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May 28, 1999

Chief, Rules and Directives Branch  
U.S. Nuclear Regulatory Commission  
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Washington, DC 20555-0001

Dear Sir:

**REFERENCE: Comments on Draft NUREG-1620 ('Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act')**

On February 3, 1999 the Nuclear Regulatory Commission (NRC) published draft NUREG-1620, a Standard Review Plan (SRP) for analysis of uranium mill and tailings impoundment reclamation plans. In response to a request for comments, the Nuclear Energy Institute (NEI)<sup>1</sup> has conducted a preliminary review of the SRP and offers the following general remarks.

First, NEI is concerned that the SRP has too broad a scope. NUREG-1620 attempts to provide guidance for assessing both reclamation plans (or reclamation plan commitments) submitted with a license application and license amendments pertaining to facility decommissioning after cessation of milling. The guidance for each circumstance is different and is presented in a confusing manner. The SRP has clearly been written to focus on the license termination phase when, for example, a Groundwater Corrective Action Plan and Construction Completion Report may be required. Guidance in evaluating the decommissioning plan commitments in a license application is, however, comparatively absent. For example, no guidance is offered to a reviewer to assess a license applicant's proposed siting and engineering

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<sup>1</sup> NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

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design of a tailings impoundment. Appropriate guidance at the license application phase would facilitate preparation of the Technical Evaluation Report and Environmental Impact Statement. NEI believes that the SRP should be restructured to provide separate guidance for evaluation of *pre-operation* and *post-operation* reclamation plans. Priority should be assigned to developing guidance for evaluation of post-operation reclamation plans to reflect the current state of the domestic uranium milling industry.

NEI's second concern is the overly prescriptive nature of the SRP. The SRP does not reflect the NRC's risk-informed, performance-based regulatory philosophy. NUREG-1620 grants a license applicant little flexibility in determining how to meet established performance criteria. Rather, it prescribes the collection and analysis of voluminous background information and studies to support most decommissioning plan activities. The SRP should, instead, focus the reviewer on the adequacy of a licensee's commitments to meet the reclamation plan goals stated in Part 40 Appendix A and the logic of how the licensee is fulfilling the commitments. How the licensee achieves compliance with a regulatory requirement should remain the prerogative of the licensee. SECY-99-011 confirms this prescriptiveness and recommends its elimination in formulation of the new 10 CFR Part 41 ('Domestic Licensing of Uranium and Thorium Recovery Facilities'). Three examples of overly prescriptive requirements in the SRP are:

- 10 CFR 40, Appendix A Criterion 6 requires installation of an earthen barrier on top of tailings impoundments to ensure that  $^{222}\text{Rn}$  releases do not exceed 20 pCi/m<sup>2</sup>s. This performance criterion is explicit and clear. However, the draft SRP requires extensive testing of the proposed covering materials, geotechnical properties, soil moisture,  $^{222}\text{Rn}$  diffusion and emanation coefficients, computer modeling and a detailed quality assurance program for parameter data. The licensee should have the flexibility to design and construct the radon barrier in accordance with current industry practice and confirm its acceptability through performance of the final facility radiological survey (10 CRR 40.42(j)(2)). How the radon barrier is designed and constructed (clay caps native soils, etc.) should be the sole prerogative of the licensee.
- The requirement in §5.3.3(2) to specify the "...type, range, sensitivity, calibration method and frequency and availability of monitoring equipment..." in a reclamation plan license amendment

is excessive. Such information should not be in a license.

- SRP §2.6 requires a licensee to provide a construction sequence and schedule for decommissioning work, to review restoration plans for borrow areas and to confirm that the tailings impoundment is adequately sized to accommodate tailings to be produced by the mill. A Part 40 licensee is not required to obtain a construction permit for any phase of the mill's operation and should not be obliged to provide a construction schedule or specifications. NRC should not oversee restoration plans for borrow areas, particularly if they are not part of the licensed area and if the borrow material contains no radioactive materials. Ensuring that an impoundment is sufficiently large is a licensee concern, reflecting an assessment of the anticipated economic life of the mill.

Specific information about the implementation of a program commitment in the license should be obtained via NRC inspections. Only draft SRP chapter 5.2 ('Processing Site Cleanup') directs the reviewer to assess the adequacy of the licensee's *commitments*; remaining chapters prescribe voluminous data requirements and detailed studies, the justification of which on a health and safety protection basis, is not apparent.

The introductory paragraphs of 10 CFR Part 40, Appendix A grant a licensee flexibility in meeting the performance criteria for the siting, operation and decommissioning of a uranium mill and mill tailings impoundment. The Acceptance Criteria in numerous SRP chapters confirm this flexibility, but state that licensee adoption of approaches differing from those presented in the SRP will result in longer review times. As a Part 40 licensee must pay for such reviews, the (ominous) implication is that adoption of approaches not endorsed by the SRP will penalize the licensee with higher Part 170 review costs. NEI believes that licensees should not be financially penalized for proposing and implementing new technological solutions for decommissioning problems. NEI recommends that the prescriptive detail in the SRP be deleted to allow a licensee to fulfill its decommissioning commitments in a cost-effective manner using sound engineering judgment.

NEI's third comment concerns the excessive length of individual draft SRP chapters. The '*Acceptance Criteria*' often simply repeat the contents of the '*Areas of Review*'. The regulatory requirements and regulatory guidance should be clearly specified in each section of the SRP to enable a reviewer to



compare the regulatory requirement against the SRP requirements. In some instances inappropriate guidance documents are cited (e.g. reference in §2.6.3 to two Reg. Guides pertaining to nuclear power plants). 'Evaluation Findings' are excessively verbose and should be abbreviated. Sub-chapters 1.2 ('Structural and Tectonic Features') and 1.4 ('Seismically') should be combined and streamlined, as should subchapters 1.1 ('Stratigraphic Features') and 1.2 ('Geomorphology'). All sub-chapters seek information in far too excessive detail. Relevant geologic and seismic information requirements could be shortened to two or three pages.

The SRP makes frequent use of the phrase "...that has been designed in accordance with the guidance suggested by the staff" (e.g. p.3-9 §¶2, p.3-16, ¶7). While licensees will consult with the staff throughout the decommissioning phase, the approach and design of the plan will solely reflect the licensee's best engineering judgment as to how the appropriate regulatory requirement should be met in a cost-effective way that is protective of human health and safety and of the environment. Staff guidance may or may not be reflected in the licensee's ultimate decision.

The SRP introduces the term '*Construction Completion Report*' for a report that a licensee is to submit to the NRC upon conclusion of a mill's decommissioning. There is no statutory or regulatory requirement for either preparation of such a report or for the SRP's one to five year observational period to demonstrate stability of the decommissioned impoundment prior to submission of the report. NEI recognizes the need for such a report, but recommends that it be renamed '*Decommissioning Completion Report*' lest there be any confusion that a Part 40 licensee has any regulatory requirement to seek a construction permit in the licensing process. We also believe that the observational period is unnecessarily long, especially for the case in which the licensee elects to plant a self-sustaining vegetative cover on the reclaimed tailings (5 years).

The SRP often recommends one alternative over another if an '*economic benefit*' can be demonstrated. For example, if the licensee proposes a tailings impoundment slope steeper than 5h:1v, the economic benefit of the steeper slope must be demonstrated (§2.2.3(1)(c)). If the licensee recommends active maintenance of the reclaimed tailings impoundment, the economic benefit of this approach must be demonstrated (§3.4.3(2)). The SRP should only evaluate alternatives in terms of protection of public health and safety and of

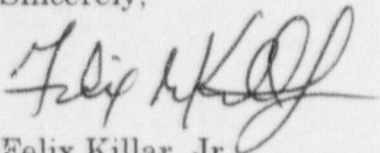
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the environment. The SRP should not request 'economic benefit' justifications.

Draft SRP Chapter 4 ('Water Resources Protection') is excessively complex and prescriptive. Little discussion on background (or baseline) water quality or on the methodology of collecting such data exists. The required analysis of ammonia and nitrate is inappropriate, as neither species is listed as a hazardous constituent in Appendix A, Criterion 13 or in Appendix A, Table 5(c). The SRP offers no justification of why these two parameters constitute a 'significant' health and safety or environmental concern and should be included as contaminants of concern. In the absence of a risk analysis demonstrating such potentially adverse effects, the SRP should not arbitrarily include  $\text{NH}_3$  and  $\text{NO}_3$  as constituents of the ground-water quality monitoring and clean-up program. In developing Alternate Concentration Limits (ALCs) by means of health and environmental risk assessments, §4.3.3(5) requires a licensee to consider the cumulative effects of human exposure to radiological and non-radiological constituents without providing any guidance on how such cumulative effects could be evaluated. This is an extremely complex undertaking that is inappropriately addressed in the SRP. Finally, the SRP references application of 'supplemental standards' in groundwater clean-up without any explanation (§4.4.3(2)) of what these are or how they would be established.

We appreciate the opportunity to review the draft SRP. This letter has focused on several overriding concerns with the structure and philosophy of NUREG-1620. Our principal concern is the unnecessarily prescriptive nature of the document and its failure to reflect the NRC's risk-informed, performance-based regulatory philosophy. NUREG-1620 can be significantly shortened, simplified and restructured to address the needs of a staff reviewer of pre-operational decommissioning plans and post-operational license amendments in decommissioning. We should be pleased to discuss the concerns raised in this letter and to assist in completing a detailed review of a revised NUREG-1620.

Sincerely,



Felix Killar, Jr.

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