LLW FORUM PART 61 WORKING GROUP SRM OVERVIEW

September 3, 2014

NRC Staff Requirements Memorandum (SRM) Concerning the Part 61 Rulemaking Initiative

Working Group Members

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Background

- Part 61 was originally implemented in 1983.
- Agreement States have been responsible for the regulation of all commercial LLRW sites.
- Need for change is driven by new/unanticipated waste streams.
- Large quantities of Depleted Uranium.
- New BTP on concentration averaging/LLW blending.
- Possible new waste streams associated with new technology.
- Opportunity to integrate ICRP recommendations.

Background (cont.)

NRC staff originally identified the following possible options, which were discussed with stakeholders as part of the meeting:

- Risk-informing the current Part 61 waste classification framework.
- Comprehensive revision of Part 61.
- Site-specific waste acceptance criteria.
- International alignment.
- Superseding direction given in the Staff Requirements.
- Memorandum, "Response to Commission Order CLI-05-20 Regarding Depleted Uranium."

Background (cont.)

The need for detailed guidance on:

- General performance assessment modeling.
- Intruder assessment methodology.
- Risk-informed, performance-based implementation of period of performance.
- Long-term analysis beyond compliance period.
- Site-stability analysis after closure of disposal site.
- Special considerations for blended waste source term.

The proposed rule should be revised to include a regulatory compliance period of 1,000 years

- Regulatory 1,000-year compliance is a reasonable, practical, and achievable approach for short-lived and most long-lived nuclides and is consistent with UMTRCA.
- Majority of disposal sites have done a 1,000-year or more performance assessment for regulatory compliance.
- Eliminates the difficult task of having to justify significant uncertainties of longer time.
- Compliance period for sites accepting significant quantities of long-lived or material with in-growth nuclides should have two components.

The proposed rule should be published with a compatibility category "B" applied to the most significant provisions of the revised rule

- If compatibility category "B" is intended to cover more of the rule, then NRC should clearly identify each section of the rule.
- Compatibility designation of Category "B" would only be reasonable if the more significant proposed changes (e.g., Period of Compliance) have some built-in flexibility.

The proposed rule should be published with a compatibility category "B" applied to the most significant provisions of the revised rule (cont.)

- Compatibility category C allows states the added flexibility to meet state-specific program needs and unique, critical regulatory situations and site conditions.
- NRC and the Agreement States (specifically the sited states) should collaborate to determine an appropriate compatibility category for various elements of the revised Part 61.
- It is strongly recommended that a complete compatibility table be released at the same time that the new revised rule language is released.

NRC approves the 10,000-year intruder assessment analysis, using the same assumptions as the compliance and protective assurance analyses contained in the rule, which should be detailed in guidance documents

- A qualitative analysis covering a performance period of 10,000 years or more after site closure for evaluation of long-term risks associated with the disposal of long-lived low-level radioactive waste makes sense for sites not yet constructed.
- The original provision to allow grandfathering of the four operating sites from new regulatory requirements should be allowed, provided their acceptance criteria do not change and that they can demonstrate compliance with the Federal and State rules.

NRC approves the 10,000-year intruder assessment analysis, using the same assumptions as the compliance and protective assurance analyses contained in the rule, which should be detailed in guidance documents (cont.)

- The SRM does not specify a dose limit for an inadvertent intruder, and the protective assurance analysis dose limit is only a goal (an ALARA limit); the SRM does not specify if it applies to an inadvertent intruder, a member of the public, or both.
- Longer periods of qualitative performance assessment should be required for large quantities of depleted uranium and for the limited number of other radionuclides contributing to dose (i.e., C-14, Tc-99, and I-129), but not for the routine LLRW streams, which contain mostly short-lived radionuclides.

The site-specific analysis for protection of the general public within the 1,000-year compliance period should set a specific dose limit of 25 mrem/yr

- The proposal to set the regulatory dose to the general public at 25 mrem/yr during the 1,000-year compliance period is reasonable and is consistent with dose standards currently found in Part 61.
- All sites' facilities have demonstrated compliance with the 25 mrem/year standard.

The staff should focus on ensuring a thorough review of the draft guidance by the limited community of disposal operations in the U.S.

- One way NRC staff can ensure review "by the limited community of disposal operations" is to convene a working group that has representatives from each of the sited states.

Intrusion scenarios should be realistic and consistent with expected activities in and around the disposal site at the time of site closure

- Convene a working group from each of the sited states to provide input and recommendations on the intruder assessments previously used at their sites.
- Intruder assessments that account for activities or conditions associated with or occurring at the time of closure may oversimplify the process or be unreasonable in terms of physical and societal changes that still have some certainty even in the long term (e.g., technological, climatic changes, etc.).

A further protective assurance analysis should be performed for the period from the end of the compliance period through 10,000 years

- This requirement is of particular importance if a sited state decides to expand its acceptance criteria to allow disposal of large volumes of depleted uranium and other long-lived radionuclides.
- Intruder assessments that account for activities or conditions associated with or occurring at the time of closure may oversimplify the process or be unreasonable in terms of physical and societal changes that still have some certainty even in the long term (e.g., technological, climatic changes, etc.).

A further protective assurance analysis should be performed for the period from the end of the compliance period through 10,000 years (cont.)

- The protective assurance analysis dose limit is only a goal (an ALARA limit); the SRM does not specify if it applies to an inadvertent intruder, a member of the public, or both. If it is a public dose limit, then it is in conflict with the proposed limit (for the general public) of 25 mrem/yr for the compliance period. Setting two different dose limits for the general public is a bad idea.

Approves qualitative analysis covering a performance period of 10,000 years or more to mitigate long-term risks associated with the disposal of long-lived low-level radioactive waste

- The waste classification system already accounts for long-term risks associated with the disposal of long-lived low-level radioactive waste by limiting the concentrations of such material. This requirement should only be focused on sites that are considering disposal of large volumes of depleted uranium or sites that are considering expanding their acceptance criteria to other long-lived isotopes.

The proposed rule should include a clear statement that licensing decisions are based on defense in depth protections

- Part 61 already requires licensing decisions to be based on defense in depth in such areas as waste forms, radionuclide content, engineered features, natural geologic features, and performance assessment.
- It is important that any proposed changes to Part 61 rule language regarding defense in depth (DID) should be general in nature to afford existing closed and operational sites flexibility in meeting any specific requirements.

The proposed rule should include a clear statement that licensing decisions are based on defense in depth protections (cont.)

- Detailed DID attributes should be identified in the technical guidance supporting the proposed revisions but not be required for compatibility. Several states could encounter problems if NRC chooses to make this provision a compatibility B or A category.

There should be a specific question in the FRN notice regarding whether compatibility designations assigned to the various sections are appropriate

- The original provisions of Part 61 allowed grandfathering of sites in operation prior to implementation of the regulations. If a low-level waste site has demonstrated compliance with the current regulations and does not intend to change its acceptance criteria, it should be grandfathered and exempted from the proposed changes.
- Allowing Agreement States and other stakeholders this opportunity is extremely important.

The Advisory Committee on Reactor Safeguards is encouraged to continue to provide its independent review and recommendations

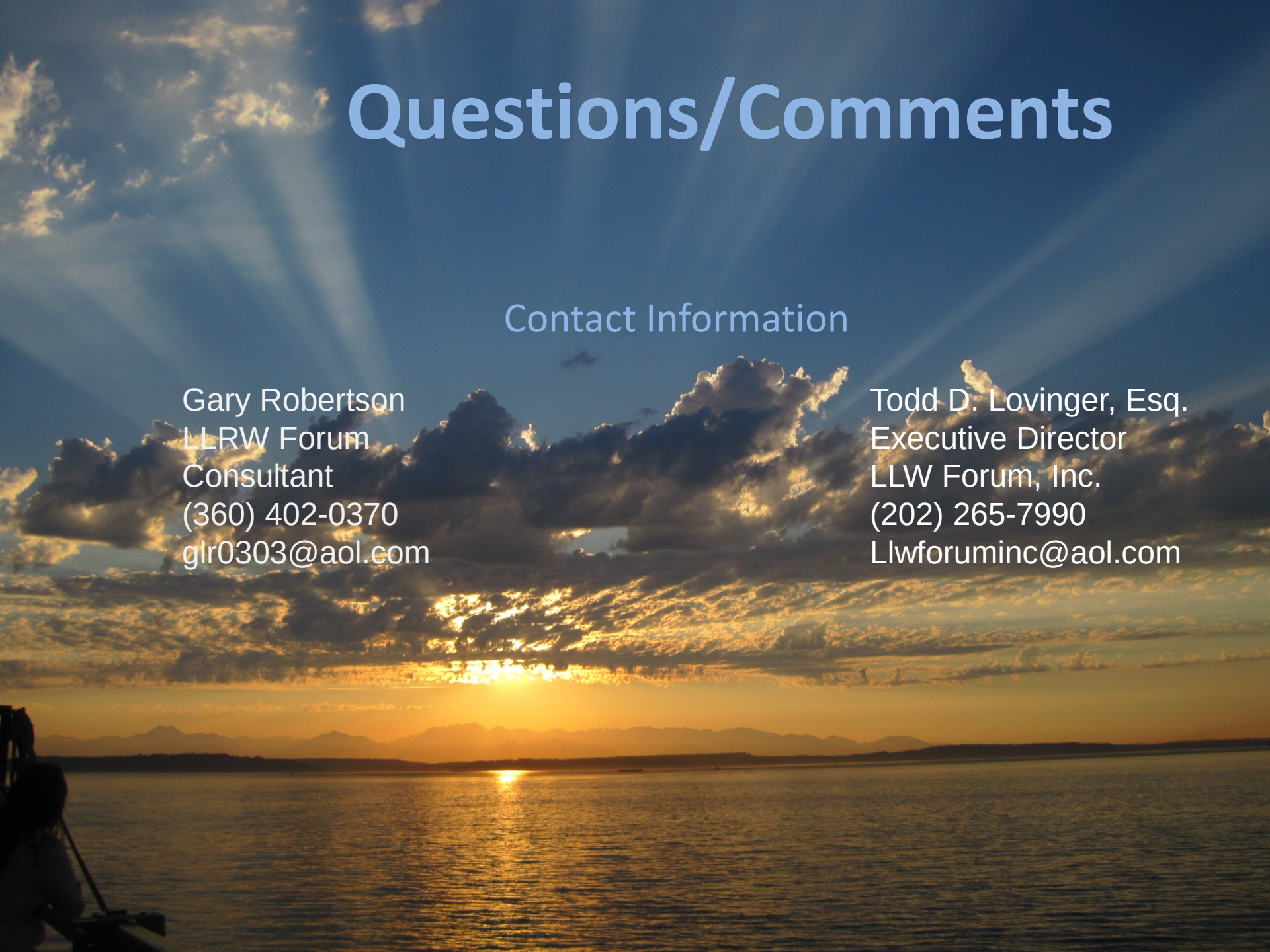
- The ACRS provides important guidance and direction to the Commission.
- This may allow additional opportunity for dialogue and feedback by Agreement States, and particularly sited states, via ACRS meetings.
- As a part of the ACRS's consideration and discussion, we encourage the ACRS to seek the individual and collective input from the sited states.

Other Thoughts

- A potential unintended consequence of NRC's rulemaking is that it may make future site development more difficult. The application of the new requirements to a site such as the Barnwell, South Carolina facility where 86% of the site is in the post-closure observation period, does not seem to reflect stability or predictability. This may make states hesitant to authorize construction of such a facility in the future, as they have no assurance that the rules will not change in the future, even when the majority of the site is in the post-closure phase.

Other Thoughts (cont.)

- NRC needs to make a distinction between unique waste streams and specifically, depleted uranium (DU) and routine commercial waste streams to account for the difference in physical and chemical form and radiological properties.
- The SRM appears to provide no additional health and safety benefits for disposal of routine LLRW and seems to be driven more by the need to allow disposal of large volumes of DU at operating LLRW sites.
- Will this impact sites that have been closed, like Maxey Flats in Kentucky, Sheffield in Illinois, and Beatty in Nevada?



Questions/Comments

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