosenberger (Savannah River Remediation). Kent provided an overview of the Savannah River HLW tank designs and locations, the operational steps needed to empty the tanks, the regulatory process for tank closure, and the operations performed to stabilize the tanks for perpetuity. The third paper was *Final Rule: Low-Level Radioactive Waste Disposal 10 CFR Part 61* by Chris McKenney, Branch Chief of the U.S. Nuclear Regulatory Commission's (NRC) Low-Level Waste, Performance Assessment Organization. Chris described the details and process of supplementing the revised final rule based on Commission directions prior to a 90 d public comment period.

The second session was **Present and Future Issues**. The first paper of the second session was *Nuclear Industry Perspectives on Low Level Waste Management* by Janet Schlueter (Nuclear Energy Institute – presented by Bill Kennedy). Janet's paper provided an overview of the nuclear industry's perspectives on current practices for the continued safe and secure management of radioactive waste. The second paper was *Present and Future Low-Level Radioactive Waste Issues, An Industrial Perspective* by Chris Shaw [Corporate Safety Officer and Technical Services Project Manager of Waste Control Specialists (WCS)]. Chris described the WCS mission of constantly improving their processes across their four disposal facilities including the Compact Waste Facility, Federal Waste Facility, Byproduct Disposal Facility, and Treatment, Storage, and Disposal Facility. The final paper of the second session was *Waste Management Approaches for Handling Technologically Enhanced Naturally Occurring Radioactive Material (TENORM)* presented by Bill Kennedy (W.E. Kennedy Consulting). Bill provided background information on the generation of TENORM from the oil and gas industry, the

status of state TENORM disposal regulations, and the role of NCRP in developing science-based regulations for TENORM waste disposal.

The third session was **Radioactive Waste from Wide-Area Incidents**. The first paper of the third session was *Issues and Framework for Managing Radioactive Waste Wide-Area Contamination* by Dr. Chen. He described the waste management challenges associated with large-scale events and a comprehensive waste management strategy, which would require flexibility in the current waste management policy to protect public health. The second paper of the third session was *Waste Management Challenges Facing Fukushima's Long-Term Recovery* by Sang Don Lee [U.S. Environmental Protection Agency (EPA)]. Sang Don provided an overview of the types and quantities of radioactive waste generated in Japan following the Fukushima accident, and the current and proposed Japanese response. The third paper of the third session was *Tradeoffs Between Decontamination Methods and Waste Management During Response to a Wide-Area Radiological Incident* by Dr. Paul Lemieux (EPA). Paul discussed operational tradeoffs and potential tools that can be used to assess and manage the complex systems involved in managing a wide-area radiological response.

The final session was **Managing Incident-Specific Waste**. The first paper of the final session was *Waste Management and Decontamination of Incident Involving  $^{210}\text{Po}$  in the United Kingdom During 2006* by John Cardarelli (EPA). John described the events regarding the death of Alexander Litvinenko by  $^{210}\text{Po}$  intake, including the: public health decisions, derivation of cleanup levels, instruments and equipment used for remediation, specific decontamination methods used, and waste disposal issues. The final paper was *Managing Waste from Radiological Incidents: Considerations for Decision Making* by Daniel Schultheisz (EPA). Dan indicated that past large contamination events have indicated that management of large volumes of waste cannot be accomplished using the existing disposal infrastructure. He concluded that, although effective waste management starts with the actions of the first responders, state, local, and federal decision makers will need to all understand the long-term implications of decisions regarding demolition, decontamination, and remediation as they balance critical long-term priorities and resources.

The Monday and Tuesday sessions were followed by an interactive panel discussion that allowed a lively audience participation question and answer process. Following the workshop, co-chairs S.Y. Chen, Bill Kennedy, and Bill Irwin thanked the HPS for their support in allowing NCRP to participate in the 51<sup>st</sup> HPS Midyear Meeting. The NCRP Workshop PowerPoint presentations are available on the NCRP website [[http://ncrponline.org/wp-content/themes/ncrp/PDFs/2018/NCRP-HPS\\_Workshop\\_2-2018\\_Presentations.pdf](http://ncrponline.org/wp-content/themes/ncrp/PDFs/2018/NCRP-HPS_Workshop_2-2018_Presentations.pdf)].



NCRP *Emerging Issues in Radioactive Waste Management Workshop* Monday afternoon presenters – left to right: Chris Shaw (Waste Control Specialists, LLC), Chris McKenney (NRC), Kent Rosenberger (Savannah River Remediation), Casey Gadbury (DOE), and Bill Kennedy (W.E. Kennedy Consulting).