

Hot Topics in US Commercial LLW Management

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WM2014 CONFERENCE
Phoenix, AZ

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Topics

- Revision to Concentration Averaging and Encapsulation Branch Technical Position
- Proposed Revisions to Instructions for Completing NRC's Uniform Low-Level Radioactive Waste Manifest (NUREG/BR-0204)
- Part 61 Site Specific Analysis Rulemaking
- Update of Low-Level Waste (LLW) Strategic Assessment
- Future Direction for the LLW Program

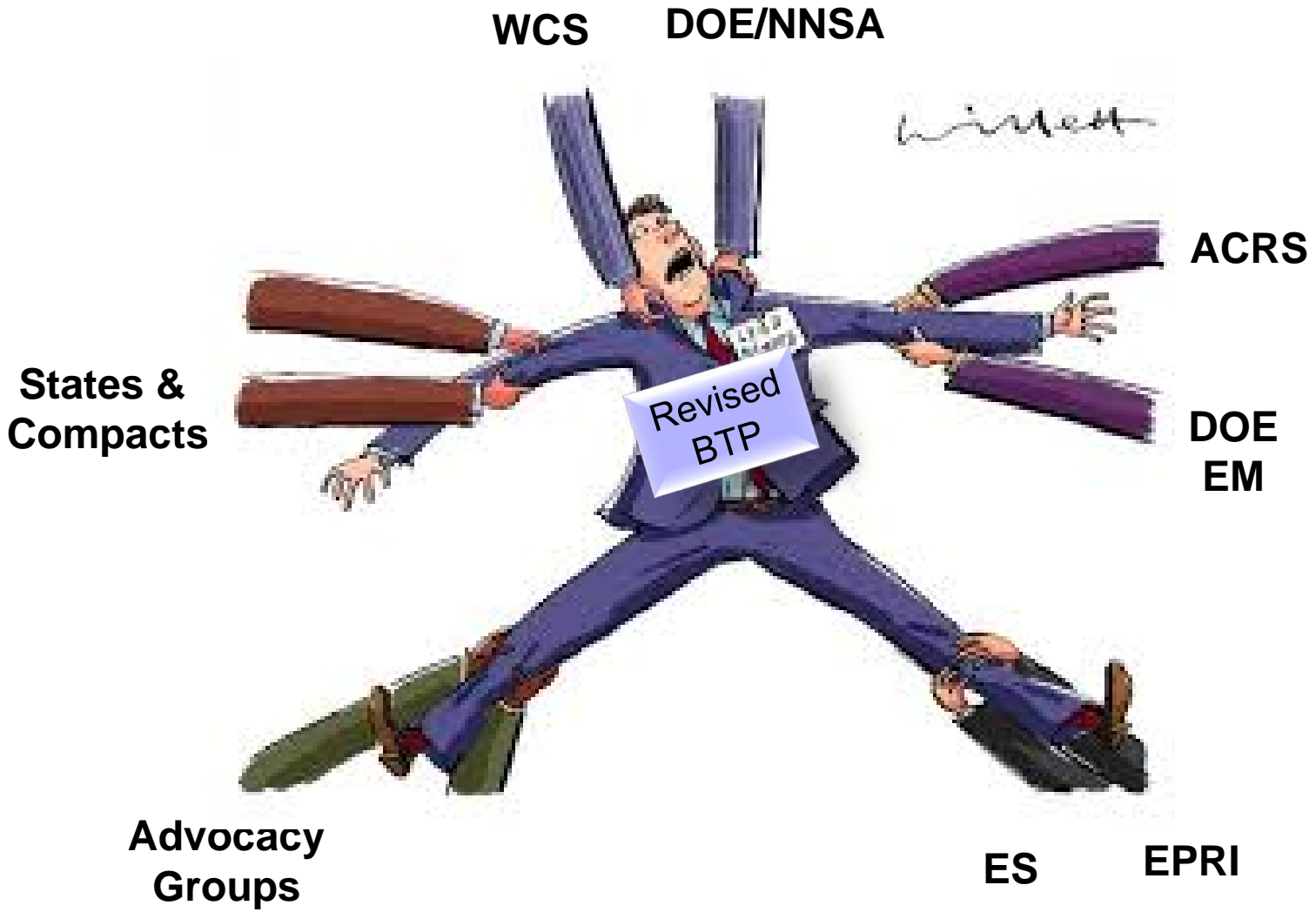


Concentration Averaging Branch Technical Position (BTP) Revision



Background

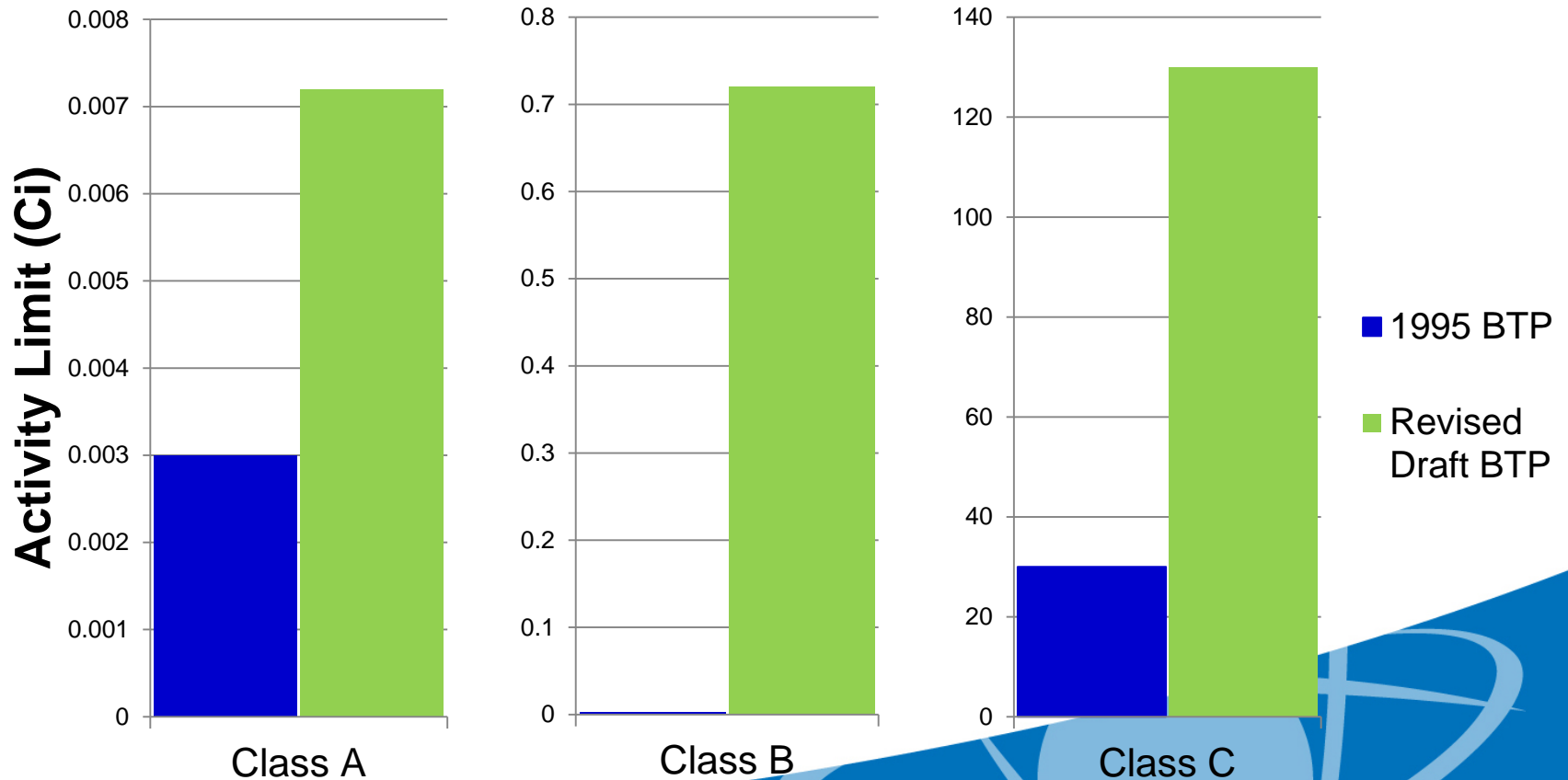
- 10 CFR Part 61--averaging radionuclide concentrations is permitted in classifying waste
- “Hot spots” and protection of an inadvertent intruder
- Questions the BTP answers:
 - How much volume above the limits is permissible?
 - How far above the limits can the concentrations go?
 - Over what volume is this concentration to be measured?
 - How much non-radioactive material can be added?



Improvements in the May 2012 Revised Draft BTP

- Performance-based and Risk-informed
- Blended LLW
- Mixtures of solid items
- Encapsulation of sealed sources
- Cartridge Filters

Revisions in Recommended Source Activity Limits (Table A in BTP) – Cs-137



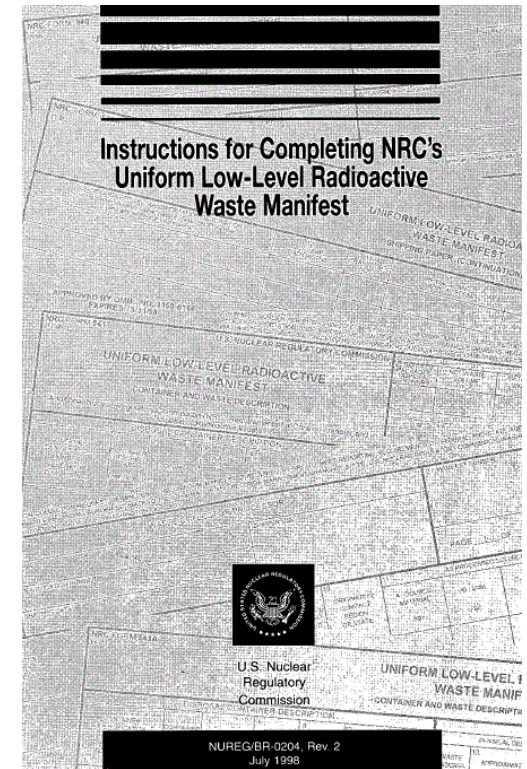
Anticipated and Potential Outcomes

- States adopt the BTP (for the most part)
- Disposal of thousands of sources currently in storage
- States and licensees have more freedom to develop site- and waste-specific averaging approaches.
- Cartridge filters are averaged more rationally and worker doses reduced.
- Discrete items need not be manipulated in packaging to meet an unnecessary uniformity constraint.
- Wastes can be blended, no unnecessary factor of 10 constraint.
- SRM task to develop a homogeneity test for blended waste is completed.

Next Steps

- Draft final BTP nearly completed
- Significant internal review remains
- Final BTP projected later this year
- Implementation plan may be beneficial

Proposed Revisions to Instructions for Completing NRC's Uniform Low-Level Radioactive Waste Manifest (NUREG/BR- 0204)



UWM and NUREG/BR-0204

- 10 CFR Part 20 Appendix G requires that a NRC Uniform Waste Manifest (UWM) be prepared for waste intended for ultimate disposal at a licensed LLRW land disposal facility
 - Requires separate manifest totals for H-3, C-14, Tc-99, and I-129
- NUREG/BR-0204 provides instructions for completing NRC's UWM
 - If the radionuclides are present in a shipment at levels less than the Lower Limit of Detection (LLD), the LLD value must be reported
- The activities of H-3, C-14, Tc-99, and I-129 are difficult-to-measure

Uncertainty in Projected Dose of “Phantom 4”

- These radionuclides frequently contribute significantly to projected dose
- The inventory assumed can significantly affect Performance Assessment results
- Disposal sites may close prematurely for exceeding inventory limits

Next Steps

- Identification of Form and NUREG changes.
- Merging of UWM form changes and NUREG changes with the Part 61 rulemaking.
- Potential publishing of a separate NUREG, if Part 61 is dramatically delayed.
- Potential publishing of guidance on scaling factors to address Phantom 4 concerns.
- Publication of Regulatory Information Summary to provide guidance to licensees regarding the flexibility to use scaling factors to determine DTM radionuclides

PART 61 SITE SPECIFIC ANALYSIS RULEMAKING



2009 Commission Direction

SRM-SECY-08-0147

- Two tasks:
 - Specify a requirement for a site-specific analysis, technical parameters (i.e., new definitions and performance period) to support such analysis, and develop a guidance document.
 - “... in a future budget request, the staff should propose the necessary resources for a comprehensive revision to risk-inform the Part 61 waste classification framework, with conforming changes to the regulations as needed, using updated assumptions and referencing the latest ICRP methodology ...” “... This effort should explicitly address the waste classification of depleted uranium ...”

SRM-COMWDM-11-0002/COMGEA-11-0002

- Flexibility to use current International Commission on Radiological Protection (ICRP) dose methodologies
- Two-tiered period of performance:
 - *Tier 1*: Compliance period covering reasonably foreseeable future
 - *Tier 2*: Longer period based on site characteristics and peak dose to a designated receptor, that is not *a priori*
- Flexibility to establish site-specific waste acceptance criteria based on the results of the site's performance assessment and intruder assessment
- Balance Federal-State alignment and flexibility

2014 Commission Direction

SRM SECY-13-0075



- Three-tiered period of analysis:
 - *Tier 1*: Compliance period of 1,000 years, 25 mrem dose limit for 61.41 and 500 mrem dose limit for 61.42
 - *Tier 2*: Protective Assurance Period from 1,000 to 10,000 years, 500 mrem analytical threshold (goal) for 61.41 and 61.42
 - *Tier 3*: Performance period > 10,000 years, qualitative analysis
- Constancy of features, events, and processes of the natural environment for Tier 2 unless compelling scientific evidence
- Realistic intruder scenarios based on expected activities on and around the disposal site at the time of closure.

2014 Commission Direction

SRM SECY-13-0075

- The proposed rule should be published with a compatibility category “B” applied to the most significant provisions of the revised rule, including the Period of Compliance, the Protective Assurance Analysis Period and its analytical threshold, and the Waste Acceptance Criteria.
- The Protective Assurance Analysis Period (Tier 2) requires the applicant to propose remedial changes to the disposal site design, or impose inventory limits, or propose alternative methods of disposal as it is approached.
- Stress defense-in-depth and safety case.
- Thorough review of guidance by LLW community.

Next Steps

- Staff will revise the rule, statement of considerations, and guidance document over the next year.
- Proposed rule issued for public comment in 2015.
- Extensive stakeholders outreach
 - 120 days comment period
 - 1 or more public meeting to engage stakeholders

LLW STRATEGIC ASSESSMENT



Background-2007 Strategic Assessment

- Rationale: respond to new pressures; prioritize work
- Rigorous analysis of 20 issues
- Seven high priority tasks identified
- Tied to agency strategic goals



Status of the Strategic Assessment

- Strategic Assessment 7 high prioritized activities
 - ✓ Review and Update Guidance on Extended Storage
 - ✓ Develop Guidance on 10 CFR 20.2002 Alternate Disposal Requests
 - ✓ * Determine if disposal of large quantities of Depleted Uranium would change waste classification tables
 - * Update Branch Technical Position on Concentration Averaging and Encapsulation
 - * Develop guidance on alternate waste classification (10 CFR 61.58).
 - Develop Procedures for Import/Export Reviews
 - Perform scoping study of the need to revise/expand byproduct material financial assurance

✓ Completed, * In process

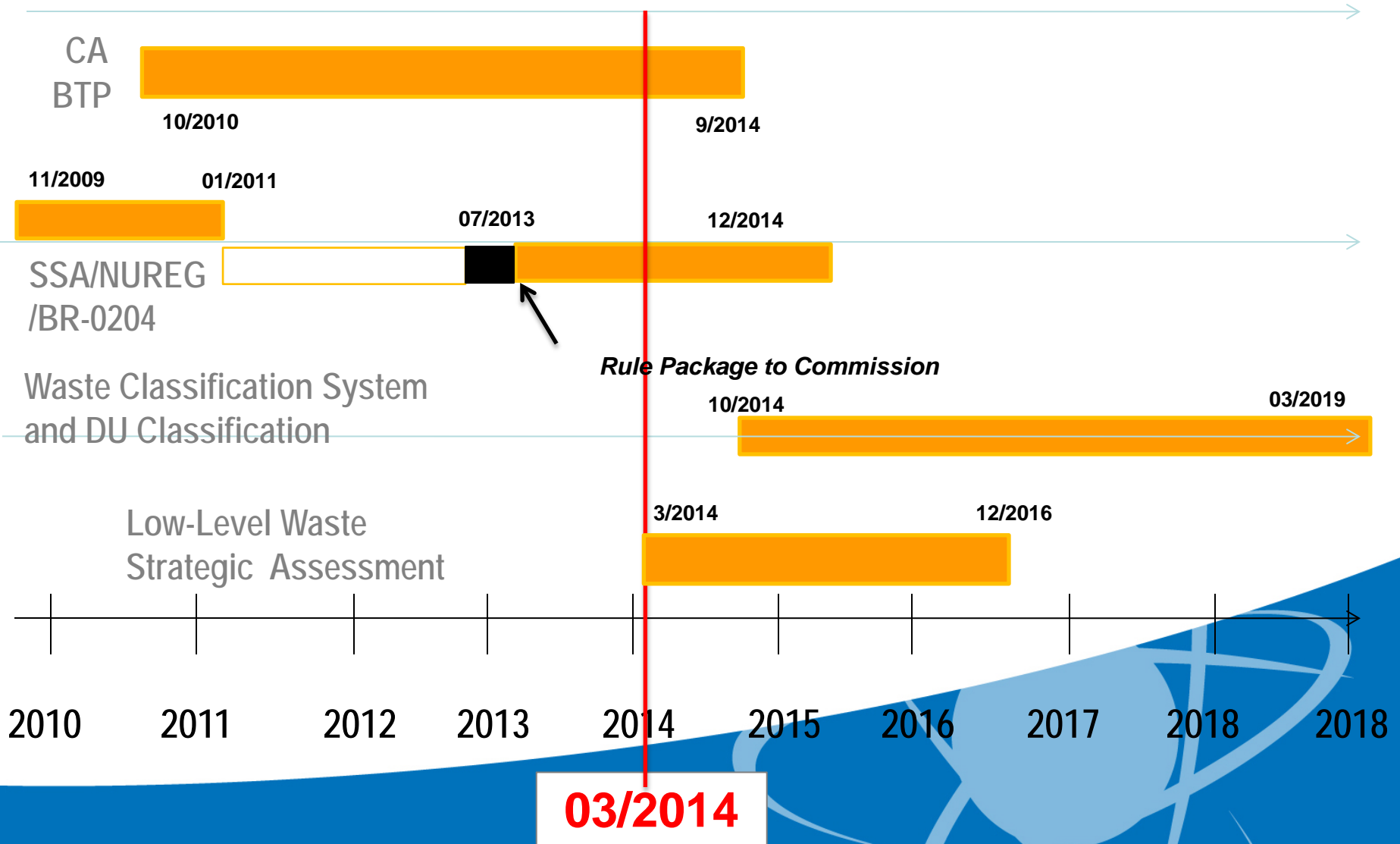
Next Steps

- Public Meeting on March 7th at the Renaissance Phoenix Downtown Hotel from 8 am – 1:00pm
- Federal Register Notice soliciting comments on proposed activities
- Outreach in industry forums to request comment on Draft Updated Strategic Assessment

NRC LLW Program Future Direction

- Concentration Averaging BTP
- Revise NUREG/BR-0204
- Additional Commission Direction on Proposed 10 CFR Part 61
- Revisit LLW Strategic Assessment
- Complete 10 CFR Part 61 Rulemaking
- Waste Classification System
- GTCC ?

LLW Program Timeline In Perspective



QUESTIONS?



If you're not catching any flak,



you're probably not over the target.

