

Regulatory Guide Periodic Review

Regulatory Guide Number: 8.30

Revision number: 1

Title: Health Physics Surveys in Uranium Recovery Facilities

Office/division/branch: NMSS/DUWP/URLB

Technical Lead: Ronald A. Burrows

Staff Action Decided: Reviewed with issues identified for future consideration

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

RG 8.30, Revision 1 (Rev. 1), "Health Physics Surveys in Uranium Recovery Facilities," issued in May 2002, describes health physics surveys that are acceptable to the U.S. Nuclear Regulatory Commission (NRC) staff for protecting workers at uranium recovery facilities (e.g., uranium mills, in-situ recovery (ISR) facilities, ion exchange recovery facilities, heap leach facilities) from radiation and the chemical toxicity of uranium while on the job. RG 8.30, Rev.1, did not fully incorporate the changes to 10 CFR Part 20 when those regulations were revised in 1991, as was intended. For example, the discussion in Regulatory Position 2.2, "Surveys for Airborne Yellowcake," still refer to the undefined terms "soluble" and "insoluble" instead of the inhalation classes D, W, and Y.

Furthermore, Regulatory Position 2.2 does not address yellowcake processed at uranium ISR facilities. Specifically, RG 8.30, Rev.1, does not address how to evaluate a uranium compound (uranyl peroxide) that is not listed in Appendix B to 10 CFR Part 20.

Other deficiencies have been identified in Regulatory Positions 2.5, 2.6, and 2.7, all of which involve contamination surveys. For example, the recommendations in Regulatory Position 2.5 are based on older dosimetry models (prior to the current 10 CFR Part 20 [i.e., ICRP-2]) and terminology that is not consistent with what is used by NRC licensees (e.g., "inactive area" and "active area" vs. "restricted area" and "unrestricted area"). Another example is that Regulatory Positions 2.6 and 2.7 do not address beta-gamma-emitting radionuclides found in contamination at uranium recovery facilities. These radionuclides have a separate limit from alpha-emitting radionuclides. In addition, although not currently part of RG 8.30, Rev.1, guidance on how to assess the lower limit of detection (Table 3) for contamination surveys should be added using NUREG-1575, "Multi-Agency Survey and Site Investigation Manual," and other relevant guidance documents.

Lastly, Regulatory Position 3 should include an expanded discussion of 10 CFR 20.1204(g). What is currently in Regulatory Position 3 is technically correct. However, through discussions with the uranium recovery industry, there is confusion on how to apply the regulatory requirement correctly at uranium ISR facilities.

- 2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years**

The NRC staff does not anticipate any new or renewal applications in the next several years. However, there will be approximately 3 - 4 inspection activities per year over the next several years (and more in Agreement states). The NRC staff expects minimal impact on the inspection activities as the issues discussed in Section 1 above have been addressed in individual licenses (e.g., specific license conditions). In addition, other available NRC guidance documents address the issues discussed in Section 1 above. For example, RG 8.22, "Bioassay at Uranium Mills," discusses "unlisted uranium materials," NUREG-1736, "Consolidated Guidance: 10 CFR Part 20 - Standards for Radiation Protection Against Radiation," provides examples on how to comply with 10 CFR 20.1204(g), and consistent with "Supplemental Information on the Implementation of the Final Rule on Radiological Criteria for License Termination," (63 FR 64133), individual license conditions require licensees to monitor for beta-gamma-emitting radionuclides found in contamination at uranium recovery facilities.

- 3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contractor resources?**

The NRC staff requires approximately 1-2 FTE to complete documentation of the various technical issues identified in Section 1 above. No contractor support is anticipated.

- 4. Based on the answers to the questions above, what is the NRC staff action for this guide (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?**

Reviewed with issues identified for future consideration.

- 5. Provide a conceptual plan and timeframe to address the issues identified during the review.**

The NRC staff will consider the identified issues as part of the next periodic review.

NOTE: This review was conducted in April 2019 and reflects the NRC staff plans as of that date. These plans are tentative and are subject to change. (ML19141A091)