

Radioactive Effluents and Environmental Protection 2010



NUCLEAR
ENERGY
INSTITUTE

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RETS-REMP Workshop
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Issues of Interest

- Reporting ^{14}C in ARERs for 2010 and beyond
- Ground water protection
- Unplanned releases
- Unanalyzed pathways
- ICRP 103 changes
 - Part 20 and Part 50
- NRC study of cancer incidence

Regulatory Guide Revisions

- RG 4.21 issued June 2008
- RG 4.1 Revision 2 issued June 2009
 - Revision 1 may still be used
 - Consider on-site monitoring if doses at new locations would be higher than existing locations or new receptors identified
- RG 1.21 Revision 2 issued June 2009
 - Revision 1 may still be used
 - New definitions
 - Assess and document area impacted by leak/spill
 - Develop site conceptual model
 - Monitor and report ^{14}C
 - More than one assessment for public dose
 - Report short-lived isotopes

Carbon-14 Reporting

- For 2010 ARERR
 - Common approach using estimate based on power production
 - EPRI evaluating current methods and refining as needed
 - NRC-Industry meeting on June 10, 2010 on source term effort to date
 - Meeting in 3rd quarter on source term effort and dose model
 - End of year meeting on overall approach

Public Exposure and Stakeholder Confidence

- Ground Water Protection
 - Peer assessments completed
 - Renewed stakeholder and regulator interest
 - Buried Piping Integrity Initiative
 - NRC Groundwater Contamination taskforce report issued June 17, 2010
- Unplanned releases
 - NRC Information Bulletin 80-10
- Unanalyzed exposure pathways
 - Evaporation from surface water
 - Return/reuse/recapture of previously controlled releases

ICRP 103 Implementation

- Changes needed:
 - Currently use 3 generations of dose methodology for radiation protection
 - Dated methodology compared to other countries
- NRC approved development of the technical basis for rulemaking (SECY-08-0197)
 - Possible changes: occupational dose limits, dose constraints, updated methodology and terminology, protection of non-human species
 - Expected timeframe for final rulemaking is 5-7 years
- NEI submitted comments in March 2010
- NRC to hold workshops

Potential Changes to NRC Radiation Protection (RP) Regulations

- The current regulations are fully protective
- Support better alignment of U.S. regulations
 - Encourage uniformity within federal and state regulations
 - With international standards
- Encourage reform, not just updating
 - Include all RP-related elements within NRC regulations and guidance
 - Achieve internal consistency throughout
 - Establish a common scientific and technical basis

Restructure for Future Efficiency

- Put all dose standards, definitions, and generic performance-based requirements in Part 20
- Use other regulations for source-specific safety and security requirements only
- Consider consolidated guidance only
 - one for Part 20
 - one for each source-specific regulation
- One science, one standard, one agency

Additional Issues of Interest New Plants

- Generic FSAR Templates
 - NEI 07-03 Radiation Protection Program
 - NEI 07-08 Occupational ALARA
 - NEI 07-09 Off Site Dose Calculation Program
 - NEI 07-10 Process Control Program
 - NEI 07-11 Cost Benefit Analysis For Radiological Waste Systems Guideline
 - Environmental Protection Plan
 - Accidental releases from liquid waste tank (ISG-013)
 - Ground Water Flow and Transport of Accidental Radionuclide Releases (ISG-014)

NAS Study of Cancer Incidence

- Study Objectives
 - Update 1990 review of cancer incidence and mortality risk for populations living near past, present, and proposed NRC-licensed nuclear facilities.
- Two phases, beginning summer 2010
 - Review existing data & recommend study design and approach
 - Perform study
- Provide opportunities for stakeholder input during the study process
- Provide written report on findings

Issues of Interest – Further Evaluation

- Knowledge transfer and program maintenance
- 10 CFR 20.1406 for existing plants
 - Decommissioning/license termination
- License renewal – environmental issues
- Water use/availability
 - Surface water
 - CWA 316(b)

Decommissioning Planning

- Decommissioning planning rulemaking
 - Changes to financial and monitoring guidance and regulations
 - 73FR No. 14 pages 3812-3846 published January 22, 2008
 - SECY 09-0042 issued March 13, 2009
 - Draft guidance (DG-4014) on surveys and monitoring dated March 2009
 - Revised draft funding guidance June 2009

- Industry comments submitted September 9, 2009

License Renewal Environmental Issues

- Final rule (10CFR51.53) and the Generic Environmental Impact Statement (GEIS) issued in May 1996
 - Required to review/update as needed every 10 years
 - Addendum in 1999
- Scoping begun in 2003, reopened in late 2005
- Proposed rule updating NRC's findings were published in July 31, 2009
 - 74 Federal Register No. 146, pages 38117-38140

License Renewal Proposed Changes

- Other affected documents:
 - NUREG-1437 vols. 1 & 2 “Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants”
 - RG 4.2 S1 “Preparation of Environmental Reports for Nuclear Power Plant License Renewal Applications”
 - NUREG-1555 Supplement 1 “Standard Review Plans for Environmental Reviews for Nuclear Power Plants, Supplement 1: Operating License Renewal”
- Public meetings held in 5 locations
- NEI submitted comments on January 12, 2010
- NRC evaluating comments and schedule for final rule

Environmental Issues Task Force

- Greg Barley, Progress
- Bruce Turner, Luminant
- Rick Buckley, Entergy
- Ed Keating, PSEG
- Dale Holden, Duke
- Jim Breeden, Dominion
- Zigmund Karpa, Exelon
- Joe Danek, FPL
- Rick Doty, PPL
- Kathy Yhip, SCE, STARS
- Karen Kim, EPRI
- Bob Olivera, ANI
- Joe Sears, INPO
- Gregg Schneider, GE

Questions?

Issues of Interest – Lowest Importance/Limited Influence

- New plants
 - hydrologic characterization
 - ODCM
- NRC jurisdiction vs other agencies'
- Alternate disposal of very low LLRW
- Particulate emissions from cooling towers
- CWA 316(a) Thermal discharges
- NPDES
- Underground tanks

License Renewal Proposed Changes

- New generic issues
 - Impacts on geology and soil
 - Exposure of non-human species to radionuclides
 - Socioeconomics
 - Human health impacts from chemicals
- New site specific issues
 - Groundwater and soil contamination
 - Radionuclides released to groundwater
 - Water use conflicts
 - Environmental justice
 - Cumulative impacts
- Expanded scope for “new and significant”

License Renewal GEIS Changes

CURRENT

- Arranged by plant systems
- 92 issues total
- 69 resolved generically
- 21 required site-specific analysis
- 2 required site-specific NRC assessment

PROPOSED

- Arranged by resource area
- 78 issues total
- 58 resolve generically
- 19 require site-specific analysis
- 1 requires site-specific NRC assessment