Risk Communication and Decommissioning: Challenges and Opportunities

Paul A. Locke, JD, DrPH
Associate Professor
Department of Environmental Health Sciences

JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

Overview of today's talk

- Introduction and Background
- What is risk communication?
- Decommissioning – key issues
- Stakeholders
- Communicating Dose Modeling and Risk Assessment
- Conclusions

© 2014, Johns Hopkins University. All rights reserved.

Introduction and Background

- My background
- Scope of this talk
- Key terms and concepts
  - ✓ Defining risk communication
  - ✓ Why focus on decommissioning process?
  - ✓ How do you communicate dose and risk?
- Conclusions

© 2014, Johns Hopkins University. All rights reserved.

What is risk communication?

- An interactive process of exchange of information and opinion among individuals, groups, and institutions;
- Often involves multiple messages about the nature of risk, or expressing concerns, opinions, or reactions to risk messages or to legal or institutional arrangements for risk management.

National Research Council, Improving Risk Communication (1989)

© 2014, Johns Hopkins University. All rights reserved.

Decommissioning

- The decommissioning process at NPPs
- Key issues:
  - ✓ Timing and length of process
  - ✓ Health and safety (clean up)
  - ✓ Funding and resources
  - ✓ Socioeconomic impacts
  - ✓ Spent fuel and dry cast storage
- Dose and risk assessment communication is colored by the decommissioning process

© 2014, Johns Hopkins University. All rights reserved.

Major stakeholders

- Government
  - ✓ Federal agencies – NRC, EPA
  - ✓ State legislature and agencies
- Community and Interest groups
  - ✓ Local citizen's advisory board
  - ✓ Businesses
  - ✓ Advocacy groups
- Businesses
- Press/media
  - ✓ Traditional
  - ✓ Social media

© 2014, Johns Hopkins University. All rights reserved.

Communicating Dose and Risk

§ 20.1402 Radiological criteria for **unrestricted use.**

A site will be considered acceptable for unrestricted use if the **residual radioactivity** that is distinguishable from **background radiation** results in a **TEDE** to an average member of the **critical group** that does not exceed **25 mrem (0.25 mSv)** per year, including that from groundwater sources of drinking water, and that the residual radioactivity has been reduced to levels that are as low as reasonably achievable (**ALARA**)

© 2014, Johns Hopkins University. All rights reserved.

Conclusions

- Decommissioning will create uncertainties and color risk communication efforts.
- Without understanding the dynamics of decommissioning, it will be difficult to communicate dose and risk effectively.
- Transparency and credibility will bolster communication efforts.
- Develop a proactive communications strategy that involves community leaders.
- To communicate about decommissioning clean up for unrestricted release, be sure to explain how public health will be protected and how socioeconomic challenges will be addressed.

© 2014, Johns Hopkins University. All rights reserved.

Questions?

plocke@jhu.edu
410 – 502 – 2525

(With thanks to Chip Cameron, Esq. and Steven Becker, PhD for their input and expertise)

Johns Hopkins Bloomberg School of Public Health

Resources and References

1. USNRC, Effective Risk Communication: The Nuclear Regulatory Commission's Guidelines for External Risk Communication (NUREG BR/0308) (available at http://www.nrc.gov/reading-rm/doc-collections/nuregs/brochures/br0308/)
2. USNRC, Developing an Emergency Risk Communication (ERC)/Joint Information Center (JIC) Plan for A Radiological Emergency," (NUREG/CR-7032) February 2011, (available at badupws.nrc.gov/docs/ML1104/ML110490119.pdf)
3. National Research Council, Improving Risk Communication, National Academy Press, 1989 (available at http://www.nap.edu/catalog.php?record_id=1189
4. Proceedings from the 2010 National Council on Radiation Protection and Measurements (NCRP) Annual Meeting – published in the November 2011 issue of Health Physics (Volume 101, Issue 5)
5. Deborah Mayo and Rachelle Hollander (eds.), Acceptable Evidence: Science and Values in Risk Management, Oxford University Press, 1991.

© 2014, Johns Hopkins University. All rights reserved.

Resources and References

6. EPA Superfund Technical Assistance for Communities http://www.epa.gov/superfund/community/tasc/pdfs/tasc-brochure-english.pdf
7. Common Radionuclides Found at Superfund Sites (7/02) OSWER Directive 9200.1-34
8. Tran, Locke & Burke. Chemical and Radiation Environmental Risk Management: Differences, Commonalities, and Challenges. Risk Analysis 20(2) pp. 163 – 72 (2000).
9. IAEA. Managing the Socioeconomic Impact of the Decommissioning of Nuclear Facilities. Technical Reports Series N. 464 (2008)
10. CBI and SERA. Vermont Yankee Decommissioning and Stakeholder Engagement: Assessment: Findings and Recommendations. August 29, 2014http://publicservice.vermont.gov/sites/psd/files/Final_VY_Assessment_Report_20140829.pdf

© 2014, Johns Hopkins University. All rights reserved.